



Al Jebrini Co. for Dairy and Food Industries

AL THAHREYEH – HEBRON GOVERNORATE, WEST BANK

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

**FOR THE EXPANSION SUBPROJECT: COW FARMS EXPANSION
AND DAIRY FACTORY, PLASTIC FACTORY, AND ROOFTOP SOLAR
ENERGY SYSTEM ESTABLISHMENT**

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ABBREVIATIONS AND ACRONYMS

BOD	Biochemical Oxygen Demand
BoQ	Bill of Quantities
BP	Business Plan
BMS	Battery Management System
CAP	Corrective Action Plan
CFC	Chlorofluorocarbons
CHP	Combined Heat and Power
CHS	Community Health and Safety
CIP	Clean-In-Place
CO	Carbon Oxide
CoC	Code of Conduct
COD	Chemical Oxygen Demand
COP	Clean out of Place
EA	Environmental Assessment
EHS	Environment, Health, and Safety
EHSG	Environment, Health, and Safety Guidelines
EMMP	Environmental Management and Monitoring Plan
EMS	Energy Management System
EPC	Engineering, Procurement, Construction
EQA	Environment Quality Authority
ESF	Environmental and Social Framework
ESS	Environmental and Social Standards
E&S	Environmental and Social
ESA	Environmental and Social Audit
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental Management Plan
ESMS	Environmental and Social Management System
F4J	Finance for Jobs
FAO	Food and Agriculture Organization
FCV	Fragility, Conflict and Violence
FOG	Fat, Oils, Greases
GBV	Gender Based Violence
GHG	Greenhouse Gases
GIIP	Good International Industry Practice
GM	Grievance Mechanism
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Points
HCFC	Hydrochlorofluorocarbons
HVAC	Heating, Ventilation, and Air Conditioning
IBC	Intermediate Bulk Container
ICF	Investment Co-Financing Facility
IEE	Initial Environmental Evaluation
ISBM	Injection, Stretch, Blow Molding
KWh	Kilowatt Hour
JSC	Joint Services Council
L&FS	Life and Fire Safety
LEV	Local Exhaust Ventilation
LMP	Labor Management Procedures
LOTO	Lock-out/Tag-out
MoA	Ministry of Agriculture
MoH	Ministry of Health
MoF	Ministry of Finance
MoL	Ministry of Labor
MoPIC	Ministry of Planning and International Cooperation
NOx	Nitrogen Oxides
OIP	Other Interested Parties
OHS	Occupational Health and Safety

OWTS	On-site Wastewater Treatment System
PA	Palestinian Authority
PAPs	Project Affected Parties
PCBS	Palestinian Central Bureau of Statistics
PEAP	Palestinian Environmental Assessment Policy
PEL	Palestinian Environment Law
PET	Polyethylene Terephthalate
PIA	Project Implementing Agency
PLL	Palestinian Labor Law
PPE	Personal Protective Equipment
PSI	Palestinian Standards Institute
PV	Photovoltaic
RO	Reverse Osmosis
SDS	Safety Datasheet
SEA	Sexual Exploitation and Abuse
SELCO	Southern Electricity Company
SH	Sexual Harassment
SOP	Standard Operating Procedures
ToR	Terms of Reference
TSS	Total Suspended Solids
UV	Ultraviolet
VOC	Volatile Organic Compounds
WB	World Bank
WC	Water Closet
WHO	World Health Organization
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

INTRODUCTION

The Palestinian dairy sector has become a central pillar of the national agri-food system, supplying most of the domestic demand for fresh milk and dairy products while providing important employment and income opportunities in rural areas. Within this sector, Al Jebrini Co. for Dairy and Food Industries (“Al Jebrini Co.”) is one of the seven leading dairy manufacturers in Palestine, with a diversified portfolio of more than 150 products and an established reputation for quality in the Palestinian market.

Building on its integrated dairy operations and existing cow farms at Al Thahreyeh (Hebron governorate), Al Jebrini Co. plans a strategic expansion at Al Thahreyeh site consisting of four subprojects:

- Expansion of the existing dairy cow farms (additional shed for ~400 head)¹.
- Establishment of a new plastic containers factory to produce in-house food-grade packaging.
- Establishment of a new artisanal “Baladi” dairy factory under the sister company “Al Motawaset for Food Industries”.
- Installation of a 500 kWp rooftop solar photovoltaic (PV) system with battery storage, mounted on the roofs of the new buildings.

The expansion is seeking support from the World Bank–financed Finance for Jobs III (F4J III) Project under Component 2 (Investment Co-Financing Facility - ICF), which provides risk-sharing grants to labor-intensive, economically viable private investments. An environmental and social (E&S) screening conducted under the F4J III Environmental and Social Management Framework (ESMF) categorized the Al Jebrini expansion as a Substantial-risk subproject and recommended preparation of (i) an Environmental and Social Audit (ESA) for existing facilities and (ii) a full Environmental and Social Impact Assessment (ESIA) with site-specific Environmental and Social Management Plans (ESMPs) for each of the four expansion subprojects.

The ESA, finalized in 2025, confirmed that Al Jebrini has introduced a number of good practices but also identified several material gaps in relation to national legislation and the World Bank Environmental and Social Framework (ESF), particularly around wastewater and manure management, environmental licensing, formal E&S management systems, life and fire safety, and grievance mechanisms. A Corrective Action Plan (CAP) was developed to address these gaps in a time-bound manner. The present ESIA builds on these findings and focuses on the incremental risks and impacts associated with the four expansion subprojects, while integrating CAP actions where they directly influence the performance of the expansion.

The overall objective of the ESIA is to identify, assess and manage the environmental and social risks and impacts associated with Al Thahreyeh expansion throughout its life cycle, and to provide Al Jebrini Co. and F4J III with an ESMP that sets out mitigation, monitoring and institutional measures. Specific objectives are to:

- Describe the expansion subprojects and their interaction with existing facilities;
- Summarize the baseline physical, biological and socio-economic conditions in the area of influence;
- Identify applicable national legislation, World Bank ESF standards and Environment, Health and Safety (EHS) Guidelines, and highlight gaps between them. Where the project is guided by the national laws

¹ The expansion of the dairy cow farm has been completed between the period of the E&S Screening report and E&S Audit and the completion of the ESIA. Further details are available in [Section 2.3.1](#).

and regulations, along with the World Bank ESF and ESSs, and World Bank (EHS) Guidelines for the interventions to be financed by the F4J III, detailed in Section 2.2. Further details on the Legal and Institutional Framework guiding the project are available in [chapter 3](#).

- Assess potential E&S risks and impacts, including cumulative effects, for all subprojects and project phases;
- Analyze reasonable alternatives (site, scale, technology, O&M arrangements) and explain the rationale for preferred options;
- Prepare four subproject-specific ESMPs that translate ESIA findings into implementable actions, performance indicators, monitoring requirements and budgets; and
- Inform project design, licensing, procurement, stakeholder engagement and decision-making under F4J III.

Given that the F4J III is expected to support; (i) The plastic factory with a One-step ISBM (Injection, Stretch, Blow Molding) Machine, (ii) and the solar power system installation on the rooftops of the new plastic factory, the new artisanal dairy factory, and the expansion cow farm. This ESIA focuses on the 2 subprojects above, with Good E&S practices presented for the other two subprojects, namely; (a) the cow farms expansion, and (b) the dairy factory in [Annex VII: Good E&S Practices for the Cow Farms Expansion and Dairy Factory](#).

PROJECT DESCRIPTION AND SUBPROJECTS

Al Jebrini's existing operations comprise a main dairy processing plant and headquarters in Hebron city, and a large dairy farm and biogas facility at Al Thahreyeh (between Dura and Al Thahreyeh). The farm complex currently covers around 50 dunums and houses about 1,100 dairy cows in seven sheds, accompanied by feed storage, a management building, and a biogas digestion system that treats manure and wastewater to produce electricity sold to SELCO. Approximately 30 % of the company's milk needs are supplied from its own farm, with the rest sourced from external farmers.

To consolidate and expand this integrated model, Al Jebrini has acquired roughly 350 dunums of additional land adjacent to the existing farm area and plans the following four subprojects:

I. Cow farm expansion

A new steel-frame shed of about 5 dunums has been constructed and is already housing around 400 heifers and young cows. The expanded farm operates mainly as a replacement-rearing and early-lactation unit. Floors combine concrete and natural soil with slopes and channels that convey manure and urine to a lined lagoon and onward to the existing biogas digester. The shed is equipped with mechanical ventilation (fans and misting), drinking and feeding systems, rainwater collection, insect traps and animal identification systems.

II. Plastic containers factory

The plastic factory is located on an industrial plot within Al Thahreyeh expansion area, alongside the new artisanal dairy factory. Its primary function is to produce food-grade PET bottles, cups, containers and caps to meet Al Jebrini's internal demand, using injection molding and a modern one-step Injection Stretch Blow Molding (ISBM) line. Supporting systems include chillers and closed-loop cooling water circuits, air compressors, sleeve applicators and labelling equipment, internal material handling equipment, and a dedicated rest and sanitary area for workers. Electricity is the main utility, to be partly offset by the rooftop PV system.

III. Artisanal "Baladi" dairy factory

The artisanal factory is dedicated to higher-value traditional products (e.g. white cheeses, labneh, ghee, jammed) under the brand of Al Motawaset for Food Industries. The factory layout includes raw-milk reception and cooling, pasteurization and thermal treatment units, fermenters and incubators, cheese vats and presses,

turbo dryers for jammed, ghee processing units, filling and packaging lines, and an integrated Clean-in-Place (CIP) system. Utilities comprise boilers, chillers, compressors, a water treatment unit (filtration, RO and disinfection), and emergency power. Industrial wastewater from production and CIP is planned to be directed to the existing biogas unit for energy recovery, with provision for additional polishing if needed to comply with Palestinian industrial effluent standards.

IV. Rooftop solar PV system

To reduce reliance on grid electricity and fossil fuels, a 500 kWp rooftop PV plant will be installed on the roofs of the plastic factory, artisanal dairy factory and new cow shed. The system includes solar modules on fixed metal structures, inverters, AC and DC cabling, earthing and lightning protection, and a battery energy storage system of about 223 kWh integrated through a microgrid controller. The plant will operate in grid-connected mode with the option of supporting critical loads in an islanded configuration during outages.

All four subprojects are located within Al Jebrini's landholding in Al Thahreyeh, in an area characterized by mixed agricultural and light industrial uses, with scattered residences and no need for land acquisition, resettlement or economic displacement. The expansion follows a typical sequence: (i) planning and design (including ESIA/ESA and permitting), (ii) construction and finishing works, (iii) procurement, installation and commissioning of equipment, and (iv) operation and, for the PV system and equipment, eventual decommissioning.

ESIA METHODOLOGY

The ESIA has been prepared in line with the F4J III ESMF, the World Bank ESF and ESSs, the General and sector-specific EHS Guidelines, and applicable Palestinian legislation. It builds on the earlier E&S screening and the ESA, including its CAP, and focuses on the four expansion subprojects at Al Thahreyeh, with particular emphasis on the two F4J III co-financed components (plastic factory and rooftop PV). The methodology combines: (i) document review of the screening report, existing EIAs and EMMPs submitted to EQA, relevant permits and approvals, ESA and CAP, and technical designs and business plans; (ii) field visits and site inspections to verify locations and construction status, observe environmental and social conditions and operational practices, and identify issues not evident from documents; (iii) compilation of baseline data on the physical, biological and socio-economic environment using secondary sources and field observations; and (iv) legal and institutional analysis of national laws, international conventions, ESF/ESSs and EHS Guidelines, followed by a gap analysis to identify additional project level measures needed to meet ESF requirements.

Impact identification and assessment were then carried out for each subproject and project phase (planning and design, construction and finishing, installation and commissioning, operation and where relevant decommissioning). Activities were mapped against environmental and social receptors, and impacts characterized by nature, affected receptors and cause effect pathways. A simple risk rating matrix was used, based on four parameters (spatial influence, duration, intensity and probability), each scored from 1 to 4, with the total score used to classify unmitigated impacts as Low, Moderate, Substantial or High; the same framework is applied before and after mitigation across all topics, ensuring a clear link between ESIA findings, the ESA CAP and the ESMP measures. Mitigation and enhancement measures were developed following the mitigation hierarchy and considering technical and economic feasibility, with particular attention to groundwater and wastewater management, manure and solid waste handling, OHS and community safety, GBV/SEA/SH, and resource efficiency. The ESIA also includes an alternatives analysis (no project, siting and layout options, different scales and phasing, technology and process choices, and O&M arrangements) and consolidates the results into four subprojects specific ESMPs that set out management and monitoring measures, responsibilities, indicators, frequencies, reporting lines and budgets. Institutional arrangements and capacity building needs are described in Chapter 9, and Chapter 10 sets out the stakeholder engagement approach.

E&S BASELINE

The expansion subprojects are located within Al Jebrini's 350-donum landholding between Dura and Al Thahreyeh in Hebron Governorate, in a rural / peri-urban setting dominated by rain-fed agriculture, scattered residences and emerging light industry. The area forms part of the Hebron Hills at elevations of roughly 600-800 m above sea level, with a semi-arid Mediterranean climate (annual rainfall about 350-450 mm, hot dry summers and cool wet winters). Geologically it overlies fractured limestone and dolomite formations of the Western Mountain Aquifer, which is a strategic groundwater resource for the West Bank but is under stress from over-abstraction and pollution. Soils are mainly calcareous, supporting cereals, olive groves and grazing; local drainage is via seasonal wadis flowing westwards in the Hebron-Wadi Gaza catchment. There is no sewerage network; communities and facilities rely on cesspits and septic tanks, and some wastewater is discharged to wadis, contributing to downstream water-quality problems.

The project footprint itself is largely converted land-existing cow sheds, farm infrastructure and new industrial plots; there are no protected areas or known cultural heritage sites in the immediate vicinity and no natural woodland within the site. Vegetation is mostly crops, planted trees and ruderal species; typical fauna are small mammals, reptiles and common birds, with no critical habitats identified. Socio-economically, Hebron is the most populous governorate and faces high unemployment and chronic water scarcity; Dura and Al Thahreyeh combine agriculture, light industry and services. Al Jebrini is an important local employer (over 300 staff) and a key player in the dairy value chain, with strong backward linkages to livestock producers. Infrastructure serving the area includes a paved access road, SELCO electricity supply and piped water from the Joint Services Council, but services are constrained and intermittent, reinforcing the importance of efficient use of water and energy and of improved manure, wastewater and solid-waste management at the expanded complex.

ALTERNATIVES ANALYSIS

The ESIA considered a "no-project" scenario and a range of siting, scale, technology and operational alternatives. Under the no-project scenario, Al Jebrini would maintain current operations, including existing non-compliances identified in the ESA (notably wastewater and manure management, incomplete life and fire safety, and weak formal E&S systems), and would forgo the economic, employment and resource-efficiency benefits of the expansion and the rooftop PV system. The selected project, an integrated expansion of cow housing, an artisanal "Baladi" dairy factory, plastic packaging factory and rooftop solar PV with storage at Al Thahreyeh, allows these gaps to be addressed in a coordinated way while supporting F4J III's investment and job-creation objectives.

Within this overall choice, alternatives were examined for site layout (dispersed versus clustered facilities), expansion scale, technologies and O&M arrangements. Locating the new factories on Al Jebrini's land next to the farms and biogas unit was preferred over more dispersed options, as it minimizes heavy-vehicle movements through populated areas and enables integrated management of manure, wastewater, solid waste and energy. The chosen scale (around 400 additional cows, an in-house plastic plant sized mainly for internal demand, a small artisanal dairy factory and a 500 KWp rooftop PV with ~223 kWh storage) balances economic viability with the receiving environment's capacity. Technology choices favor roofed, well-ventilated cow sheds linked to the existing biogas system; a dedicated artisanal factory with modern CIP and effluent directed to the digester; PET injection plus one-step ISBM for packaging; and rooftop PV with moderate storage managed through a smart micro-grid. For O&M, the ESIA compares "business-as-usual" practices with an integrated environmental and social management system; the latter is adopted through the ESA CAP and the four ESMPs as the only option consistent with the ESF.

SUMMARY OF E&S RISKS, POTENTIAL IMPACTS, AND MITIGATION MEASURES

Using a four-parameter risk-rating matrix (spatial influence, duration, intensity and probability), the ESIA identifies and grades potential impacts for each subproject and project phase, before and after mitigation. Overall, the expansion is classified as a Substantial-risk subproject under the F4J III ESMF, but most individual risks can be reduced to Moderate or Low with diligent implementation of the ESMPs and ESA Corrective Action Plan. No land acquisition, resettlement or economic displacement is required; all works occur on land owned by Al Jebrini. Key cross-cutting risk areas are: groundwater and surface-water protection (manure, wastewater and storm-water management); solid and hazardous waste (including plastics, chemicals and end-of-life PV/batteries); occupational and community health and safety (OHS/CHS), including life and fire safety; labor rights and working conditions (ESS2), including child and forced labor prohibition; GBV/SEA/SH and harassment risks; traffic and road safety; and resource efficiency and greenhouse-gas emissions.

For the rooftop solar PV system, main risks relate to planning and design (structural integrity of roofs, regulatory approvals), installation works at height and with live electrical systems, and long-term fire, electrical and e-waste hazards. Mitigation measures include structural and electrical design reviews by qualified engineers; compliance with Civil Defense, SELCO and PENRA requirements; contractor OHS plans aligned with the ESF and national OHS regulations; use of certified equipment; safe-work procedures for working at height and live systems; and a decommissioning plan for panels, inverters and batteries, including segregation and licensed disposal or recycling of PV and battery waste.

For the plastic factory, risks include worker exposure to heat, noise, moving parts and plastic fumes; fire and explosion hazards associated with resins and electrical equipment; plastic scrap generation; energy and water consumption; and CHS issues linked to traffic and nuisance during installation and operation. Mitigation measures comprise: enclosed, well-ventilated process areas with local exhaust where needed; machine guarding and lock-out/tag-out; preventive maintenance; fire-detection and suppression systems in line with Civil Defense and relevant EHS Guidelines; segregation and recycling of plastic scrap; closed-loop cooling circuits; strict housekeeping and storage practices; and traffic management measures for delivery and dispatch vehicles.

For the two additional subprojects that are not within the F4J III interventions, and for which, Good E&S measures have been identified in Annex VII: For the cow farm expansion, the main risks concern increased manure and wastewater volumes and associated groundwater contamination, odor and vector nuisances, as well as OHS risks for farmworkers (machinery, animal handling, heat stress), animal health and biosecurity (including diseases), dead animals and carcasses management, hazardous material use and waste management, and air emissions and climate including methane, ammonia volatilization, and dust, as well as community concerns over traffic and flies. Mitigation builds on the existing biogas system and CAP actions: upgrading and lining lagoons and transfer channels; maximizing conveyance of manure and high-strength wastewater to the digester; improving drainage and storm-water separation; implementing a manure-handling and land-application plan; enhancing farm hygiene and fly control; and strengthening farm OHS procedures, PPE use, training and emergency response (including confined-space entry at the digester). Moreover, For the artisanal dairy factory, key risks are wastewater from CIP and process units (high organic load, detergents and sanitizers), solid and organic waste (whey, off-spec products, packaging), OHS risks from boilers, chemicals and wet floors, and food-safety hazards if hygiene is inadequate. Proposed measures include: routing industrial effluent to the biogas plant with appropriate flow and load management; re-using relatively clean wash-water where feasible; implementing HACCP-based food-safety and hygiene procedures; providing full OHS training and PPE; segregating, storing and where possible valorizing organic waste through the biogas unit or approved channels; and enforcing life and fire safety requirements in coordination with Civil Defense.

Across all subprojects, social and labor-related risks are addressed through a combination of: application of Palestinian Labor Law and ESS2; a workers' GM with anonymous channels and GBV-sensitive referral pathways; an updated Code of Conduct covering SEA/SH; minimum-wage and working-hours compliance; medical examinations as per national regulations; and systematic OHS and GBV training. Community health and safety

risks (traffic, emergency events, nuisance) are managed through information disclosure in Arabic, site access control, traffic calming and signage, emergency preparedness and response plans, and a project-level GM aligned with ESS10 and the F4J III grievance system. The ESIA also evaluates cumulative and residual impacts, concluding that, with full implementation of the ESMPs and ESA CAP, residual impacts on groundwater, GHG emissions, biodiversity and community conditions are expected to remain largely within Moderate levels and are offset by positive contributions in terms of local employment, value-chain strengthening and improved resource efficiency at Al Thahreyeh complex.

INSTITUTIONAL ARRANGEMENTS AND CAPACITY

Implementation of the ESMPs and the ESA Corrective Action Plan is led by Al Jebrini Co., as overall project proponent and owner of Al Thahreyeh site. Al Jebrini is responsible for integrating all ESMP and CAP measures into its existing procedures (operations, maintenance, HR, procurement, quality), providing the necessary staffing, budget and equipment, and supervising contractors and suppliers. In line with the ESA, the company will formalize E&S roles by confirming the certification of the current OHS Supervisor and designating this position as the corporate E&S focal point, supported by additional OHS Supervisors / E&S focal points for each major facility (cow farms and biogas system, main dairy plant, plastic factory, artisanal dairy factory and PV system), and by establishing OHS Committees where required by Law No. 3 of 2019. Day-to-day ESMP implementation will be led by the relevant facility managers, who will coordinate closely with the OHS Supervisors and E&S focal points.

Al Motawaset Co., a company linked to Al Jebrini, will act as the facility-level operator for the artisanal dairy factory and, if confirmed, for the new plastic containers factory. Under the overall oversight of Al Jebrini, Al Motawaset will designate its own OHS Supervisor / E&S focal point, implement the specific management plans for these subprojects (wastewater and stormwater, food safety and hygiene, hazardous materials and waste, OHS and community health and safety), and supervise finishing-works contractors inside the new facilities. The F4J III Project Implementation Agency (PIA) will monitor compliance with the ESF, ESSs and the ESMF, review periodic E&S reports, and, where needed, agree on corrective actions with Al Jebrini.

STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE

Key stakeholder groups for the expansion include: project workers (direct and contracted) across all four subprojects; neighboring land users, residents and businesses around Al Thahreyeh site and access roads; municipal and village councils; relevant authorities and service providers (MoNE, MoA, MoH, EQA, MoL, Civil Defense, utilities and JSCs); suppliers, transporters and service contractors; and local community-based organizations, NGOs and vulnerable groups (including women, youth and small farmers). These groups have been identified and mapped in the Stakeholder Engagement chapter. Moreover, a public stakeholder consultation session was held in person on 14 December 2025 at 11:00 at Al Jebrini Co. headquarters, with a Zoom option provided. The session was attended by 13 participants, representing SELCO, Civil Defense, the Ministry of Agriculture, JSC, Hebron CCI and South Hebron CCI, municipal representatives, neighbors and residents, and Al Jebrini Management. Key discussion points included electricity load needs and coordination with DISCOs/SELCO (including a load analysis for the expansion and rooftop PV), licensing status and coordination with competent authorities (including Civil Defense and EQA), complaints handling and grievance channels, employment opportunities including for women, and resource efficiency and recycling measures. Further details are provided in Section 10.2 and Annex VI.

For information disclosure, the ESIA, ESA, CAP and the four ESMPs will be made available in Arabic and, where relevant, in English through Al Jebrini's communication channels (website if functional, social media pages and notice boards at the main gate and reception), and through the F4J III PIA and relevant ministries. Summarized, easy-to-understand materials will be prepared for local stakeholders, highlighting key risks, mitigation measures,

emergency procedures and grievance channels. Any future updates to the ESMPs, significant incidents or changes to project design will be disclosed in a timely manner using the same channels.

GRIEVANCE MECHANISM

The project will operate two complementary grievance mechanisms: (i) a workers' GM covering all direct, contracted and supply-chain workers of Al Jebrini and Al Motawaset; and (ii) an external project GM for community members and other stakeholders. Both systems will be aligned with ESS2 and ESS10 and coordinated with the F4J III project-level GM. Multiple uptake channels will be provided, including phone and WhatsApp numbers, e-mail, in-person reporting to designated focal points, and complaint boxes at accessible locations on the farms and at factory gates. Anonymous complaints will be accepted, and special procedures will be in place for GBV/SEA/SH-related grievances, including confidentiality, survivor-centered handling and referral to specialized service providers. Clear timeframes will be set for acknowledgement, investigation and response, and all grievances and actions taken will be logged and periodically reviewed as part of E&S reporting.

BUDGETERY REQUIREMENTS

Most mitigation measures in the ESMPs are based on good housekeeping, process control and integration into normal design and operating costs, and therefore do not require additional standalone budgets. However, several key actions do entail incremental expenditures. As reflected in Chapter 12 (Table 15), the total indicative ESMP budget for the two F4J III supported subprojects (rooftop PV and plastic factory) is about USD 27,050. For the rooftop PV subproject, around USD 1,900 is allocated mainly for E&S and OHS orientations, a basic noise meter, spill kit, information board and first aid kits. The plastic factory accounts for about USD 25,150, covering spill kits, fire extinguishers, first aid kits, ambient air quality testing, medical examinations, GBV and female workers training, warning signs and information boards, traffic calming measures (speed bumps), PPE and, importantly, energy efficiency sub metering and a plastic recycling shredder.

In addition, and as presented separately in Annex VII (Table 15), Al Jebrini is encouraged to adopt further good E&S practices for the two expansion components that are not directly supported by F4J III (cow farms expansion and artisanal dairy factory), with an indicative combined budget of about USD 122,750. This includes around USD 3,100 for the cow farms expansion (annual soil and groundwater sampling, PPE and periodic OHS training), and around USD 119,650 for the artisanal dairy factory, largely for the onsite wastewater treatment system (OWTS) (about USD 50,000 CAPEX, plus about USD 10,000 per year for three years for OWTS operation), as well as wastewater flow metering and laboratory testing, electricity sub metering, medical examinations, GBV training, signage and information boards, PPE, first aid kits, lockable containers for spoiled products, and the first year cost of a dedicated Food Safety and Hygiene Officer. These amounts are modest relative to the overall investment but are critical to ensure that Al Jebrini can effectively implement the ESMPs, comply with Palestinian legal requirements and the World Bank ESF, and continuously improve its environmental, OHS and food safety performance.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

The Palestinian dairy sector is a cornerstone of the national agrifood system and a critical contributor to local food security, rural livelihoods, and employment. Milk is produced mainly by small and medium family farms, complemented by a limited number of larger, semi-integrated farms that supply processing factories. Over the last two decades, domestic processors have shifted from a relatively small presence in local markets to becoming the main suppliers of fresh milk and dairy products in the West Bank and Gaza, replacing a large share of imported brands. Where until the early 2000s, Palestinian dairy factories held only about 30% of the local market share in both the West Bank and Gaza, with Israeli brands like Tnuva dominating the market. Today, however, Palestinian dairy factories account for approximately 85% of the local demand². The industry is primarily driven by seven major factories and 45 smaller workshops, with the seven larger factories employing between 2,000 and 2,500 workers directly. These numbers do not include the additional jobs created indirectly, both upstream in livestock farming and downstream in areas such as supply chain and logistics.

At the same time, dairy value chains in Palestine face structural vulnerabilities. Production costs are highly exposed to imported feed and energy prices, while operations take place in a context of chronic water stress, fragmented land, and restrictions on movement of goods and people³. Environmental pressures are concentrated in a few areas, including manure and wastewater management, odors, solid waste and packaging, water resources, and greenhouse gas emissions from livestock and energy use. The destruction of agricultural land, livestock and food production assets since 2023 has further highlighted how exposed Palestinian agrifood systems are to conflict-related shocks and how important resilient, resource-efficient production is across the whole territory.

Al Jebrini Co. for Dairy and Food Industries (hereafter referred to as "Al Jebrini Co.") is one of the seven leading dairy manufacturers in Palestine, located in the Hebron governorate of the West Bank. Founded in 1957 and officially registered in 2003, Al Jebrini Co. has consistently expanded its operations by increasing production capacity, diversifying its product offerings, and improving product quality. These steps have helped build strong consumer trust and satisfaction, enabling the company to gradually grow its market share. Today, Al Jebrini produces a wide variety of dairy products, including yogurt, milk, labneh, and various types of cheeses.

As part of its ongoing growth strategy, the company is seeking funding under the World Bank-financed Finance for Jobs III (F4J III) Project to establish:

- a new plastic containers factory,
- Artisanal dairy "Baladi" factory,
- rooftop solar energy system, and
- Expansion of the dairy cow farm.

Al Jebrini Co. aims to expand its farm to bolster the company's milk supply and support the increased demand anticipated from its expanded operations to cover its needs from plastic containers, establishing a new dairy factory dedicated to producing artisanal dairy products which will include a variety of specialty cheeses and traditional dairy, and enhance its energy through the rooftop solar energy project. Hence, with an expected investment cost of 2.3 million USD, the company has applied for a grant from the Finance for Jobs III (F4JII) Project. The ICF grant contribution of USD 900,000 would be disbursed to partially cover the costs of machinery and equipment related to the plastic factory and machinery (One-Step ISBM (Injection, Stretch, Blow Molding)

² Ministry of National Economy – Dairy Industries Sector in Palestine: <https://info.wafa.ps/userfiles/server/pdf/tro.pdf>

³ Ministry of Agriculture – National Agriculture Sector Strategy 2017 – 2022: www.lacs-mopic.ps/public/files/Strategies%20&%20Plans/Agriculture%20Strategies/Agriculture%20Strategy%20English.pdf

Machine) and Supply and installation of Solar Power System Equipment on the rooftop of (i) the new plastic factory, (ii) the new artisanal dairy factory, (iii) the expansion cow farm. [This ESIA focuses on the 2 subprojects above, with Good E&S practices presented for the other two subprojects, namely; \(a\) the cow farms expansion, and \(b\) the dairy factory in \[Annex VIII: Good E&S Practices for the Cow Farms Expansion and Dairy Factory\]\(#\).](#)

1.2. THE F4J III PROJECT

The F4J III project is the third in the Finance for Jobs series of projects, implemented by DAI on behalf of the Ministry of Planning and International Cooperation (MoPIC) with funding from the World Bank. The F4J III's development objective is to sustain and expand the scope of the innovative financial instruments tested under F4J I & II, and to incentivize private investment mobilization and job creation. Al Jebrini's proposed expansion project falls under Component 2 of the F4JIII; the "Investment Co-Financing Facility (ICF)," which provides risk-sharing grant support for economically viable job-creating private sector investments that might otherwise face challenges due to market, institutional failures, or Fragile Conflict Violent (FCV) risk considerations.

1.3. JUSTIFICATION AND PROGRESS OF THE SUBPROJECT'S E&S TOOLS

The F4J III is the first project within the series to adopt the World Bank's Environmental and Social Framework (ESF)⁴. Therefore, and in line with the World Bank ESF, its E&S standards (ESSs), and the F4J III's Environmental and Social Management Framework (ESMF)⁵, an [Environmental and Social \(E&S\) screening](#) was conducted in October 2024 for Al Jebrini's proposed expansion subprojects to assess the eligibility for financing per the ESMF's exclusion criteria, determine the types and levels of potential E&S risks, and determine the E&S risk classification and the required level of E&S assessment. [The screening process categorized the subproject as having a Substantial E&S Risk classification.](#) The recommended E&S management tools included an Environmental and Social Audit (ESA) for the Existing subprojects and Environmental and Social Impact Assessment (ESIA) for the entire expansion including Environmental and Social Management Plans (ESMPs) for each of the expansion subprojects.

Accordingly, an Environmental and Social Audit (ESA) was prepared and cleared in August 2025 for Al Jebrini's existing facilities, namely the two dairy cow farms (an audit of the old one, and an audit of the current situation at the time of the new expansion farm), the biogas digestion facility, and the plastic and artisanal dairy factories that are under construction. The ESA assessed the status of compliance of these facilities with applicable Palestinian environmental, labor, public health and civil defense legislation among others, the terms and conditions of existing EQA and other authorities' approvals, and the requirements of the ESF and ESSs, as well as the World Bank General EHS Guidelines and the sector-specific EHS Guidelines. The audit relied on document review, site inspections, interviews, and analysis of available monitoring data, and resulted in a detailed parameter-by-parameter compliance matrix and gap analysis covering licensing and permitting, E&S management systems, resource efficiency and pollution prevention, OHS, community health and safety, and stakeholder engagement, among other topics identified and assessed in the ESA document.

The ESA concluded that, while Al Jebrini has put in place a number of good practices, there are several important non-compliances and gaps that need to be addressed, including incomplete licensing and approvals for some facilities, non-compliant wastewater management from the farms and biogas facility, partial implementation of EMMP requirements, weaknesses in formal E&S management and monitoring systems, incomplete workers' and community grievance mechanisms, lack of GBV/SEA/SH measures, and gaps in life and fire safety and EHS signage. The ESA therefore included a corrective action plan (CAP) that prioritizes remedial actions, assigns responsibilities and indicative timelines, and identifies measures that are particularly relevant for the expansion

⁴ World Bank, ESF: <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>

⁵ F4J III ESMF: https://www.f4j.ps/cached_uploads/download/2023/05/14/f4j-iii-esmf-final-version-1684046900.pdf

subproject. The full ESA report, including the detailed compliance matrix and CAP, is provided as a standalone document and can be accessed through: [Al Jebrini Expansion Subproject Environmental and Social Audit \(ESA\)](#).

1.4. THE ESIA AND ESMPS OBJECTIVE

This document serves as the Environmental and Social Impact Assessment (ESIA) for Al Jebrini Co.'s expansion subprojects at Al Thahreyeh site, and includes four site-specific Environmental and Social Management Plans (ESMPS) for: (i) the cow farm expansion, (ii) the new plastic containers factory, (iii) the artisanal "Baladi" dairy factory, and (iv) the rooftop solar PV system. As discussed above, the ESIA focus is on the plastic factory and the rooftop solar energy subprojects, with Good E&S practices presented for the other two subprojects, namely; (a) the cow farms expansion, and (b) the dairy factory in Factory. The ESIA and the corresponding ESMPS are prepared in line with the F4J III Environmental and Social Management Framework (ESMF), the World Bank Environmental and Social Framework (ESF) and applicable Palestinian legislation, the ESIA aims to identify, assess and manage the potential environmental and social risks and impacts associated with these subprojects throughout their life cycle, and to inform decision making by Al Jebrini Co.

The ESIA aims to provide clear, consistent and comprehensive guidance on:

- (i) The legal and institutional requirements that apply to the expansion;
- (ii) The key environmental and social issues that need to be considered in the design, construction, commissioning, operation and, where relevant, decommissioning of each subproject;
- (iii) Management plans to be prepared, to seek project approval and to effectively design, construct, commission, operate and decommission projects in a sustainable manner.
- (iv) The measures required to apply the mitigation hierarchy, that is, to avoid impacts where possible, minimize and control those that cannot be avoided, and, where residual impacts remain, restore or offset them in line with Good International Industry Practice and relevant World Bank EHS Guidelines.

The general objective of the ESIA and ESMPS is to ensure compliance with national environmental legislation, as well as with the World Bank's ESF and ESSs in the context of the operation. Further, it serves to identify social and environmental impacts (positive and negative) and risks and to design respective measures to prevent, reduce, mitigate and/or offset/compensate (for) them. Specific Objectives include:

- To prepare an Environmental and Social Assessment (ESIA), including Site-Specific ESMPS for each of the four subprojects. The content of an ESMPS should be written based on the proposed projects, which encompasses the assessment of the potential environmental and social risks and impacts, a comprehensive plan for managing these risks, including measures to minimize negative impacts, enhance positive impacts, and monitor and report on progress.
- To analyze, evaluate, and propose measures to prevent, control, mitigate, restore and/or compensate the potential environmental and social impacts of the project so that the project complies with WB's ESSs and national legislation.
- To include management plans and other instruments detailing environmental and social requirements, to guide the final design of the project and its components, including recommendations for changes to the project design as well as specific actions to be taken by contractors and subcontractors.
- To conduct consultations and engagements with project stakeholders including local communities, civil society organizations, and government agencies, to ensure that their concerns and perspectives are considered throughout the project cycle, including an analysis of interested and affected parties, detailing documentation requirements, and dissemination of information about the project.

The ESIA also draws on the findings of the Environmental and Social Audit (ESA) for existing facilities, and integrates relevant corrective actions into the planning of the new investments.

1.5. PROJECT PROPONENT

Al Jebrini Co. was registered with the Ministry of National Economy in 2003, as a private shareholding company under registration number 562461038. Al Jebrini Co. was founded as a family business with less than 5 workers and two products. The company owns all its facilities' lands. The landownership documents and building permit by the relevant municipality have been reviewed in the E&S screening phase and confirmed in the ESA, details of ownership documents are available in the Annexes of the [ESA](#).

1.6. SCOPE OF WORK

The scope of this Environmental and Social Impact Assessment (ESIA) covers Al Jebrini Co.'s proposed expansion project at Al Thahreyeh site. The ESIA assesses the environmental and social risks and impacts associated with the four expansion subprojects within their area of influence and across all relevant phases of the project life cycle, including planning and design, construction and installation, commissioning, operation and, where applicable, decommissioning.

Within this overall scope, particular analytical emphasis is placed on the two subprojects directly supported by F4J III financing, namely the costs of machinery and equipment related to the plastic factory and machinery (One-Step ISBM (Injection, Stretch, Blow Molding) Machine) and Supply and installation of Solar Power System Equipment on the rooftop of (i) the new plastic factory, (ii) the new artisanal dairy factory, (iii) the expansion cow farm.. The ESIA also examines interfaces and cumulative impacts with the cow farm expansion and the artisanal dairy factory so that environmental and social management measures remain coherent at the level of the whole expansion project. Four site-specific Environmental and Social Management Plans (ESMPs) are prepared, one for each expansion subproject, consistent with the requirements of the F4J III Environmental and Social Management Framework (ESMF) and the TOR for the ESIA. Hence, the preparation of this ESIA and the four subproject ESMPs involved the following main activities:

- An exploratory and scoping stage, including a review of the previously prepared E&S documents for Al Jebrini (screening report, ESA and existing EIA/EMMPs), identification of data availability and gaps, and definition of the additional field work.
- A detailed review of existing project documentation, including technical designs, business plans, cost estimates and information on the proposed workforce and institutional arrangements for managing environmental and social mitigation measures.
- Site visits to the site to verify existing conditions, assess environmental and social sensitivities, understand construction and operational practices and constraints, and identify any unanticipated issues relative to the earlier screening.
- Collection and analysis of baseline information on the biophysical and socio-economic context of the project's area of influence, drawing on secondary data and field observations. This includes land use, water resources, air quality, noise, waste generation, community structure, livelihoods, employment, gender patterns and the presence of vulnerable groups.
- Preparation of a legal and institutional framework analysis, describing the applicable Palestinian laws and regulations, relevant World Bank ESF and ESS requirements and EHS Guidelines, and identifying gaps between national legislation and ESF requirements that need to be addressed through project-level measures and the ESMPs.
- Identification, analysis and rating of potential environmental and social risks and impacts for each subproject and for the integrated site, considering positive and negative, direct, indirect and cumulative impacts, with particular attention to groundwater quality, wastewater and manure management, solid waste and hazardous waste, occupational and community health and safety, GHG emissions and biodiversity.

- Development of mitigation and enhancement measures consistent with the mitigation hierarchy, including differentiated measures for disadvantaged or vulnerable groups, and assessment of the feasibility, costs and institutional requirements of these measures.
- Preparation of four site-specific ESMPs that translate the ESIA findings into concrete actions, performance indicators, monitoring requirements, roles and responsibilities, implementation schedules and budgets, so that environmental and social requirements can be integrated into technical design, procurement, contractor obligations and the financial model.
- Design and implementation of a stakeholder engagement process, including identification and analysis of interested and affected parties, consultations with workers, nearby communities and relevant authorities, and preparation of a stakeholder engagement and consultation approach for the construction and operational phases, consistent with ESS10 and the F4J III ESMF.
- Integration of relevant findings and corrective actions from the ESA CAP for existing facilities into the ESIA analysis and the ESMPs, in order to ensure coherence between remedial measures for current operations and mitigation measures for the expansion subprojects.

2. PROJECT DESCRIPTION

2.1. OVERVIEW OF CURRENT OPERATIONS AND PRODUCTION

Al Jebrini introduced a diverse food basket and currently has over 150 products in the market ranging from yogurts, milk, flavored milk and yogurt, cheese, cold dips, and ready salads, hummus, sour cream, labneh, juice and juice boxes, among others, which are available in different packaging sizes and quantities. Current company offerings can be accessed through the following link: <https://al-jebrini.com/newsite/ar/pdf/AlJebrini-Catalouge-20172.pdf>. Furthermore, Al Jebrini Co. has an ISO 9001 Quality Management Systems certification, Palestine Standards Institution (PSI) quality certificate for whole milk, hummus, and flavored milk, as well as halal certificates and has earned a reputation for quality and competitive positioning in the Palestinian market. Al Jebrini Co.'s production factory and headquarters are in Al Sho'abeh, Hebron city.



Figure 1: Al Jebrini Dairy Products

The company currently employs 306 full-time staff members, distributed on Al-Jebrini's departments as follows:

- 10% of employees working in the administration and management department.
- 67% of employees working the day shift in the production department.
- 13% of employees working the night shift in the production department.
- 5% of employees working in the maintenance department.

- 3% of employees working in the quality control department.
- 2% of employees working in the security department.

The company's workforce consists of 20% in skilled positions, which include management, sales, quality control, and production oversight. The remaining 80% are in non-skilled positions related to production activities.

The gender distribution of Al-Jebrini workforce are 28% female employees and 72% male employees. There are no female employees working in the security, maintenance or the night shift production department. However, female employees make up 52% of the administration department, 30% of the day shift production department and 80% of the quality control department.

While cow milk constitutes the main raw material for Al-Jebrini Co. operations, other input materials include flavorings, powdered milk, spices, herbs, sugar, cultures, enzymes, as well as cleaning chemicals for the Clean-In-Place (CIP), constituting mainly sodium hydroxide and phosphoric acid, in addition to chlorine, Oxonia (peroxyacetic acid), and hydrogen peroxide. Other than that, input material also includes cartons, plastic shrink, and packaging bottles and containers.

In 2007, Al-Jebrini Co. established a livestock farm (milk cows) to produce raw milk, addressing the growing demand in the local market and securing a reliable supply of the main raw material for their products. Initially, the company operated a rented farm in Beit Ula, gradually expanding operations. In 2009, Al-Jebrini Co. moved and have set up their current farms in Al Thahreyeh, located on the southern edge of Dura, extending from the southern border of Dura to the northern lands of Al Thahreyeh. The farm initially covered 8 donums but has since expanded to a total of around 50 donums and around 1100 cows. The currently established cow farms include 35 donums allocated for 7 livestock sheds, with 15 donums used for a management building, 2 biogas balloons, and barracks for the storage and management of feed. The farm aims to adhere to a circular process in terms of waste management. The digesters receive the resulting cow manure and wastewater from the farms and produce energy in the form of heat and electricity (CHP – Combined Heat and Power system), where the electricity is sold to the local electricity distribution company SELCO.

A portion of Al-Jebrini's cow milk needs is supplied by its own farm. The farm collectively provides approximately 30% of the company's total milk requirements. Beyond its role in milk production, Al-Jebrini farm also houses a biogas station that converts cow manure into electricity. This station was designed to generate 1 megawatt of, however, the current generated manure produces around 350 kilowatts per hour.

Moreover, in 2015 Al-Jebrini Co.'s management established a second company with the name "Al Motawaset for Food Industries". Al Motawaset company's establishment aims to create a new line of "Baladi – Artisanal" dairy products which are distinct from Al-Jebrini Co.'s brand, where the new factory for this new company is aimed to be established in the expansion project area. The aim behind creating a second company for the artisanal dairy factory is to avoid misconceptions to the public between the regular Al-Jebrini dairy products and their artisanal products.

2.2. SCOPE OF THE EXPANSION SUBPROJECT

As part of the strategic expansion plan, the company has purchased new land plots adjacent to the existing cow farms, the company will initiate 4 subprojects in this phase to expand their utilization of the new area in Al Thahreyeh and will aim to establish the following within the upcoming year;

- Expansion of the Cow farms to establish an additional cow shed with around 400 new cows.
- Establishment of a plastic factory (for company needs such as bottles and containers).
- Establishment of a new artisanal local dairy products factory (Baladi) – "under Al Motawaset Company"
- Establishment of a rooftop solar energy PV system with 500 KWp capacity

The ICF grant contribution of USD 900,000 would be disbursed to partially cover the costs of machinery and equipment related to the plastic factory and machinery (One-Step ISBM (Injection, Stretch, Blow Molding) Machine) and Supply and installation of Solar Power System Equipment on the rooftop of (i) the new plastic factory, (ii) the new artisanal dairy factory, (iii) the expansion cow farm, as presented in Table 1. :

Table 1: Activities under Al Jebrini Co. Expansion Subprojects Approved for Support by the F4J III

Item	Activity	Installation Location
Machinery and equipment related to the plastic factory.	One-Step ISBM (Injection, Stretch, Blow Molding) Machine	The new Plastic Factory
Solar Power System installation	Supply and installation of Solar Power System	On the rooftop of: (i) the new plastic factory, (ii) the new artisanal dairy factory, (iii) the expansion cow farm

The products under the artisanal dairy factory will include a variety of specialty cheeses and traditional dairy items such as: White boiled sheep cheese, White boiled cow cheese, White sheep cheese for sweets, White cow cheese, White mix cheese for sweets, Jammed (Sheep) – Solid, Jammed (Cow) – Solid, Jammed (Cow) – Liquid, Sheep ghee, Cow ghee, Labaneh in oil, Sheep Labaneh.

The plastic factory will produce plastic containers and bottles to meet Al Jebrini Co.'s needs, utilizing advanced Polyethylene Terephthalate (PET) packaging technology and injection molding processes. Key equipment includes injection machines for creating molds, covers, and handles, as well as pre-forms for bottle production. The factory will also be equipped with sleeve applicators for labelling, along with chillers and compressors to maintain the optimal conditions for production. Additionally, forklifts will be used for efficient material handling and transport within the facility.

Details of Al Jebrini’s current facilities and the status of the expansion subprojects is available in the [ESA](#).

2.3. OVERVIEW OF THE EXPANSION SUBPROJECTS

2.3.1. EXPANSION COW FARMS

Al Jebrini currently operates a large dairy complex on the southern edge of Dura extending toward Al Thahreyeh, with seven existing livestock sheds on about 35 donums within a 50-donum farm that houses roughly 1,100 dairy cows and is integrated with feed storage areas and a biogas digestion system that treats manure and wastewater. Building on this existing platform, the cow farms expansion subproject consists of a newly constructed steel-frame shed on about 5 donums of adjacent land, designed to accommodate around 400 additional heifers and young cows and to operate mainly as a replacement-rearing and early-lactation unit supplying raw milk to Al Jebrini’s processing facilities. The expanded farm will also channel additional manure and wastewater to the existing biogas and manure-management systems.

The type of construction used for the farm is a steel structure (with thermally insulated metal sheets and sandwich panels on the roofs), while the flooring of the farm varies, with some areas consisting of solid concrete and others of natural soil. This depends on the area's most frequently used by the cows, such as the drinking stations, feeding alleys, drainage channels, and the manure collection lagoons, all of which are made of concrete. The farm’s ventilation system combines natural ventilation with mechanical fans, including standard circulation fans and misting fans. Natural ventilation is regulated by mechanical air shields. Due to the farm's buffered location, with no surrounding buildings to obstruct airflow, the natural ventilation remains effective and

unobstructed. Cleaning system in the farm contains a specific manure management system where the manure is collected continuously from the barns to the manure collection lagoons.

- the expansion area for the new cow farm was constructed and completed and the shed on the area of around 5 donums has been erected. Now, the farm is fully operational; it houses around 400 cows and functions as a nursery for newborn calves until they are inseminated and calve (From birth to two years of age). There is a slope in the farm's flooring to allow the cows' urine to flow towards the manure lagoon, where all collected and transferred to the biogas digestion facility. An identification tag is provided for each cow to continuously track data such as milking times, weight, age, feed, calving dates, vaccinations, medications, and pregnancy status. In addition, rainwater collection system is installed, and an automatic air shield is in place to protect the cows from the wind. Green fence and solar lightning are also installed, and fly and insect traps were set up.
- Milking area "ABREAST PARLOR": Cows are milked using automated milking machines "GEA Dairy Robot R9500". Milk is then stored in cooling tanks.
- Feeding facility: it ensures balanced nutrition and efficient feed distribution, this includes; feed storage (such as grains, silage, hay in silos or warehouse), feed preparation (Automated systems mix feed according to nutritional requirements), feed delivery (Mechanized delivery via feed wagons, conveyor belts), and feed monitoring (feed intake is tracked to adjust diets and detect health issues early).
- Water filtration unit: used to purify water for animal use, cleaning, or processing. Typical processes include; Pre-filtration (Removal of large debris and sediments), Filtration Stage (Multi-layer filters such as sand and carbon that remove finer particles and impurities), Disinfection (UV or chlorination to eliminate microbial contaminants), Storage (Clean water is stored in tanks before use) and monitoring (check water quality parameters like pH, turbidity, and microbial load).





Figure 2: The New Expansion Cow Farm

2.3.2. PLASTIC FACTORY – DIRECTLY SUPPORTED BY THE F4J III

2.3.2.1. FACTORY OVERVIEW

The plastic factory will be established within the new Al Tahreyeh expansion area, adjacent to Al Jebrini's existing cow farms. Its primary role is to produce plastic containers and bottles to meet Al Jebrini Co.'s own packaging needs for milk, yogurt, labneh and other dairy products, thereby reducing reliance on external suppliers and improving supply security and quality control. The production line is designed as a modest, in-house facility dimensioned mainly for internal demand rather than for large scale third-party sales.

The factory will utilize food grade plastic resins, primarily Polyethylene Terephthalate (PET), to produce bottles, cups, containers, caps, lids and handles. The facility will include injection molding machines for containers and caps, a one-step injection stretch blow molding (ISBM) machine for bottles, sleeve applicators and labelling systems, chillers and cooling circuits, air compressors and internal material handling equipment such as electric forklifts.

2.3.2.2. PROCESSES AND EQUIPMENT OVERVIEW

The plastic factory will use advanced Polyethylene Terephthalate (PET) packaging technology through two main processes: injection molding for containers, lids, caps and handles, and one-step injection stretch blow molding (ISBM) for bottle production.

- In the injection molding process, plastic granules are fed from hoppers into the injection molding machines. Inside the machine, the granules are conveyed along a heated barrel by a rotating screw and heated to about 200–300 °C until they reach a molten, semi solid state. The molten plastic is then injected under high pressure into cooled steel molds that form the required items, such as containers, caps, lids, covers and handles. The mold is cooled using a chiller-based water system so that the plastic solidifies quickly. Once the part has solidified, ejector pins release it from the mold and the product is

collected, visually checked and transferred to storage or directly to the dairy factory for filling and packing. By changing molds, the same machine can produce different shapes and sizes as required.

- For bottle production, the factory will operate a one-step ISBM line, financed under F4J III, which combines injection, stretching and blow molding in a single machine. Preforms are automatically taken from a preform container, oriented neck up and loaded onto holders, then conveyed through an infrared heating tunnel where their temperature is precisely controlled by an energy efficient, closed loop heating system. After heating, the preforms enter the blow station. A mold closes around each preform, which is then stretched and blown using low and high pressure compressed air to form the final bottle shape, as illustrated in Figure 3. The mold is water cooled, the bottle solidifies, and an automatic discharge system removes the finished bottle and transfers it to the next stage for inspection and packing.

The standard operation of automatic stretch blow molding machine four steps as follow:

- Step 1: put the preform into preform container and the conveyer will take the preform to orientation units automatically.
- Step 2: load the preform at neck up to preform holder, and then preform is conveyed into baking tunnel.
- Step 3: after heating, preform is conveyed into the blow station, then close the molding, stretch and blow under low pressure and high pressure, exhaust, open the mold.
- Step 4. The finished bottle is taken off by automatic discharging system.

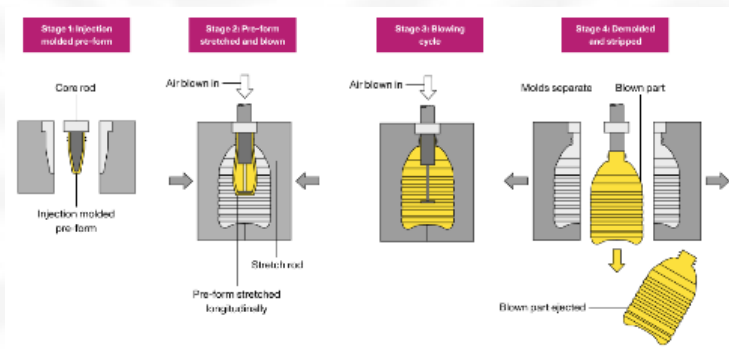


Figure 3: ISBM Process Description

As such, key equipment in the plastic factory will include: injection molding machines and molds for different container and cap designs; the one-step ISBM machine for bottle production; sleeve applicators and associated labelling equipment; chillers and closed-loop cooling systems for mold temperature control; air compressors and high-pressure air systems for blowing; forklifts and internal transport equipment; and auxiliary systems such as material feeders, storage silos or bins and quality control instruments.

2.3.2.3. RESOURCES AND RAW MATERIAL REQUIREMENTS

In terms of resources, electricity will be the main utility required for the injection molding and bottle blowing processes, powering heaters, drives, chillers, compressors and auxiliary equipment. Process water use will be limited mainly to closed-loop cooling in the chiller systems, with no water used as a direct ingredient in the plastic products. The rooftop solar PV system described in [Section 2.3.4](#) will partially offset the factory's grid electricity consumption once installed.

The main raw materials will be food-grade plastic granules suitable for dairy packaging, including PET and other compatible thermoplastic resins, supplied in bags or big-bags and stored in a dedicated indoor area before feeding to the production lines. Crystalline Polyethylene Terephthalate (PET) is mostly procured from SABEK in Saudi Arabia. According to its datasheet, it's a high molecular weight thermoplastic polymer made by continuous melt-phase polymerization process followed by solid-state polymerization. PET is especially suitable for the production of bottles for food and drinks. The high intrinsic viscosity gives the bottle the extra mechanical strength required in hot countries due to the high pressure from carbonation. It can also be used for bottles for non-carbonated and other packaging applications, e.g. edible oil & thermoformed packaging. PET is a polymer not classified as a hazardous substance according to European Regulation No 1272/2008. PET is not categorized as persistent, bio-accumulative, or toxic. PET is not very persistent or very bio-accumulative and is not included in the candidate list of substances of very high concern. In accordance with Regulation No 1907/2006, there is no obligation to provide a material safety data sheet for PET products⁶.

2.3.2.4. CURRENT STATUS OF THE ESTABLISHMENT OF THE PLASTIC FACTORY

Currently, the internal civil and finishing works are nearing completion. The workers' resting area, which includes WCs, has been prepared and will be separated from the management staff's resting area, which is also in the process of being finalized. Both rest areas have had windows and doors installed, with each having a separate entrance distinct from the production area. A rainwater collection system has been set up, and lighting and security cameras are now operational, with electrical wiring fully installed. Additionally, safety measures, including FM 200 and fire extinguishers, have been implemented. The interior lighting units are made of durable plastic rather than glass to prevent product contamination in case of breakage. These lights are suspended by chains to facilitate cleaning and maintenance. Utility lines for electricity, water, and communications have been installed in separate dedicated trays, according to engineering specifications, to ensure ease of maintenance. The ventilation system will be installed once the machinery layout is in place, both vertically and horizontally. The building has been thermally insulated by creating a 20 cm gap between the inner brick layer and outer sandwich panel layer. An electric forklift is in use, and solar-powered LED lighting lamps have been installed.



Figure 4: Plastic Factory Current Status (right) with the Artisanal Dairy Factory (left)

⁶ https://www.polisanhellas.com/pdf/Doc_PetResins_MSDS_PoliPET_Polisanhellas_2017.pdf

2.3.3. ARTISANAL DAIRY FACTORY

2.3.3.1. FACTORY OVERVIEW

The artisanal dairy factory is a new production facility within Al Thahreyeh expansion, dedicated to “Artisanal - Baladi” and other traditional dairy products that are not produced on the main industrial lines. It will receive and test raw milk, then process it through dedicated reception, cooling and pasteurization units into products such as labneh, fermented milks, white cheeses and jammed, using batch-style processes that preserve traditional characteristics while meeting modern food safety standards. The factory is designed mainly to serve Al Jebrini’s domestic market with higher value specialty products, using integrated utilities (CIP system, chillers, boilers and water treatment) and drawing on electricity from the grid, the biogas plant, and the rooftop solar PV system described in this ESIA.

2.3.3.2. EQUIPMENT AND PROCESSES DESCRIPTION

The artisanal dairy factory will be equipped with a range of specialized machinery designed for the production and processing of various dairy products. This includes essential equipment; refrigerators, pasteurizers, and cooling chillers for milk preservation and processing. The factory will feature advanced systems that include a CIP (Clean-in-Place) unit for hygiene, a boiler, and double-jacketed tanks for cooling and heating. Specific production lines for Jammed and cheese will be supported by equipment that include curding tanks, cheese presses, and a drying oven. Additional machinery, such as ghee cooking units, milk tanks, filling machines, and vacuum sealers, will allow for efficient packaging and storage of products like ghee, labneh, and cheese. The factory’s operations will also include a water softener and an air compressor.

The artisanal dairy factory will include a set of service lines and production lines that support the preparation of traditional “Baladi” dairy products while meeting modern hygiene and food safety standards. The overall flow starts with controlled raw milk reception, passes through thermal treatment and product-specific processing steps, and ends with filling, packaging and, for certain products, drying and fermentation.

I. Milk reception and cooling

Raw milk delivered to the factory is first checked using physical, chemical and sensory tests. Only milk that meets the specified quality parameters is accepted. Accepted milk is pumped into an insulated, refrigerated silo tank where it is stored at about 3–6 °C and gently agitated to keep it homogeneous. The milk reception equipment is cleaned after each batch through a Cleaning in Place / Cleaning out of Place (CIP/COP) sequence, which generates wastewater containing milk residues.

II. Central CIP and utility systems

Cleaning and disinfection of processing lines, tanks, heat exchangers and transfer pipes is carried out from a central CIP unit. The typical cycle consists of an initial rinse, followed by circulation of a food grade alkaline solution (liquid caustic soda), a second rinse, then circulation of a food grade acid solution (liquid phosphoric acid) when needed, another rinse, and finally circulation of a sanitizing solution based on peracetic acid and hydrogen peroxide when required. Dedicated chemical preparation tanks feed the CIP system through dosing pumps, and empty chemical cubes are replaced by the supplier. This system is a key source of process wastewater.

Closed loop chillers provide cooling for production lines and cold rooms, while compressors and a steam boiler serve the incubators and thermal treatment units. Refrigerators and incubators are used to cool finished products and raw materials that require refrigeration and to ferment yoghurt and similar products. An

emergency diesel generator will secure essential loads, and the factory will be supplied with electricity from both the biogas plant and the rooftop solar PV system.

Process water is supplied from the same wells used by the farm and from purchased municipal or local vendor water. A dedicated water treatment unit (sand and carbon filters, reverse osmosis (RO), ozone or UV and periodic chemical checks) will condition water to the quality required for the boiler, chillers, different products and CIP. A recovery tank will collect relatively clean wastewater from certain steps so it can be reused in non-critical washing activities.

III. Thermal treatment and product processing

The core production line starts at the thermal treatment unit, which includes a pasteurizer, heat exchanger and holding section. Milk is heated to the required temperature for a defined time in order to destroy pathogenic microorganisms and achieve the desired product characteristics. Holding tubes arranged in serpentine form ensure the required residence time and microbiological safety. Waste streams at this stage consist mainly of milk residues from start up, shut down and cleaning.

Depending on the product, pasteurized milk is then directed to specific processing steps. For fermented products, incubators maintain controlled temperature and time to allow starter cultures to work. For jammed and similar dried products, turbo dryers remove moisture from the concentrated yoghurt until the required dryness is achieved. Ingredient dosing and weighing is carried out in a dedicated section where dry and liquid ingredients are weighed according to each recipe. This step generates small quantities of packaging and cardboard waste.

IV. Filling and packaging

Finished products are filled and sealed in appropriate containers on automatic filling and packaging machines. These lines generate limited quantities of non-conforming or damaged products and packaging offcuts, all of which are collected separately. Equipment and transfer lines in the filling area are also cleaned using CIP/COP procedures similar to those described above.

V. Waste Management

Solid wastes such as empty ingredient containers, damaged packaging and non-conforming or expired products will be collected and, where appropriate, used as feedstock for the existing biogas unit in controlled proportions or disposed of in special containers with locks available with MoH to be disposed by them in designated locations. Additionally, an On-site wastewater treatment system (OWTS) will be installed with the effluent to be used to feed the biogas digester.

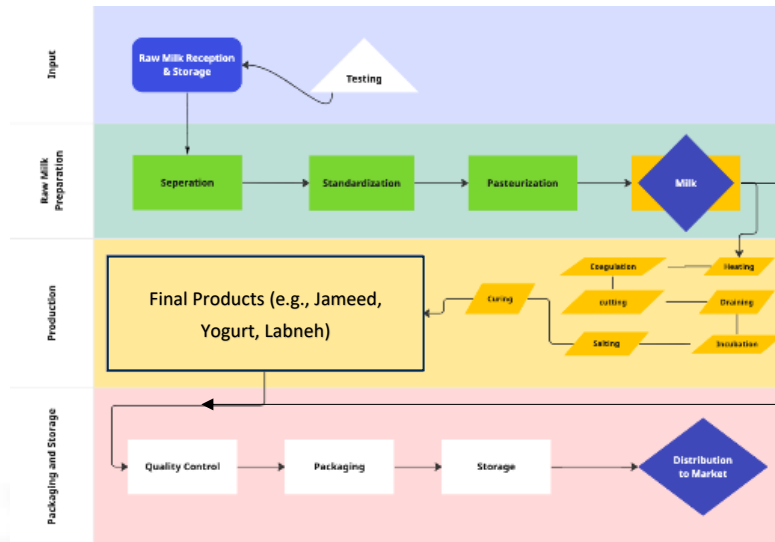


Figure 5: Artisanal Dairy Factory Typical Production Processes Flow

2.3.3.3. RESOURCES AND RAW MATERIAL REQUIREMENTS

The main raw material for the artisanal dairy factory is fresh cow's milk supplied from Al Jebrini's own farms and, when needed, approved external suppliers. Additional food grade inputs include starter cultures, rennet, salt and other minor ingredients required for the different traditional products (labneh, fermented milks, white cheeses and jammed), as well as primary and secondary packaging materials such as plastic containers, lids and cartons. Cleaning and disinfection rely on food grade alkaline and acidic detergents (liquid caustic soda and liquid phosphoric acid) and sanitizing agents based on peracetic acid and hydrogen peroxide, which are stored in dedicated cubes and dosed automatically into the central CIP system.

Electricity is required for all processing, cooling and utility systems, including chillers, pasteurizers, incubators, compressors, the CIP unit and general services. The factory will be supplied with power from the grid, the existing biogas plant and the rooftop solar PV system, with a diesel emergency generator available to secure critical loads during outages. Process water is sourced from the same farm wells that supply the wider complex, supplemented by purchased municipal or vendor water when required. A dedicated water treatment unit comprising sand and carbon filters, reverse osmosis, ozone or UV disinfection and periodic chemical testing will condition the water to meet the specific quality requirements of the boiler, chillers, individual product lines and the CIP system. A recovery tank will allow relatively clean wastewater from selected steps to be reused for non-critical cleaning tasks, reducing overall freshwater demand. Industrial wastewater from production and CIP is intended to be directed as feed to the existing biogas unit, with no separate on site industrial wastewater treatment plant planned at the artisanal factory itself.

2.3.4. ROOFTOP SOLAR PV- DIRECTLY SUPPORTED BY THE F4J III

Al Jebrini plans to install a 500 kWp rooftop grid-connected solar photovoltaic (PV) system at Al Thahreyeh complex to partially meet the electricity demand of the dairy, plastic and farm operations and reduce dependence on utility power. The system is designed as a distributed generation plant installed on suitable roofs

within the site, producing electricity close to the point of use in order to improve supply reliability and reduce losses in transmission and distribution.

The PV plant will consist of solar PV modules mounted on metal support structures fixed to the roofs, connected through solar-grade DC cables to inverters that convert the direct current generated by the modules into alternating current compatible with the facility's low-voltage network. The plant design also includes AC cabling for connection to the internal distribution boards, control and protection panels for monitoring and switching, and a full earthing and lightning-protection system to safeguard people and equipment. Each component is specified to provide a long, trouble-free service life with minimal maintenance requirements.

An energy storage system is included to increase the flexibility and resilience of the power supply. The storage system has a nominal capacity of about 223 kWh based on 314 Ah battery cells, housed in distributed energy-storage cabinets equipped with liquid-cooling to control temperature and extend battery life. The storage is managed through a microgrid system rated at about 599 kW that can operate in both grid-connected and off-grid modes. The microgrid incorporates a three-level Battery Management System (BMS) and an Energy Management System (EMS) that supervise charging and discharging of the batteries and coordinate the flows of electricity between the PV plant, the storage system, site loads, the utility grid and any backup diesel generator.

Together, the PV modules, inverters, battery storage, microgrid controller, earthing and lightning-protection system, cables and control panels form an integrated rooftop solar power plant that will supply a significant share of Al Thahreyeh complex's electricity demand, improve energy security and reduce operating costs and greenhouse-gas emissions associated with the project's activities.

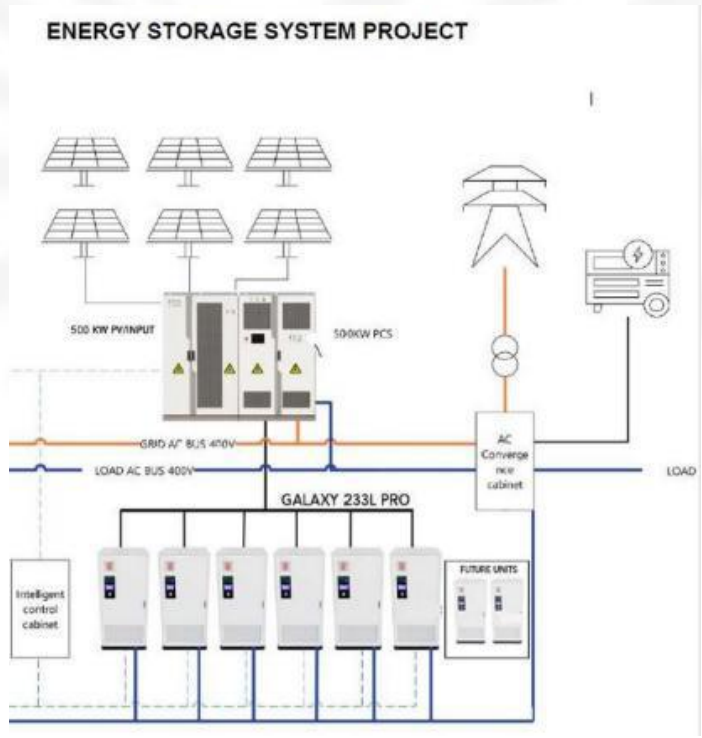


Figure 6: Solar PV and Microgrid Storage Project Chart

2.4. LOCATION OF THE SUBPROJECT

Al Jebrini expansion subprojects are situated between the municipal boundaries of Dura and Al Thahreyeh, in Hebron Governate. The site is around 22 km to the Southern of Hebron city. The proposed expansion⁷ subprojects are located in an area recently bought by Al Jebrini Co., close to their existing cow farms, extending between the municipal boundaries of Dura and Al Thahreyeh. Where the older cow farms are located in Dura's municipal area, while the proposed sites for the expansion subprojects are within Al Thahreyeh.

Both the existing cow farm and the area for the lots for the expansion subprojects fall within geopolitical classification of "area A" according to Oslo Accords. The area owned by the company (total ~350 donums) is surrounded by industrial facilities, an interlock and blocks factory, agricultural lands, and scattered residences with discontinued urban fabric that gets denser Southwest towards Al Thahreyeh and the Northeast towards Dura's surrounding villages. With the direct North and South surrounding the area being agricultural lands and scattered agro-industrial and industrial facilities.

The area, historically and traditionally known for being an agricultural region, has experienced gradual yet steady industrial development and urban expansion. This growth is extending on lands classified as having medium and even high agricultural value. However, with urbanization spreading into the region, several requests for land protection removal have been submitted to the Ministry of Local Government (MoLG) by Dura and Al Thahreyeh municipalities, where it is estimated by the company's engineering consultant that the municipalities submitted land protection removal requests for around 3,000 donums as part of their efforts to create an industrial area in their municipal boundaries.

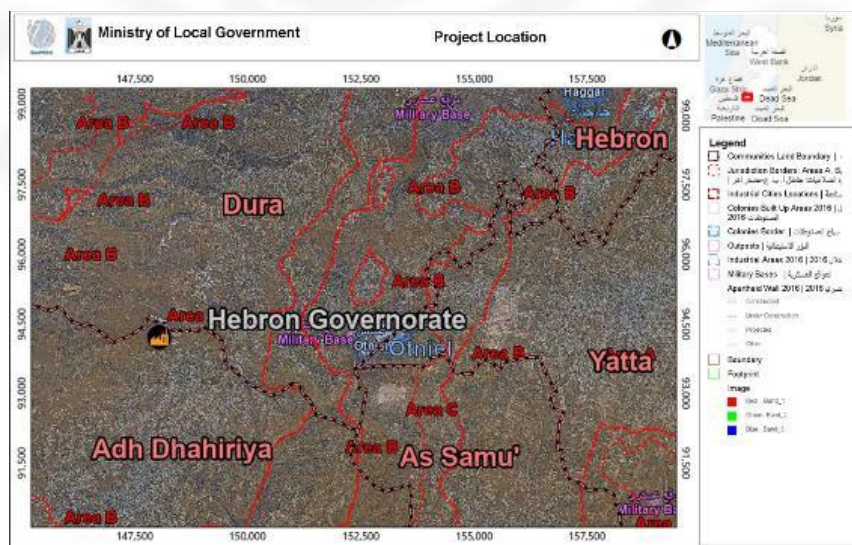


Figure 7: Project Location in Relation to Hebron Governate

⁷ Expansion in this E&S Screening report refers to the expansion of the company's operations. Where the physical expansion will be done only for the cow farms, while the plastic factory, artisanal dairy factory, and rooftop solar energy subprojects are new installations.



Figure 8: Expansion Subproject Components⁸

2.5. SUBPROJECT PHASES

Implementation of the four expansion subprojects at Al Thahreyeh (cow farms expansion, artisanal dairy factory, plastic factory and rooftop solar PV system) follows the same overall sequence identified in the [Environmental and Social \(E&S\) screening](#) Report: planning and design, construction and finishing, procurement and installation, and operation.

Planning and design phase

This phase covers preparation of the ESIA, ESA and site specific ESMPs; finalization of layouts, production capacities and technology choices for each subproject; development of the business plan; and securing all required licenses and approvals from MoNE, EQA, MoH, MoA, MoLG, Civil Defense, SELCO and PENRA. It also includes structural design of the roofs that will host the solar PV system and detailed electrical design of the PV plant.

Construction and finishing phase

Main civil works for the new cow shed, plastic factory and artisanal dairy factory have largely been completed. Remaining works focus on internal and external finishing and infrastructure, such as internal partitions and floors, electrical and electromechanical works, process and wastewater connections for the biogas digester, and installation of septic tanks and utility connections. For the PV subproject, this phase will mainly involve installation of rooftop mounting structures, microgrid elements, and associated safety and protection elements.

Procurement, installation and commissioning phase

This phase includes recruitment of additional staff, procurement and delivery of production equipment, utilities and control systems, and purchase of initial raw materials and consumables. It also covers installation, testing and commissioning of the cow farm equipment, artisanal dairy and plastic factory process lines, and the rooftop

⁸ This aerial image is from 2024, no new updated layers showing latest progress as shown in previous photos has been found or released yet.

PV and storage systems, together with on-the-job training and OHS and emergency response training for workers.

Operational phase

During operations, the cow farms subproject will focus on livestock management, feeding, milking, manure handling and integration with the biogas facility. The artisanal dairy factory will carry out milk reception, pasteurization, fermentation, cheese and jammed production, filling and packaging, and management of by products and wastes. The plastic factory will run injection molding and bottle production lines, quality control, materials and waste management, and routine maintenance. The rooftop PV system will generate electricity for self-consumption, supported by the storage and microgrid system, and will require periodic inspection, cleaning, preventative maintenance and performance monitoring.

A detailed phase by phase description of activities for each subproject is provided in the [Environmental and Social \(E&S\) screening](#) Report for the Al Jebrini Expansion Project.

3. LEGAL AND INSTITUTIONAL FRAMEWORK AND GAP ANALYSIS

3.1. OVERVIEW OF NATIONAL POLICIES, LAWS, AND LEGISLATION

The ESIA is guided by the World Bank's ESF and the F4J III applicable ESSs, the World Bank General EHS Guidelines, World Bank industry-specific EHS Guidelines, and the national Palestinian laws and regulations. A detailed description of the legal and institutional framework is available in the [F4J III ESMF](#).

- **Palestinian National Laws and Regulations:**

- I. The Palestinian Environment Law (PEL)
- II. Palestinian Environmental Assessment Policy (PEAP)
- III. The Palestinian Public Health Law
- IV. Civil Defense Law No. 27 of 2000
- V. The Palestinian Code for Fire Prevention and Protection and its legislation
- VI. The Palestinian Labor Law (PLL)
- VII. Companies Law No.42 of 2021
- VIII. Cabinet of Ministers and Ministerial Decisions on Occupational Health and Safety (OHS) as issued in the addenda of the PLL.
- IX. Decree on Minimum Wage No.4 of 2021
- X. GBV National Referral System of Abused Women No. (28) of 2022.
- XI. The resolution of the Palestinian Cabinet No. 8 of 2016 on the Regulation of Complaints
- XII. Cabinet Decision No. 16 of 2013 regarding connecting residences and facilities to the public sewer network
- XIII. Law No.3 of 2019 regarding OHS supervisors
- XIV. The Palestinian Standards Institution (PSI) Outdoor Noise Standards (PS 840- 2005)
- XV. The Palestinian Standards Institution Ambient Air Quality Standards (PS 801- 2010)
- XVI. The Palestinian Standards Institution Ambient Air Quality Standards (PS 801- 2010)
- XVII. PSI Mandatory Equipment and protective systems intended for use in potentially explosive atmospheres No. 73-2017

- **Palestinian Industry-Specific (Food) Mandatory Specifications by the PSI⁹¹⁰**
 - I. PSI Mandatory Specifications on Pollutant in Food No. 31-2011
 - II. PSI Mandatory Specifications on Food Safety Conditions No. 33-2011
 - III. PSI Mandatory Specifications for Foods of Animal Origin No. 62-2016
 - IV. PSI Mandatory Regulations on Food and Flavor Additives No. 7-2017 and its updates 111-2023
 - V. PSI Mandatory Microbiological Specifications for Foodstuff No. 72-2017
 - VI. PSI Mandatory Specifications on Plastic Material and Substances Intended to Come in Contact with Foodstuff No. 109-2023
 - VII. PSI Mandatory Specifications on Material and Equipment in Contact with Foodstuff No. 104-2022
 - VIII. PSI Mandatory Specifications on the Placing on the Market and Use of Feed No. 120-2024
 - IX. PSI Mandatory Specifications on Food Information to Consumers No. 100-2022
 - X. PSI Mandatory Specifications on Food Contaminants No.83- 2019
 - XI. PSI Mandatory Specifications on General Safety Principles in Products No. 55-2015

3.2. APPLICABLE WORLD BANK ESS AND EHS GUIDELINES

- **World Bank Environmental and Social Framework (ESF) and Applicable E&S Standards (ESSs)**

Based on the E&S Screening conducted for Al Jebrini expansion subprojects, the following are the applicable ESSs to the subproject:

- I. ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- II. ESS2: Labor and Working Conditions
- III. ESS3: Resource Efficiency and Pollution Prevention and Management
- IV. ESS4: Community Health and Safety
- V. ESS10: Stakeholder Engagement and Information Disclosure

- **World Bank Environment, Health, and Safety (EHS) Guidelines**

- I. General EHS Guidelines¹¹
- II. Industry-specific EHS Guidelines: EHS Guidelines for Dairy Processing¹²
- III. Industry-specific EHS Guidelines: EHS Guidelines for Metal, Plastic, Rubber Products and Manufacturing¹³
- IV. Industry-specific EHS Guidelines: EHS Guidelines for Mammalian Livestock Production¹⁴

⁹ For a comprehensive list of PSI's mandatory technical specifications: <http://www.psi.pna.ps/ar/TechnicalInstructions/Pages/MandatoryTechnicalInstructions.aspx#InplviewHashe447914c-a890-41d7-ba00-f8f65ae6feda=FolderCTID%3D0x012001>

¹⁰ As this list is continuously updated by PSI and new amendments or standards are introduced, the list in the above reference should be constantly monitored by the company

¹¹ EHS General Guidelines: <https://documents1.worldbank.org/curated/zh/157871484635724258/pdf/112110-WP-Final-General-EHS-Guidelines.pdf>

¹² EHS Guidelines for Dairy Processing: <https://www.ifc.org/content/dam/ifc/doc/2000/2007-dairy-processing-ehs-guidelines-en.pdf>

¹³ EHS Guidelines for Metal, Plastic, Rubber Products and Manufacturing: <https://www.ifc.org/content/dam/ifc/doc/2000/2007-metal-plastic-rubber-products-ehs-guidelines-en.pdf>

¹⁴ EHS Guidelines for Dairy Processing: <https://www.ifc.org/content/dam/ifc/doc/2000/2007-dairy-processing-ehs-guidelines-en.pdf>

3.3. LEGAL AND REGULATORY FRAMEWORK GAP ANALYSIS

The Key gaps between the Palestinian laws, policies, and regulations and the World Bank relevant ESSs are summarized in below table, the project will apply whichever is more stringent in this regard:

Table 2: Key Gaps between Palestinian National E&S Legislation and the World Bank's ESF and ESSs Applicable to the Subproject

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
ESS1: Assessment and Management of Environmental and Social Risks and Impacts			
<p>Identify, assess, evaluate, and manage environment and social risks and impacts.</p>	<p>Environment Act No 7, 1999 aims to protect the environment from all different forms of pollution, inserts environmental protection grounds in the economical & social developmental plans, conserves the biodiversity, protects the environmentally sensitive areas and improves the environmentally damaged areas.</p> <p>Chapter 3 of the Environment Act No 7, 1999 relates to the EIA; section 1 identifies the subjected projects under the EIA studies, section 2 sets out the nature of licenses and permissions on the projects that may affect the environment, section 3 lays out the inspections and the administrative procedures regarding the facilities and the projects.</p> <p>PEAP of 2000 includes the environmental assessment for investment projects and includes three types of EA documents that represent the life cycle of the EA review process. These include: (1) Environmental Approval Application (2) Initial Environmental Evaluation (IEE), and (3) Environmental Impact Assessment (EIA).</p> <p>The only social aspect included is the consultation with stakeholders.</p>	<p>No significant gaps between ESS 1 and the national laws. It is however noted that the Palestinian Laws focus more on environmental protection and does not cover social aspects thoroughly as does ESS1.</p>	<p>The subproject's E&S assessment will adhere to the requirements of the ESF and ESS while incorporating the legal requirements of the PEL and PEAP . This will allow adopting the more stringent regulations as the WB ESSs meet the Palestinian requirements.</p>
<p>To adopt a mitigation hierarchy approach to:</p> <ol style="list-style-type: none"> 1. Anticipate and avoid risks and impacts; 2. Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; 3. Once risks and impacts have 	<p>Environment Act No 7, 1999 aims to protect the environment from all different forms of pollution, inserts environmental protection grounds in the economical & social developmental plans, conserves the biodiversity, protects the environmentally sensitive areas as well as improves the environmentally damaged areas.</p> <p>PEAP of 2000 includes requirements for environmental management and different tools to assess and measure the impacts of risks associated with projects. The PEAP requires proponents to identify associated potential risks, study alternatives, and propose mitigation measures relevant to the magnitude of the identified risks.</p>	<p>No significant gaps between ESS1 and the various national laws.</p>	-

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>been minimized or reduced, mitigate; and</p> <p>4. Where significant Residual impacts remain, compensate for or offset them, where technically and financially feasible.</p>			
<p>To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.</p>	<p>No specific provisions in the National laws exist in this context. The PEAP 2000 states that one of the objectives of the EA process is to ensure that communities are not resettled from their land and to ensure adequate mitigation measures in this regard.</p>	<p>This is a gap between ESS1 and the national laws.</p>	<p>The E&S assessment and tools for the Al Jebrini Expansion subproject will utilize the ESSs and will build on the F4J III ESMF through the ESIA, ESA, CAP, and ESMPs ensuring adequate identification and mitigation of E&S risks and impacts.</p>
<p>To utilize national environmental and social institutions, systems, laws, Regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.</p>	<p>There are many Palestinian institutions, regulations, and laws that support the environmental protection and the sustainable development listed in section 3.1 above and in the F4J III ESMF as well as international environmental conventions that are adopted. National sector specific laws are adhered to in investment projects (e.g., law of Agriculture, Public Health, Hazardous Waste Management System, etc.). The requirements of ESS1 are considered more stringent in terms of the E&S assessment, especially the social aspects, but does not contradict the PEAP and national laws.</p>	<p>In general, national systems and laws cover the topics included within the ESSs and EHS Guidelines to a certain extent, in most cases, the ESF and EHS Guidelines are more stringent.</p>	<p>The E&S tools for Al Jebrini including the ESIA and ESMPs will adopt the most stringent standards and regulations on a case-by-case basis. While still ensuring adherence to the minimum requirements of national laws and legislations and meeting the requirements of the ESF, ESSs, and EHS guidelines.</p>
<p>To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.</p>	<p>The Palestinian Environmental Law includes as one of its main objectives: "Encouragement of Collection and Publication of Environment related Information to Raise Awareness of Environmental Problems". Article 4 of the law includes the duties of EQA to work on environmental education through schools, universities, institutions and others and to encourage individual initiatives. The law itself along with the PEAP and other applicable laws collectively aim to improve sustainability of projects and minimize environmental and social impacts. Nevertheless, these laws focus more on environmental protection and general awareness and does not include specific provisions for investment projects capacity building.</p>	<p>Palestinian Environmental Laws and systems do not comprehensively cover social aspects as does ESS1. And do not focus on capacity building for investment project proponents.</p>	<p>Through the subproject's E&S tools including the ESIA, ESA, and ESMPs, E&S capacity building will be highlighted in line with the ESF and ESS1 requirements as well as focusing on social aspects which are not adequately covered in national laws, which will be in line with the F4J III's SEP and ESMF as well as the ESF and ESSs, particularly ESS10.</p>
ESS2: Labor and Working Conditions			
<p>To promote safety and health at work.</p>	<p>Section 5 of Chapter 1 of the Public Health Act No 20, 2004 states Occupational Health. Article 34 of this section identifies the health conditions to be met by workers in their occupations, trades, and</p>	<p>There is no major gap between the requirements of ESS2 and the national</p>	<p>Apply OHS mitigation measures in the F4J III ESMF and LMP, as well as the requirements of</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
	<p>industries that may affect their health; it also identifies the initial & preventive tests that are vital for workers in their occupations, trades, and industries.</p> <p>Chapter 5 of the PLL No 7, 2000 lays out the conditions of the work, section 1 of this chapter defines the working hours and leaves;</p> <p>Article 68; the working hours are 45 hours per week,</p> <p>Article 69; daily working hours shall be reduced by at least one hour in hazardous or harmful work to health and night work.</p> <p>Article 70; daily working hours should have a period or more for worker to rest. This should not be more than 1 hour, taking into account that the worker should not work more than 5 hours without a break.</p> <p>Article 90 states mean of personal protection and prevention of workers from work hazards and occupational diseases.</p> <p>Chapter 9 of PLL No 7, 2000 defines the working injuries and states the treatment that should be provided to the injured worker as well as the compensations that should be given.</p> <p>The Minimum Wage Act of 2021 sets the minimum acceptable wages to be paid and sets the values for each interval.</p> <p>The Labor Law and the OHS Acts of MoL guarantee a safe working environment for project workers.</p>	<p>law. In many places, ESS2 refers to the adherence of national laws in terms of labor and working conditions.</p>	<p>the General and Industry specific EHS Guidelines and in accordance with the national laws and the regulations issued by MoL and the Cabinet of Ministers.</p>
<p>To promote the fair treatment, non-discrimination and equal opportunity for project workers.</p>	<p>The PLL No 7, 2000;</p> <ul style="list-style-type: none"> - work is a right for every citizen that can work and it is on the basis of equal opportunity & without any kind of discrimination. - discrimination between men and women is prohibited. <p>The CoC for Public Service states that there shall be no discrimination on the basis of sex, religion, ethnicity, believes or any other socio-economic aspects.</p>	<p>There is no major gap between the requirements of ESS2 and the national law</p>	<p>Apply Palestinian Labor law and adhere to the F4J III LMP and ESMF particularly on issues such as Code of Conduct and others that are not explicitly mentioned in the PLL.</p>
<p>To protect project workers, including vulnerable workers such as women, people with disabilities,</p>	<p>The PLL No 7, 2000;</p>	<p>No significant gaps between ESS2 requirement and the various national laws</p>	<p>Apply national law requirements (PLL)</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.</p>	<p>Article 2: working is a right for every citizen that can work and it is on the basis of equal opportunity & without any kind of discrimination.</p> <p>Article 13: The employer is obliged to employ a number of qualified disabled workers in work commensurate with their disability at least (5%) of the size of the workforce in the establishment.</p> <p>Article 90: discrimination between men and women is prohibited.</p> <p>Article 93: Children employment before 15 years is prohibited.</p> <p>Article 101: Employment of women is prohibited in the three following cases; dangerous work, additional working hours during pregnancy and the first six months of giving birth, night working hours except the occupations that the ministries council defines.</p> <p>The Employment Act No,2000, the Workman compensation;</p> <p>Article 119: If a worker is temporarily incapacitated and has lost his or her ability to perform his / her temporary work, he / she is entitled to receive 75% of his / her daily wage up to a maximum of 180 days.</p> <p>Article 120: The amount of monetary compensation in the case of permanent total disability or death with 3500 working days or 80% of his basic wage until he reaches the age of sixty, whichever is higher.</p> <p>In terms of the Act, Workman is any person who performs work for the employer for a wage and is in the course of his work under his administration and supervision.</p>		
<p>To prevent the use of all forms of forced labor and child labor.</p>	<p>The Employment Act No 7, 2000;</p> <p>Article 93: Children employment before 15 years is prohibited.</p> <p>Article 95: juvenile must not work at; industries hazardous or harmful to health, night work, official or religious holidays or public holidays, additional working hours, and remote, distant places.</p> <p>Article 13 of the Palestinian constitution; No one shall be subjected to any coercion or torture.</p> <p>The Palestinian Child Act No 7, 2004;</p>	<p>No significant gaps between ESS 2 requirement and the various national laws</p>	<p>Apply F4J III ESMF labor management measures, F4J III LMP, and ESS2 requirements for child and forced labor while ensuring meeting national laws requirements as well.</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
	Article 14: Children employment before 15 years is prohibited.		
To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.	<p>The PLL No 7, 2000: In accordance with the provisions of the law, workers and employers have the right to form trade union organizations on a professional basis in order to protect their interests and defend their rights.</p> <p>General Federation of Palestinian Workers' Union: It organizes the labors based on professional grounds, it improves the labor conditions, follows up the labor demand issues, and defends the workers in case of labor disputes.</p>	No significant gaps between ESS 2 requirement and the various national laws	Apply Palestinian Labor law
To provide project workers with accessible means to raise workplace concerns.	The resolution of the Palestinian Cabinet No. 8 of 2016 on the Regulation of Complaints has been adopted by the PA and defined the acting body in the government to deal with complaints. However, project-level worker GMs are not covered in the law. Additionally, Governmental GM does not grant anonymity and does not have specific referral channels for GBV (SEA / SH) grievances.	The lack of requirement for a Workers' GM in development projects is a significant gap between national laws and ESS2.	Apply Palestinian Labor law and develop project specific workers' GM.
ESS3: Resource efficiency and Pollution Prevention and Management			
To promote the sustainable use of resources, including energy, water and raw materials.	<p>Environment Act No 7, 1999 aims to protect the environment from all different forms of pollution, inserts environmental protection grounds in the economical & social developmental plans, conserves the biodiversity, protects the environmentally sensitive areas and also improves the environmentally damaged areas.</p> <p>Chapter 2 of the Environment Act No 7, 1999 presents the protection of all types of the environment including air, water, ground... and sets out plans, procedures, limits, conditions, and standards to prevent any deterioration or harm that may be caused to the environment.</p> <p>The PEAP 2000 requires that development projects are assessed based on their use of resources, ensuring that they do not affect their availability and their sustainable use.</p>	While the national laws and legislations provide the overall requirement for adherence, they do not specifically contain implementation arrangements of these measures, their monitoring or specific penalties.	All of Al Jebrini's expansion subprojects will be assessed in accordance to ESS3 where resources efficiency and pollution prevention measures will be addressed under the ES Instruments and tools.
To avoid or minimize adverse impacts on human health and the environment by Avoiding or	Environment Act No 7, 1999 aims to protect the environment from all different forms of pollution, inserts environmental protection grounds in the economical & social developmental plans, conserves the biodiversity, protects the environmentally sensitive areas and improves the environmentally damaged areas.	While some systems such as the hazardous waste management are nationally formulated, their enforcement and implementation are facing issues on the ground. Other	Apply ESS3, EHS guidelines in line with the F4J III ESMF for the preparation of site-specific mitigation measures and monitoring

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>minimizing pollution from project activities.</p>	<p>Chapter 3 of the Environment Act No 7, 1999 relates to the EIA, section 1 identifies the subjected projects under the EIA studies, section 2 sets out the nature of licenses and permissions on the projects that may affect the environment, section 3 lays out the inspections and the administrative procedures regarding the facilities and the projects.</p> <p>Chapter 4 of the Environment Act No 7, 1999 puts penalties for anyone or any project that violates the articles regarding the protection of the environment.</p> <p>Article 76 of the Environment Act No 7, 1999 "Pay compensation" states that any person who has caused any environmental damage as a result of an act or negligence contrary to the provisions of this law or any international agreement to which Palestine is a party in is obliged to pay the appropriate damages in addition to the criminal responsibility stipulated in this law.</p> <p>Other Industry Specific Management Systems such as Hazardous waste and Medical Waste Management System. These provide industry specific measures and requirements for ensuring avoidance, and where not possible minimization and mitigation of pollution.</p>	<p>aspects such as E-waste are not properly addressed in the laws and legislations.</p>	<p>frequencies required in addition to reporting and inspections.</p>
<p>To avoid or minimize project-related emissions of short and long-lived climate pollutants.</p>	<p>Section 2 of Chapter 2 of the Environment Act No 7, 1999, it describes all the regulations that are related to the atmosphere, it determines the air pollutant ratios, it restricts using any equipment that may produce a non-standard exhaust.</p> <p>Article 24 of the Environment Act No 7, 1999 talks about reducing the depletion of the ozone layer in accordance to the international treaties which Palestine is signed on.</p>	<p>No significant gaps between ESS3 requirement and the various national laws. However, ESS3 provides tangible measures on project related emissions and covers climate pollutants, it refers to EHSGs with precise requirements, thresholds and measures relevant to subprojects. National laws only provide generic frameworks of implementation.</p>	<p>Implement and include the guidelines in the EHSGs (both general and industry-specific).</p>
<p>To avoid or minimize generation Of hazardous and non-hazardous waste.</p>	<p>Article 7 of the Environment Act No 7, 1999 sets out a plan of solid wastes management plan.</p> <p>Article 11 of the Environment Act No 7, 1999 defines a list of the most dangerous wastes.</p> <p>Article 12 of the Environment Act No 7, 1999 restricts the use of dangerous materials by setting out many instructions and regulations.</p> <p>Article 13 of the Environment Act No 7, 1999 bans any dangerous wastes and restricts their access through the Palestinian lands.</p>	<p>No significant gaps between ESS 3 requirement and the various national laws in terms of the general objectives and requirements. However, the implementation of measures under national laws is facing issues in enforcement, penalties and monitoring are not typically adhered to.</p>	<p>ESS3 and F4J III ESMF as well as EHS Guidelines provide guidelines for the preparation of site-specific waste management plans and sets the mitigation measures and monitoring frequencies required in addition to reporting and inspections, hence they will be adopted in line with the wider frameworks of national policies.</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
	<p>Hazardous Waste Bylaw</p> <p>Medical Waste Management System</p> <p>No E-waste Specific Legislations have been developed</p>		
<p>To minimize and manage the risks and impacts associated with pesticide use.</p>	<p>Article 14 of the Environment Act No 7, 1999 puts conditions for the use of agricultural chemical materials.</p> <p>Article 15 of the Environment Act No 7, 1999 puts special quantifications of the permitted agricultural chemical material.</p> <p>Palestine has an international convention regarding the pesticides; Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.</p> <p>Palestinian Agricultural Law sets the responsibility on MoA to provide the permitted pesticides to be used and sets the regulations required for their manufacturing, import, management, storage, and other aspects.</p>	<p>No significant gaps between ESS 3 requirement and the various national laws in terms of legal and generic requirements.</p> <p>ESS3 requires the development and utilization of IPM approaches, and the use of PMP.</p>	<p>Not applicable to Al Jebrini's Expansion subprojects.</p>
ESS 4: Community Health and Safety			
<p>To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project lifecycle from both routine and non-routine circumstances</p>	<p>National laws do not have provisions to assess and manage specific risks and impacts to the community arising from Project activities including behavior of Project workers, response to emergency situations, and Gender Based Violence (GBV) and sexual exploitation and abuse (SEA) or Sexual Harassment (SH).</p>	<p>There is gap between ESS 4 requirement and the various national laws</p>	<p>The project will implement ESS4 requirements. Site specific E&S tools will assess and provide mitigation measures for impacts relevant to ESS4.</p>
<p>To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.</p>	<p>Palestine has international conventions regarding the climate change and the environment: United Nations Framework Convention on Climate Change (UNFCCC) and Stockholm Convention on Persistent Organic Pollutants (POPs).</p> <p>Palestine has developed its National Adaptation Plan (NAP) in 2016 in response to climate change impacts.</p>	<p>There is no enforcement of international agreements. No specific national laws on climate change and the integration of mitigation matters in investment and infrastructure projects.</p>	<p>Implement ESS4 and the measures stipulated in the F4J III ESMF and the EHS Guidelines.</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.</p>	<p>The Traffic Act No 5, 2000 provides for the compliance of all the conditions of the vehicles that should be on the traffic roads as well as the traffic safety procedures.</p> <p>Article 7 of the Environment Act No 7, 1999, sets out a plan of solid wastes management plan.</p> <p>Article 11 of the Environment Act No 7, 1999 defines a list of hazardous waste</p> <p>Article 12 of the Environment Act No 7, 1999 restricts the use of dangerous materials by setting out many instructions and regulations.</p> <p>Article 13 of the Environment Act No 7, 1999 bans any dangerous wastes and restricts their access through the Palestinian lands.</p> <p>Section 5 of Chapter 1 of the Public Health Act No 20, 2004 states Occupational Health. Article 34 of this section identifies the health conditions to be met by workers in the occupations, trades, and industries that may affect their health; it also identifies the initial & preventive tests that are vital for workers in their occupations, trades, and industries.</p> <p>The Hazardous Waste Management System includes the required measures, licensing procedures, disposal, and penalties for managing hazardous waste.</p>	<p>There is a gap resulting from the fact that the national laws only provide general guidelines.</p>	<p>The project will implement the f4J III ESMF's mitigation measures, EHS Guidelines, and the ESSs requirements in the preparation and implementation of E&S tools.</p>
<p>To have in place effective Measures to address emergency events.</p>	<p>No specific laws or regulations that take action in emergency events. However, Chapter 9 of PLL No 7, 2000 defines the working injuries and states the treatment that should be provided to the injured worker as well as to the compensations that should be given.</p> <p>Civil Defense Regulations are followed during the licensing procedures especially relevant to L&FS. Their regulations are considered among the most stringent and the license is renewed after an annual inspection.</p>	<p>There is a gap between ESS 4 requirement and the various national laws.</p>	<p>Apply civil defense requirements in relation to L&FS and licensing as detailed in the ESA.</p> <p>Adhere to ESS4 requirements, and the World Bank EHS guidelines as guided by the F4J III ESMF.</p>
<p>To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected Communities.</p>	<p>National plans do not specifically cover these requirements. However, under the PEAP 2000 impacts on communities' well-being shall be thoroughly assessed and avoided.</p>	<p>There is a gap where there is no coverage for this issue in any national document</p>	<p>The project will implement relevant clauses, particularly under ESS4.</p>
<p>ESS10: Stakeholder Engagement and Information Disclosure</p>			

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>To establish a systematic approach to stakeholder engagement that will help borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.</p>	<p>Chapter 3 of the Environment Act No 7, 1999 relates to the EIA which involves stakeholder engagement plan as well as public hearing and consultation. However, no precise systematic approach is clear and is only required during EIA process.</p>	<p>ESS 10 is more stringent in this regard as it provides a categorization of stakeholders, continuous consultations requirements, different techniques and specific measures to involve vulnerable and marginalized groups. Additionally, SEP result from the application of ESS10 that are used throughout the project life cycle unlike the PEL and PEAP which require consultations only at the planning phase of the project.</p>	<p>Implement the F4J III SEP and include continuous integration of stakeholder engagement in the project lifecycle.</p>
<p>To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.</p>	<p>Chapter 3 of the Environment Act No 7, 1999 relates to the EIA which involves stakeholder engagement plan as well as public hearing and consultation. The stakeholder engagement plan involves the assessment of the interest and powers of each stakeholder.</p>	<p>No significant gaps between ESS 10 requirement and the various national laws.</p>	<p>NA</p>
<p>To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.</p>	<p>Chapter 3 of the PEL as well as PEAP of 2000 require the engagement of communities that are most likely to be affected by the establishment of projects. However, it does not provide requirements for continuous engagement.</p>	<p>Significant gaps between ESS 10 requirement and the various national laws especially in terms of continuity.</p>	<p>Implement the F4J III SEP and include continuous integration of stakeholder engagement in the project lifecycle.</p>
<p>To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.</p>	<p>The Environmental Impact Assessment Policy, 1999, article 8 invites to make coordination between all the stakeholders and the participative entities and presents many points to engage all the stakeholders in many stages of the implemented project. However, there is no specific requirement to disclose project information and documents to the public.</p>	<p>ESS10 requires that all instruments and disclosable project documents are available to the public in an accessible and appropriate manner and format, national laws do not cover this aspect and disclosure is not commonly practiced.</p>	<p>Disclosure of information will be implemented as guided by ESS10.</p>

ESF	National Laws and Requirements	Gaps	Gap Filling Measures
<p>To provide project- affected parties with accessible and inclusive means to raise issues and grievances and allow borrowers to respond to and manage such grievances.</p>	<p>The resolution of the Palestinian Cabinet No. 8 of 2016 on the Regulation of Complaints has been adopted by the PA and defined the acting body in the government to deal with complaints.</p>	<p>ESS10 ensures reception and timely response to any complaints made about the Project and is the basis for developing appropriate mitigation strategies, it is inclusive for all projects financed by the World Bank.</p> <p>However, the national system does not provide means for the uptake of anonymous complaints, and does not provide clear pathways for GBV (SEA / SH) complaints submission despite the availability of the National Referral system No. 28 of 2022</p>	<p>Project-level GM will be utilized by Al-Jebrini. The GM shall be in line with ESS10 and the F4J III SEP with effective uptake mechanisms.</p>
<p>To establish a systematic approach to stakeholder engagement that will help borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.</p>	<p>The Environmental Impact Assessment Policy, 1999 defines participation of stakeholders in many stages like in the TOR stage, the policy also includes that wider participation in case of projects that may affect the environment, and the methods and the results of the meetings should be documented. However, it does not include requirements for engagement, especially relevant to vulnerable and marginalized groups and does not require the continuous engagement of PAPs or OIPs.</p>	<p>ESS10 is more stringent as it requires projects to have an SEP that is applicable throughout the lifecycle of the project.</p>	<p>Implement the project's SEP.</p>

4. ESIA AND ESMPS METHODOLOGY

- Overall approach and scope

The ESIA and ESMPS for Al Jebrini Co.'s expansion subprojects were prepared in line with the TOR for the assignment, the F4J III ESMF, the World Bank ESF and ESSs, the EHS Guidelines (both General and Industry Specific), and applicable Palestinian legislation and permitting requirements.

The ESIA covers the four expansion subprojects at Al Thahreyeh site, namely: the expansion of the cow farms, the new plastic containers factory, the artisanal "Baladi" dairy factory, and the rooftop solar PV system. Particular emphasis is placed on the two subprojects directly supported by F4J III financing, namely the plastic factory and the rooftop PV system. Existing facilities and ESA findings are used as an essential reference and as part of the context for assessing cumulative impacts and defining realistic mitigation and monitoring measures.

The methodology combines three main pillars:

- a. systematic review of existing documentation and regulatory requirements
- b. primary data collection through field visits, observations and targeted inquiries
- c. structured analysis of risks and impacts, including alternatives, using standard ESIA methods and the mitigation hierarchy, followed by preparation of four subproject-specific Environmental and Social Management Plans (ESMPs).

I. Document review, exploratory stage and data collection

Consistent with the TOR and the inception report, the work started with an exploratory and scoping stage that included: review of previously prepared environmental and social documents for Al Jebrini (screening report, existing EIAs and EMMPs submitted to EQA, relevant licenses and permits, the ESA and its Corrective Action Plan), review of technical designs and layouts, and review of available documents for each of the subprojects.

This stage was followed by a kick-off meeting with Al Jebrini to agree on information needs and work planning that took place on August 2nd 2025. Additional meetings and calls were used to clarify technical aspects of the expansion, confirm construction progress, and obtain updated data.

Field visits were also conducted to Al Thahreyeh site and surrounding area to:

- verify the location and current status of the four expansion subprojects
- observe existing environmental and social conditions, including nearby receptors and land uses
- understand current farm operations, utilities and access routes
- cross-check information obtained from documents and drawings.

Baseline information was compiled from a combination of sources: previous EIAs and studies, official statistics and planning documents, secondary data, and field observations. The baseline data has been studied in detail during the E&S Screening phase and the ESA, hence the ESIA will refer to both these documents for E&S Baseline details.

II. Legal and institutional review and gap analysis

The ESIA includes an analysis of the applicable legal and institutional framework, drawing on the ESA legal review. This covers Palestinian environmental, labor, public health, municipal, civil defense, and sectoral regulations, relevant international conventions, and the World Bank ESF, ESSs and Environmental, Health and Safety Guidelines (General and sector-specific).

A structured gap analysis was carried out to identify where national requirements do not fully meet ESF provisions, particularly in relation to social aspects, stakeholder engagement, grievance mechanisms, SEA/SH and life and fire safety. The ESIA and ESMPs then adopt the more stringent applicable standard, while recognizing practical constraints related to national procedures.

III. Impact identification, alternatives and risk significance

Impact identification and scoping followed the ESIA methodology outlined in the TOR and the inception report. Potential interactions between planned activities and environmental or social receptors were first identified for each subproject and for the combined expansion package, across all relevant phases of the project cycle.

In parallel, reasonable alternatives were considered, including technology and process options for the plastic factory and artisanal dairy factory, sizing and configuration options for the rooftop PV system and its integration with existing energy infrastructure.

For the risk and impact assessment, a structured rating system consistent with the approach used in comparable sector ESMPs was applied. Each parameter was scored on a qualitative scale, and the combined score was used to assign an overall risk or impact significance rating (low, moderate, substantial or high). The rating reflects both the inherent risk and existing controls and good practices already in place at Al Jebrini, as documented in the ESA. The same framework is applied to environmental and social impacts, and covers positive and negative, direct, indirect and cumulative effects.

IV. Mitigation hierarchy, cumulative impacts and use of ESA findings

Mitigation and enhancement measures were developed in line with the mitigation hierarchy described in the TOR and the ESF: avoid, minimize, mitigate, and, where significant residual impacts remain and further reduction is not feasible, compensate or offset.

For each significant risk or impact, the assessment considered:

- possibilities to avoid the impact through changes in site layout, technology, scheduling or operating practices
- measures to minimize or reduce the impact at source, including resource efficiency and cleaner production options
- measures to restore or rehabilitate affected environments and communities
- compensation, offsets or other residual risk management measures where needed.

Differentiated measures were identified for workers and community groups that may be more exposed or vulnerable, including women, youth, low-income households and informal land users in the wider Al Thahreyeh area.

Cumulative impacts were assessed by considering how the expansion subprojects, in combination with the existing Al Jebrini facilities and other reasonably foreseeable developments in the area, could affect key receptors over time. The analysis focused on groundwater and surface water quality, air emissions and odors, traffic and road safety on access routes, noise, and overall pressures on local infrastructure and services.

Findings from the ESA, including documented non-compliances and the Corrective Action Plan (CAP), were systematically used as inputs to the ESIA. Where existing weaknesses in wastewater management, civil defense approvals, grievance mechanisms, SEA/SH measures or OHS performance could influence the risk profile of the expansion subprojects, these were explicitly reflected in the impact assessment and in the formulation of mitigation and monitoring measures.

V. Preparation of subproject-specific ESMPs

Building on the impact assessment and mitigation hierarchy analysis, four subproject-specific ESMPs were prepared, one for each expansion subproject, as required by the TOR. The ESMPs follow a common structure consistent with the F4J III ESMF.

The ESMPs also integrate relevant actions from the ESA CAP so that remedial measures for existing operations and preventive measures for the expansion subprojects reinforce each other. This is particularly important for cross-cutting areas such as wastewater and manure management, life and fire safety, OHS, worker and community grievance mechanisms, and SEA/SH prevention.

VI. Stakeholder engagement and grievance mechanisms

Stakeholder engagement was treated as a core element of the ESIA methodology, in line with ESS10 and the F4J III SEP. The process included:

- stakeholder identification and mapping, covering project-affected parties, other interested parties and representatives of vulnerable and marginalized groups
- consultations and interviews with Al Jebrini management and workers, nearby residents, neighboring land users and industries, local authorities and relevant national institutions
- disclosure of key project and ESIA information in both English and Arabic languages.

Feedback from stakeholders was documented and used to refine the impact assessment, the design of mitigation measures, and proposals for worker and community grievance mechanisms. The ESIA also draws on the ESA review of existing grievance channels and identifies measures to strengthen and align them with ESS2 and ESS10 requirements, including SEA/SH-sensitive referral pathways.

5. ENVIRONMENTAL AND SOCIAL BASELINE

This chapter summarizes the key environmental and social conditions in the area of influence of Al Jebrini Co.'s expansion subprojects at Al Thahreyeh. It draws primarily on the ESA and the E&S Screening Report prepared for the F4J III project, complemented by additional desk-based research to cover aspects such as climate, hydro-geology and regional socio-economic trends that are required under the TOR but not fully detailed in previous documents.

Where more detailed information is needed (e.g. maps, photographs and extended data tables), reference should be made to Chapter 5 of the ESA and to the Screening Report, which remain the primary baseline references for this ESIA; The documents can be accessed through: [Al Jebrini Expansion Subproject Environmental and Social Audit \(ESA\)](#) & [Environmental and Social \(E&S\) screening](#) Reports.

Additionally, all maps and cartography developed in this report are from the database of the Ministry of Local Government (MoLG) and their Geographic Information System (GIS), GEOMOLG.

5.1. LOCATION AND SETTING

Al Jebrini's facilities and the four expansion subprojects are located in a rural/ peri-urban area between the municipal boundaries of Dura and Al Thahreyeh in Hebron governorate, southern West Bank. The surrounding landscape is characterized by rain-fed agricultural land (field crops, grazing land and olive groves) interspersed with scattered residential buildings and small workshops/light industrial uses along the access road.

The broader Hebron governorate is the largest in Palestine in both land area (around 1,060 km²) and population (over 700,000 residents in 2017), with Hebron city as the administrative center¹⁵. Dura and Al Thahreyeh are among the main secondary towns. According to ARIJ, Dura municipality controls about 17,600 dunums, of which roughly half is agricultural land and the remainder is mainly built-up and public/uncultivated land. Al Thahreyeh covers a larger municipal area with extensive grazing and agricultural lands and around 16,000 dunums of built-up area^{16,17}.

The ESA confirms that the immediate project area has no schools, cultural heritage sites or officially designated protected areas in its vicinity. It is not served by a central sewerage network and relies on cesspits and septic tanks for wastewater disposal, while water is supplied by the Joint Council for Services (Dura rural area) and electricity by SELCO. Road access is via a paved local road connecting to the main Dura–Al Thahreyeh Road.

5.2. PHYSICAL ENVIRONMENT

5.2.1. CLIMATE AND METEOROLOGY

The project area lies in the Hebron Hills section, with elevations around 600–800 m above sea level. The climate is Mediterranean semi-arid, with cool, wet winters and hot, dry summers. ARIJ’s profile for Dura (elevation ~839 m) reports a long-term average annual rainfall of about 430–440 mm, average annual temperature of around 16°C, and relative humidity of around 61%.

Al Thahreyeh profile (elevation ~632 m) reports average annual rainfall of roughly 330–340 mm, average annual temperature around 19°C, and relative humidity of about 59%. Al Thahreyeh site, located between these two towns, therefore experiences annual rainfall typically in the 350–450 mm range, with marked inter-annual variability and recurrent dry years. The warmest months are July–August, when daytime temperatures frequently exceed 30°C, while winter minimum temperatures can approach 5°C or lower at night¹⁸.

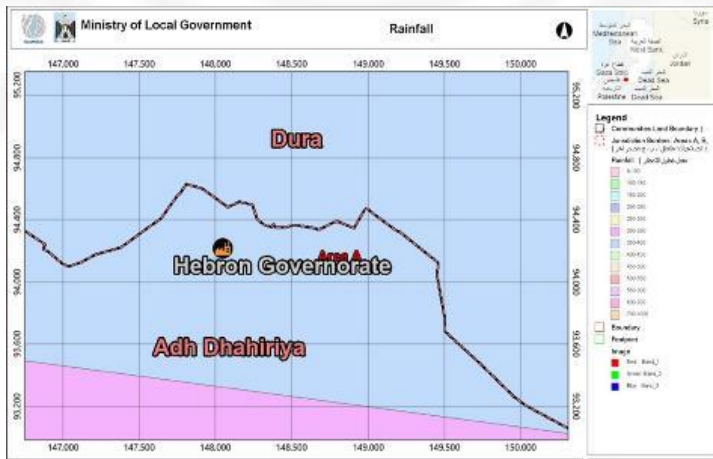


Figure 9: Rainfall Map

¹⁵ Hebron Governorate Statistical Yearbook No. 2. PCBS, November 2010.

¹⁶ ARIJ, Dura City Profile: <http://proxy.arij.org/vprofile/Villages/Dura%20Village%20Profile.pdf>

¹⁷ ARIJ, Al Thahreyeh Town Profile: http://vprofile.arij.org/hebron/pdfs/Adh%20Dhahiriya%20Town_en.pdf

¹⁸ <https://mapcarta.com/12913700>

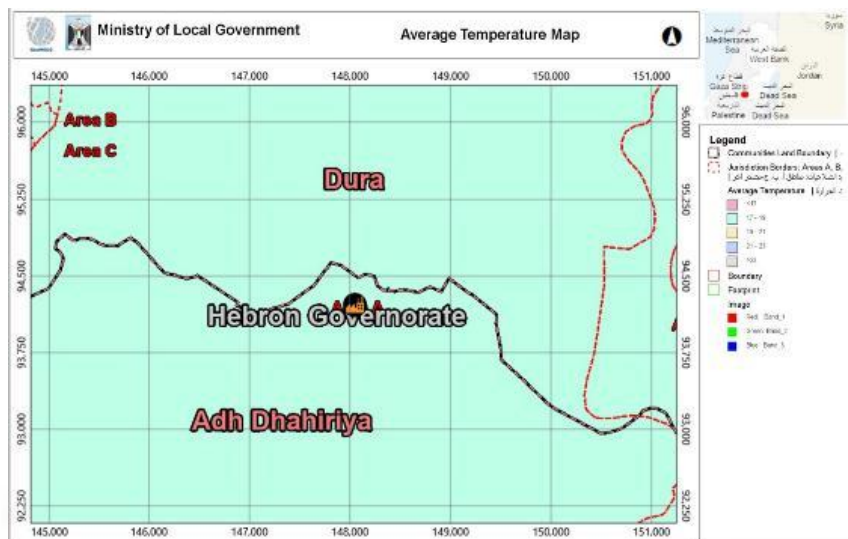


Figure 10: Average Temperature Map

Regional climate change assessments for Palestine show an observable upward trend in temperatures and a likely decline in average rainfall, with more frequent droughts and intense rainfall events¹⁹. This increases pressure on already scarce water resources and heightens the importance of water-efficient farming, wastewater management and storm-water harvesting measures envisaged in the expansion project.

5.2.2. TOPOGRAPHY, GEOLOGY AND SOILS

The site is situated on rolling hills of the Hebron Hills, a limestone ridge trending north–south across the southern West Bank. Elevations in Al Tahreyeh area are moderately sloping, with local relief shaped by shallow wadis draining westwards. Geologically, the area forms part of the Hebron Group, composed mainly of Cretaceous-age limestones and dolomites with interbedded marl and chalk, which constitute the principal aquifer system of the central and southern West Bank²⁰.

Soils are typically shallow to moderately deep calcareous soils (Terra Rossa and associated rendzina-type soils), supporting rain-fed cereals, olives and grazing. Erosion risk is moderate on steeper, unvegetated slopes and in compacted farmyards and access roads.

¹⁹ West Bank and Gaza Country Climate and Development Report, World Bank, 2023:

<https://documents1.worldbank.org/curated/en/099112823094030933/pdf/P179452029863f0e80a902031b18e72860c.pdf?>

²⁰ Sustainable Management of the West Bank and Gaza Aquifers Project: https://nora.nerc.ac.uk/id/eprint/504766/1/West_Bank_hg.pdf

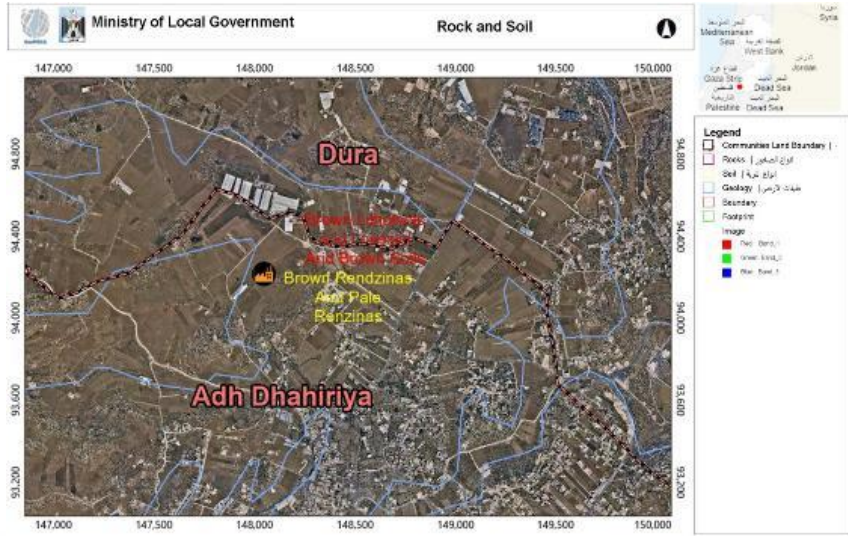


Figure 11: Geology and Soil Map

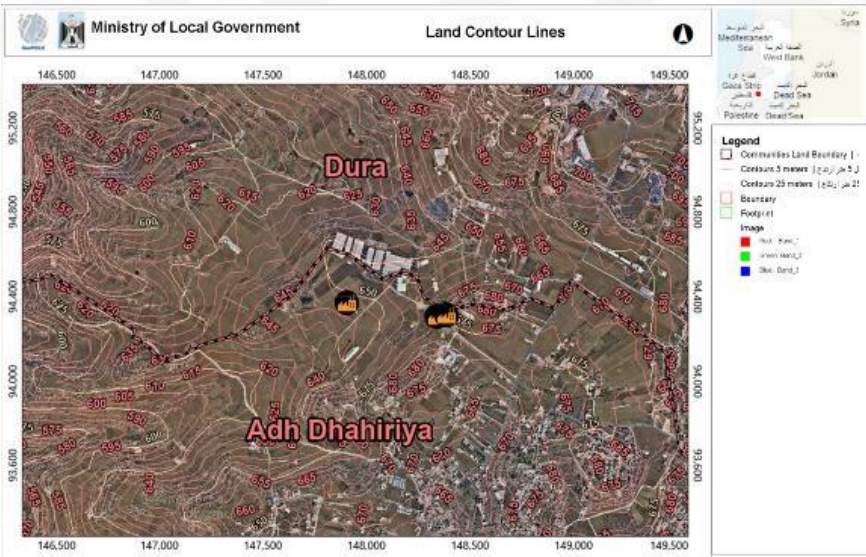


Figure 12: Site Contour and Elevation Map

5.2.3. SURFACE WATER AND DRAINAGE

The project site lies within the upper catchment of the Hebron–Besor–Wadi Gaza basin, which originates in the Hebron Hills and drains westwards across the Negev to the Mediterranean Sea²¹. Local drainage is via seasonal wadis that flow only during significant rainfall events.

Due to the absence of a public sewerage network, wastewater from surrounding communities and facilities is commonly discharged to cesspits and, in some locations, to open wadis, contributing to pollution of downstream watercourses in the Hebron basin. Regional assessments highlight longstanding problems of untreated domestic, industrial and agricultural wastewater entering the Hebron stream and its tributaries, with associated public health and environmental risks.

Within Al Jebrini’s facilities, storm-water is partially harvested from roofs and yards for non-potable uses, and process and sanitary wastewater currently rely on cesspits and tinkering, as described in the ESA.

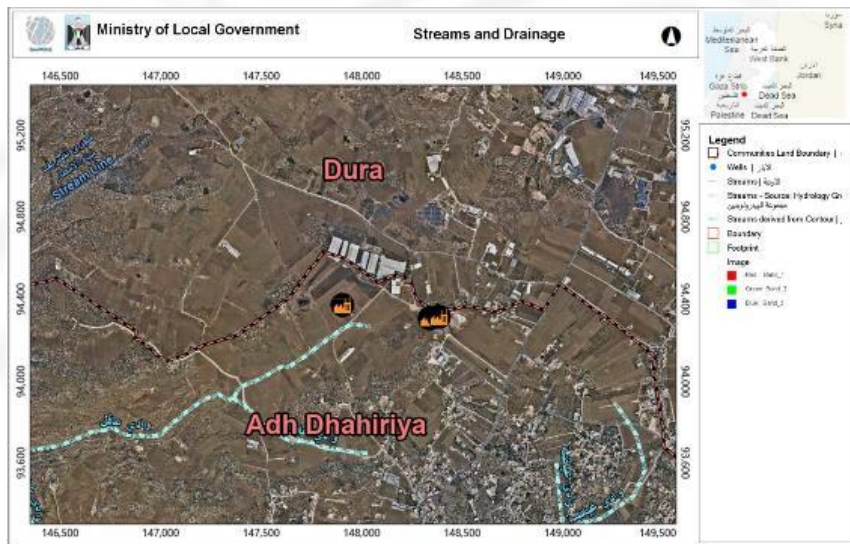


Figure 13: Map of Streams and Natural Drainage

5.2.4. GROUNDWATER AND HYDROGEOLOGY

Al Thahreyeh area overlies the Mountain Aquifer system, specifically the western basin, which provides a major source of high-quality groundwater for Palestinian communities and is also extracted by Israel²². Recharge occurs mainly through infiltration of rainfall over the limestone outcrops in the Hebron Hills; however, abstractions and pollution pressures along the basin have led to concerns about long-term sustainability and quality^{23,24}.

²¹ Report on the Status of the Hebron, Besor, Wadi Gaza Basin, Eco peace Middle East: https://ecopeaceme.org/wp-content/uploads/2024/04/nahal-hebron_web_ENG.pdf

²² Water Inventory: <https://waterinventory.org/groundwater/western-aquifer-basin>

²³ United Nations Environment Programme (UNEP): <https://unispal.un.org/pdfs/UNEPGC22INF31.pdf>

²⁴ UN: https://www.un.org/unispal/wp-content/uploads/2021/09/A.HRC.48.43_151021.pdf

Hydrogeological studies of southern Hebron indicate that the Hebron Group limestones and dolomites form highly fractured, karstified aquifers with significant storage and transmissivity, underlain by less permeable formations²⁵. Local wells and springs around Dura and Al Thahreyeh are used for domestic supply and irrigation, supplemented by bulk water purchased from the national network. Despite this potential, Palestinian access to the Western Aquifer Basin remains constrained, and water scarcity is acute.

World Bank and PCBS analyses show that Hebron governorate suffers from some of the lowest per-capita water supply levels in the West Bank and faces chronic deficits relative to demand²⁶. Protection of groundwater quality from manure, wastewater and solid-waste leachate is therefore a critical sensitivity for the ESIA, especially given the current use of cesspits and the agricultural nature of surrounding lands.

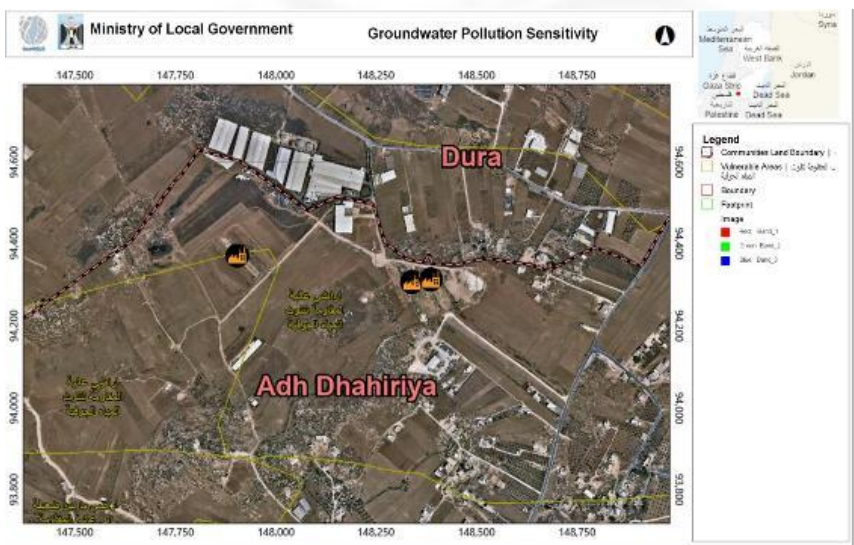


Figure 14: Sensitivity of Site's Groundwater to Pollution

5.2.5. AIR QUALITY AND NOISE CONTEXT

The ESA found no significant ambient air quality or noise issues in the project area under existing operations. Fugitive dust emissions are limited due to paved access roads and the rural setting, and there are no major industrial stacks or high-traffic corridors adjacent to the site.

Potential contributors to localized air emissions include agricultural burning, vehicle exhausts on nearby roads, animal housing (odors and bio-aerosols), and, in future, the operation of diesel backup generators at Al Jebrini. Baseline noise levels are typical of rural / peri-urban environments, influenced mainly by livestock, light vehicle traffic and occasional construction activities.

5.2.6. INFRASTRUCTURE AND SERVICES

²⁵ Sustainable Management of the West Bank and Gaza Aquifers Project : https://nora.nerc.ac.uk/id/eprint/504766/1/West_Bank_hg.pdf

²⁶ Securing Water for Development in the West Bank and Gaza, World Bank: <https://documents1.worldbank.org/curated/en/736571530044615402/Securing-water-for-development-in-West-Bank-and-Gaza-sector-note.pdf>

- **Water supply:** Households and enterprises in Dura and Al Thahreyeh receive piped water from the Palestinian Water Authority / regional utilities, supplemented by private wells and cisterns. However, supply is intermittent and per-capita consumption in Hebron governorate is among the lowest in the West Bank, reflecting limited access to the Mountain Aquifer and growing demand²⁷. Al Jebrini receives potable water via the Joint Council for Services (Dura rural area) and operates on-site filtration and stormwater harvesting systems. The water filtration unit treats water received from the municipality (mainly dichlorination) to reach specific quality for the milk processes and livestock watering, and another line that treats water coming from the stormwater harvesting system which is installed above the farm which is used for general cleaning and toilets flushing.
- **Wastewater and sanitation:** The area lacks a centralized sewerage network, both at community level and for the Al Jebrini site, with sanitation based on on-site systems (cesspits, septic tanks). Regional studies of the Hebron–Wadi Gaza basin underline how such arrangements contribute to serious water quality problems when effluents are discharged to open wadis²⁸.
- **Solid waste management:** Municipal solid waste collection services operate in Dura and Al Thahreyeh, transporting waste to regional disposal sites. At facility level, the ESA found Al Jebrini’s solid waste management generally compliant, with segregation and contracted off-site disposal for hazardous materials, though improvements are planned in line with the ESMPs.
- **Energy, roads and communications:** The area is connected to the SELCO electricity grid and national telecommunications networks. Road access to Al Jebrini is via a paved local road branching from the Dura–Al Thahreyeh Road, allowing direct access for milk tankers, feed deliveries and staff transport without passing through dense residential clusters. The planned rooftop PV system, along with the existing biogas digester that are discussed in the ESA report, will partially offset grid electricity consumption and modestly improve local energy resilience.

5.3. BIOLOGICAL ENVIRONMENT

Hebron governorate contains areas of Mediterranean shrubland and pasture, but Al Thahreyeh expansion site lies in a transformed agricultural and semi-industrial landscape without natural woodland or formal protected areas.

Vegetation within and around the site consists mainly of cultivated crops (rain-fed cereals, fodder crops), scattered olive and fruit trees, planted shelterbelts, and ruderal species along roadsides and fencelines. Livestock grazing (sheep, goats and cattle) is common on remaining open land. No critical habitats, ecologically sensitive areas or known habitats of endangered species were identified during the ESA or screening visits, and no such areas are mapped near the site in national or ARIJ datasets.

Typical fauna in the wider Hebron Hills include small mammals (e.g. hares, hedgehogs, rodents), reptiles, and a variety of resident and migratory bird's characteristic of the Mediterranean and Irano-Turanian eco-zones. Given the already converted nature of land within the project footprint, the main biodiversity concerns relate to indirect impacts, such as disturbance from noise and lighting, habitat degradation from waste disposal, and pollution of wadis and groundwater that support downstream ecosystems.

²⁷ Securing Water for Development in the West Bank and Gaza, World Bank: <https://documents1.worldbank.org/curated/en/736571530044615402/Securing-water-for-development-in-West-Bank-and-Gaza-sector-note.pdf>

²⁸ Report on the Status of the Hebron, Besor, Wadi Gaza Basin, Ecopeace Middle East: https://ecopeaceme.org/wp-content/uploads/2024/04/nahal-hebron_web_ENG.pdf

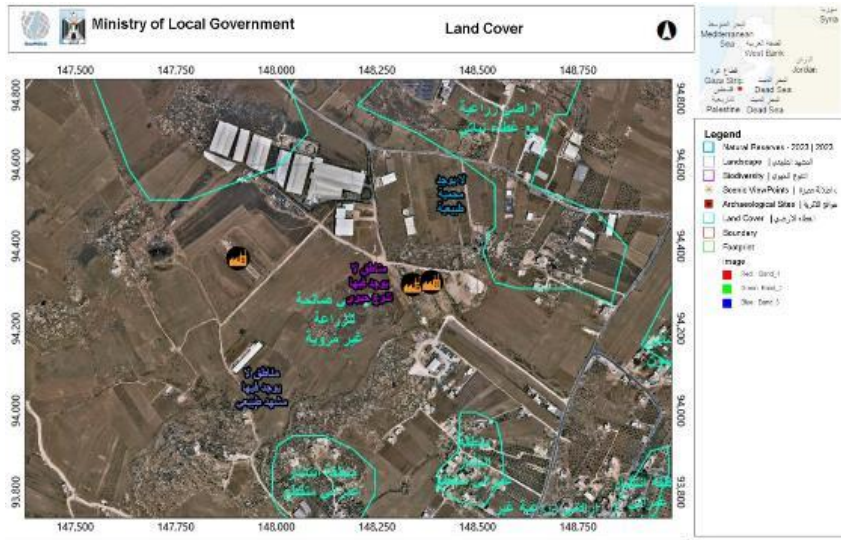


Figure 15: Land Cover and Biodiversity Characteristics

5.4. SOCIO-ECONOMIC ENVIRONMENT

5.4.1. ADMINISTRATIVE CONTEXT AND POPULATION

The project lies within Hebron governorate, which had a population of around 711,000 Palestinians in the 2017 census and remains the most populous governorate in the West Bank. Dura and Al Thahreyeh municipalities serve as local administrative centers for surrounding rural communities, including Al Thahreyeh area where Al Jebrini is located.

The Palestinian Central Bureau of Statistics (PCBS) estimated the population of Dura at around 48,938 by 2026 whereas Al Thahreyeh at around 44,693²⁹. Household size is relatively large by international standards (often 5–6 persons per household), with a young age structure and a high share of children and youth.

5.4.2. ECONOMIC ACTIVITIES AND EMPLOYMENT

The economy of Dura and Al Thahreyeh combines agriculture, small-scale industry, commerce, public sector employment and wage labor in other West Bank cities and, where movement is permitted, in Israel/settlements. ARIJ data indicate that agriculture accounts for around 9% of the labor force in Dura, with additional employment in trade, services, education and public administration³⁰.

At governorate level, Hebron hosts a significant share of Palestine’s stone and marble industry, light manufacturing and agrifood processing, including dairy³¹. Al Jebrini is one of the leading dairy companies in this landscape and, as highlighted in the ESA, plays an important role as a local employer, hiring workers from Hebron

²⁹ PCBS, Estimated Population for Hebron Governorate 2017 -2026: https://www.pcbs.gov.ps/statisticsIndicatorsTables.aspx?lang=ar&table_id=705

³⁰ ARIJ, Dura City Profile: <http://proxy.arij.org/vprofile/Villages/Dura%20Village%20Profile.pdf>

³⁰ ARIJ, Al Thahreyeh Town Profile: http://vprofile.arij.org/hebron/pdfs/Adh%20Dhahiriva%20Town_en.pdf

³¹ Evaluation of the Stone and Marble Industry in Palestine: <https://link.springer.com/article/10.1007/s11356-021-12526-4>

city, Dura, Al Thahreyeh and neighboring communities in a context of high unemployment and economic stress since 2023.

Hebron governorate records some of the highest unemployment rates in the West Bank, with PCBS indicating an unemployment rate of about 16–19% in recent years, and female unemployment significantly higher than male³². Recent shocks related to conflict and movement restrictions have further aggravated labor market conditions and poverty³³.

6. ALTERNATIVES ANALYSIS

6.1. PURPOSE AND APPROACH

In line with the TOR and ESS1, this ESIA considered reasonable alternatives to the proposed expansion of Al Jebrini Co.'s operations at Al Thahreyeh, including the “no-project” scenario. The analysis focuses on the four expansion subprojects; (i) cow farm expansion, (ii) artisanal “Baladi” dairy factory, (iii) plastic containers factory, and (iv) rooftop solar PV system, with particular emphasis on the two F4J III-financed subprojects (plastic factory and rooftop PV).

Alternatives were assessed with regard to:

- overall project need and the “no-action” / “without project” scenario;
- site location and layout at Al Thahreyeh complex;
- project scale and timing;
- technology and process options for each subproject;
- facilities design and construction methods;
- operation and maintenance arrangements, including energy and utilities supply; and
- ways of dealing with key environmental and social risks and impacts, including institutional capacity to implement mitigation measures.

The alternatives are evaluated qualitatively, using criteria such as technical feasibility, consistency with Palestinian legislation and local master plans, compliance with the ESF and relevant EHS Guidelines, resource efficiency, pollution prevention, occupational and community health and safety, and social and economic benefits (employment, supply chain linkages, contribution to local dairy value chains).

6.2. “NO-PROJECT” / “WITHOUT EXPANSION” SCENARIO

Under the no-project scenario, the four expansion subprojects would not be implemented. Al Jebrini Co. would continue operating its existing cow farms, main dairy plant in Hebron, and biogas facility, relying on external suppliers for plastic packaging and on grid electricity and fossil fuels for most of its energy needs.

From an environmental and social perspective, this scenario would:

- avoid the incremental impacts associated with construction and operation of the new facilities (e.g. additional traffic, resource use, waste generation, occupational risks at the new factory sites);
- however, maintain or prolong several existing non-compliances and gaps identified in the ESA, including deficiencies in wastewater and manure management, incomplete life and fire safety measures, and weak formal E&S management systems and grievance mechanisms, which would still need to be addressed through the CAP even without the expansion; and

³² the Main Findings of Labour Force Survey in 2022, PCBS: <https://www.pcbs.gov.ps/post.aspx?ItemID=4421&lang=en>

³³ UN Trade and Development, 2024: <https://unctad.org/news/unemployment-west-bank-nearly-tripled-six-months>

- forego opportunities to improve resource efficiency and reduce GHG emissions through on-site packaging, increased use of biogas and solar power, and more efficient production processes.

From an economic and social standpoint, the no-project scenario would limit the company's ability to respond to growing demand for dairy products and stable milk off-take from farmers, constrain job creation potential in an area with relatively high unemployment, and maintain dependence on imported packaging materials and electricity.

Overall, the no-project alternative is not preferred because it would not support the F4J III development objective of mobilizing private investment and job creation, and it would miss the opportunity to address key E&S risks through an integrated expansion, ESIA, ESMPs and the ESA CAP.

6.3. SITE LOCATION AND LAYOUT ALTERNATIVES

Integrated Al Thahreyeh complex vs. dispersed or off-site expansion

The selected option is to cluster the four expansion subprojects on land owned by Al Jebrini at Al Thahreyeh, adjacent to the existing cow farms and biogas unit and within an area characterized by mixed agro-industrial uses and scattered residences. The plastic and artisanal dairy factories are located on plots classified as a "light manufacturing and crafts zone" in the approved masterplans for Al Thahreyeh and Dura, while the cow farm expansion area lies just outside the currently approved masterplan but within the wider 350-donum landholding.

Two main siting alternatives were considered conceptually:

- **Alternative A - dispersed expansion:** locating the plastic factory and/or artisanal dairy factory in existing urban or industrial areas closer to town centers (for example near the main dairy plant), while keeping the farm expansion at Al Thahreyeh. This would reduce incremental development pressure on agricultural land at Al Thahreyeh, but would increase transport of raw milk, packaging materials and finished products between sites, add heavy-vehicle traffic through more densely populated areas, and complicate integration with the existing biogas unit and rooftop PV system.
- **Alternative B – different plots within Al Jebrini's 350-donum landholding:** shifting one or more subprojects to alternative parcels on the same property. Given that large parts of the surrounding land are agricultural and that the current locations already benefit from access roads, grid connections and proximity to the cow farms and biogas unit, relocating within the estate would offer limited E&S gains while requiring new earthworks and internal infrastructure.

On balance, the chosen layout; co-locating the plastic factory, artisanal dairy factory, PV system and farm expansion on the current plots, minimizes off-site transport, allows shared use of internal roads and utilities, and facilitates integrated management of manure, wastewater, energy and solid waste. The main trade-off is continued conversion pressure on agricultural land, which is being addressed through licensing regularization, compact building footprints and the ESA CAP measures on land-use compliance and stakeholder engagement with municipalities.

6.4. SCALE AND TIMING ALTERNATIVES

The expansion scale (around 400 additional cows, a modest in-house plastic factory dimensioned mainly to cover Al Jebrini's own packaging needs, a dedicated artisanal dairy factory and a 500 kWp rooftop PV system with 223 kWh of storage) has been determined based on current and projected demand for dairy products, the capacity of existing processing facilities and utilities, and financial viability considerations.

Two generic options were examined:

- Smaller, incremental expansion: This would reduce short-term construction and operational impacts, but would not fully meet the company's medium-term demand projections or allow economies of scale for the packaging and PV systems. It would also dilute the job creation impact and prolong the reliance on external suppliers and grid electricity.
- Larger expansion: Significantly increasing herd size or packaging capacity beyond current plans could put pressure on manure and wastewater management systems, local road capacity and available skilled labor, and could raise concerns regarding cumulative impacts on groundwater and ambient environment if not matched with proportionate infrastructure upgrades.

The selected scale is considered a reasonable balance: large enough to be economically and operationally meaningful, but still within the carrying capacity of the site and of Al Jebrini's management systems, provided that the ESMPs and ESA CAP are fully implemented.

6.5. TECHNOLOGY AND PROCESS ALTERNATIVES

6.5.1. COW FARM EXPANSION: HOUSING AND MANURE MANAGEMENT

For the cow farm expansion, the main technology choices relate to animal housing type and manure management. The selected design consists of steel-frame sheds with partially concrete and partially natural-soil floors, open sides for natural ventilation supplemented by fans and misting systems, sloped concrete floors directing urine and wash water to collection channels and lagoons, and integration with the existing biogas digester for manure utilization.

Conceptually, the following alternatives were considered:

- Open feedlot with minimal roofing: Large open yards with limited shelter and earthen floors would reduce construction costs but would increase exposure of animals and manure to rainfall and wind, raise dust and odor emissions, and increase the risk of uncontrolled runoff and groundwater contamination. It would also be less suitable for maintaining animal productivity under increasingly hot summers.
- Fully enclosed mechanically ventilated barns with slatted floors and slurry pits: This would provide strong control over emissions and manure collection, but at significantly higher capital and operating cost (ventilation, cooling, manure handling). In Al Thahreyyeh context of relatively mild winters and existing good natural ventilation, a fully enclosed system would be unnecessarily energy-intensive and could create animal-welfare problems if power is interrupted.
- Selected hybrid system (partially open, roofed sheds with integrated biogas connection): This combines the animal-welfare advantages of shaded, well-ventilated housing with relatively simple structural design and direct channeling of manure and urine to storage and onward transfer to the existing biogas unit. Environmental performance depends on proper lining, maintenance and management of the lagoons and biogas plant; issues that are addressed through the ESA CAP and farm ESMP.

Given the site climate, existing biogas infrastructure and financial considerations, the selected hybrid design with biogas integration is preferred, provided that CAP measures on lagoon lining, leakage control and occupational safety at the digester are implemented.

6.5.2. ARTISANAL DAIRY FACTORY: PROCESS CONFIGURATION AND WASTEWATER MANAGEMENT

For the artisanal “Baladi” factory, the main technology decisions relate to whether to use a dedicated facility or adapt existing industrial lines in Hebron facility, and to how thermal treatment, CIP and wastewater are managed. The chosen option is a dedicated, small-scale factory with batch processes for products such as labneh, white cheeses and jammed, equipped with pasteurizers, incubators, turbo dryers, butter/ghee units, an integrated CIP system and integration of effluent with the biogas digestors.

Alternative options considered conceptually include:

- **Producing artisanal products on the existing industrial lines:** This would avoid building a new facility but would constrain product differentiation, increase the risk of cross-contamination between artisanal and mass-market lines, and complicate scheduling and cleaning, with potential negative implications for food safety and product quality. More importantly, this option would increase logistics cost and transportation requirements as well as associated traffic and community health and safety risks with moving raw material and milk from the farms to the existing facility in Hebron daily.
- **New artisanal factory with less automated equipment:** A more “traditional” plant relying more heavily on manual processes would reduce initial investment but would increase operational labor demands, raise OHS risks, and fail to meet ESS3 requirements and EHS Guidelines for wastewater and hygiene.

Selected option: dedicated factory with modern CIP and effluent integrated with biogas: This approach allows better control of product quality and food safety, supports resource efficiency through recovery of some organic loads to the biogas plant, and provides a clear platform to implement the ESMP’s OHS and wastewater management measures. The selected configuration is therefore preferred from both an environmental and a quality/market perspective, despite its higher up-front cost.

6.5.3. PLASTIC FACTORY: PACKAGING TECHNOLOGY AND MATERIAL OPTIONS

The plastic factory will use PET injection molding and one-step Injection Stretch Blow Molding (ISBM) to produce preforms, bottles, containers and caps for Al Jebrini’s dairy products. Key process features include electric-heated injection units, closed-loop mold cooling, infrared preform heating and fully automatic stretching and blow molding, all operated in an enclosed building with dedicated ventilation.

Conceptually, the main alternatives are:

- **No in-house plastic production (continued outsourcing):**
 - Technical/economic: removes the need for a new factory, but keeps the company dependent on external suppliers for just-in-time packaging, exposes it to price and supply volatility, and reduces opportunities for customized designs and rapid product innovation.
 - E&S: shifts direct manufacturing emissions and waste to third-party facilities, but increases transport needs and associated emissions and traffic risks, and reduces the scope for F4J III to drive improvements in local market practices.
- **In-house blow molding only (purchasing PET preforms or other semi-finished inputs):**
 - Technical/economic: reduces the number of process stages onsite, but still requires substantial equipment and dependence on preform suppliers, limiting flexibility over resin grade and preform design.
 - E&S: somewhat lower onsite energy consumption and less scrap from injection defects, but increased transport and handling of preforms; overall EHS risk profile (heat, noise, plastic fumes) remains similar.
- **Alternative materials and technologies (e.g. HDPE/PP extrusion blow molding):**
 - Technical/economic: HDPE and PP bottles are common for some dairy products but typically require thicker walls for strength and offer different barrier properties compared to PET. Switching material would affect filling lines, storage and product shelf life and may complicate recycling streams.

- E&S: environmental profile depends on resin supply chains and recyclability. In the current Palestinian context, PET bottles and cups are widely used and collected; changing materials would not necessarily improve recyclability and could increase material use per unit of product.

Selected option – integrated PET injection + one-step ISBM:

- Technical/economic: offers high control over bottle and container design and quality, efficient material use and lower energy consumption per unit of output compared with multiple separate processes, particularly when using modern, energy-efficient machines and closed-loop cooling.
- E&S: enables optimization of wall thickness (reducing plastic use), minimizes intermediate transport and packaging, and facilitates implementation of EHS Guidelines for plastic manufacturing (ventilation, noise control, housekeeping, waste minimization) within a single, well-managed facility.

Given the need for reliable, food-grade, locally produced packaging and the ability to control E&S performance, the selected PET injection and one-step ISBM option is preferred over continued outsourcing or partial in-house production, provided that the ESMP’s measures on OHS, plastic scrap management and fire safety are implemented.

6.5.4. ROOFTOP SOLAR PV SYSTEM: CONFIGURATION AND STORAGE

The proposed system is a 500 kWp rooftop, grid-connected PV plant with a 223 kWh distributed battery energy storage system integrated through a microgrid capable of both grid-connected and islanded operation.

Conceptually, several alternatives exist:

- **No PV system (continued full reliance on grid electricity and biogas/backup diesel):**

reduces the need for new electrical infrastructure and avoids PV-related waste and safety risks; but maintains high operating costs, greater exposure to grid outages and fuel price volatility, and higher GHG emissions.

- **Ground-mounted PV plant near the site:**

would allow easier access for installation and maintenance but would require conversion of additional land, likely agricultural land with medium to high value in an area already under pressure from industrialization.

- **Rooftop PV without battery storage (simple grid-tied system):**

simpler and lower cost, but offers limited resilience during grid outages and less flexibility to align PV generation with load profiles, especially for night-time cooling and critical loads (e.g. refrigeration, milking equipment).

- **Rooftop PV with oversized battery storage:**

could enable near-islanded operation but would significantly increase capital cost and future hazardous-waste liabilities from battery replacement, without proportionate benefits given the presence of a grid connection and biogas/diesel backup options.

Selected option – rooftop PV with moderate storage and smart microgrid:

- uses existing roofs, avoiding additional land take;
- improves energy security and allows partial operation during grid interruptions by supplying priority loads from PV and batteries;
- enables optimization of self-consumption and integration with the biogas generator; and

- keeps battery capacity moderate, limiting long-term hazardous-waste volumes, while still providing meaningful resilience.

On balance, the selected rooftop, partially-storage-backed configuration provides the best compromise between technical performance, cost, land-use efficiency and environmental benefits.

6.6. CONSTRUCTION METHODS, O&M AND ORGANIZATIONAL ALTERNATIVES

At the construction stage, most works have followed or will follow standard reinforced concrete foundations and prefabricated steel structures for sheds and factory buildings, rather than heavier masonry structures. This approach reduces construction time, facilitates future modifications and allows better integration of rooftop PV, while maintaining structural stability when combined with proper engineering and civil defense approvals. Alternatives such as fully masonry buildings would increase material consumption and construction impacts without significant E&S advantages.

For operation and maintenance, two broad approaches can be contrasted:

- **Business-as-usual O&M with fragmented procedures:** continuing existing informal practices for OHS, maintenance and environmental management, relying mainly on compliance with basic national requirements. The ESA showed that such an approach has led to significant gaps (incomplete permitting, inadequate wastewater management, weak grievance mechanisms, etc.).
- **Enhanced O&M under an integrated ESMS:** adopting structured procedures and responsibilities for E&S management across all subprojects, in line with the ESA CAP, ESIA and ESMPs. This includes dedicated E&S focal points, formal OHS and emergency response plans, systematic maintenance schedules for the biogas, PV, dairy and plastic plants, and project-specific grievance mechanisms and SEA/SH measures.

Given the ESA findings and F4J III requirements, the second approach is clearly preferred and has been adopted as the basis for the ESIA and the ESMPs.

6.7. SUMMARY OF PREFERRED ALTERNATIVES

The table below summarizes the key alternatives considered and indicates the preferred option for each main decision area.

Table 3: Summary of Selected Alternatives

Decision area / subproject	Main alternatives considered	Key environmental & social implications	Preferred option and justification
Overall project	(i) No-project / no expansion; (ii) Integrated expansion of four subprojects at Al Tahreyeh	No-project avoids incremental impacts but maintains existing non-compliances, foregoes job creation and resource-efficiency gains; integrated expansion allows addressing ESA findings and improving E&S performance but requires robust mitigation	Integrated expansion with ESIA, ESA CAP and ESMPs; supports F4J III objectives and enables systematic management of existing and new risks
Site location & layout	(i) Dispersed facilities in different locations; (ii) Alternative plots within estate; (iii) Clustered expansion at current plots	Dispersed siting increases transport, traffic in populated areas and complicates utilities integration; relocating within estate offers little E&S gain and requires new internal	Clustered layout at current plots, with licensing regularization and compact footprints to limit land-take and cumulative impacts

		infrastructure; clustering strengthens integration but adds pressure on agricultural land	
Cow farm housing & manure management	(i) Open feedlots; (ii) Fully enclosed barns with slatted floors; (iii) Partially open roofed sheds with lagoons and biogas connection	Open feedlots increase runoff, odor, and climate stress; fully enclosed barns are costly and energy intensive; hybrid system balances animal welfare, cost and feasibility but requires improved lagoon and biogas management	Hybrid sheds integrated with biogas unit, combined with CAP and ESMP measures on lagoon lining, leakage control and OHS
Artisanal dairy processing	(i) Use existing industrial lines; (ii) New small factory (iii) Dedicated artisanal factory with CIP and integrated with biogas	Using existing lines constrains quality and increases cross-contamination risk; new factory without automated processes would not meet ESS3 and hygiene requirements; dedicated factory with automated processes offers best control but higher cost	Dedicated artisanal factory with modern operations, as designed, with ESMP provisions for wastewater, OHS and quality management
Plastic packaging technology	(i) Continue outsourcing packaging; (ii) In-house blow molding only; (iii) Alternative resins (HDPE/PP); (iv) PET injection and one-step ISBM	Outsourcing maintains dependence and transport emissions; partial in-house reduces flexibility; material switching complicates lines and may not improve recyclability; integrated PET injection and ISBM optimizes material use and quality and allows strong EHS control	PET injection molding and one-step ISBM in a dedicated factory, with EHS controls and waste minimization as per ESMP
PV configuration	(i) No PV; (ii) Ground-mounted PV; (iii) Rooftop PV without storage; (iv) Rooftop PV with very large storage; (v) Rooftop PV with moderate storage and microgrid	No PV maintains high grid/fuel use; ground-mount consumes additional land; simple rooftop PV has limited resilience; oversized storage increases costs and hazardous-waste; moderate storage with microgrid improves reliability and self-consumption while limiting land and waste impacts	500 kWp rooftop PV with 223 kWh storage and microgrid controller, integrated with existing power system and subject to ESMP measures for electrical safety, fire, and e-waste
O&M and organizational setup	(i) Fragmented, informal O&M and E&S management; (ii) Integrated ESMS with project-specific ESMPs and CAP	Informal management contributed to ESA non-compliances and weak monitoring; integrated ESMS improves consistency, accountability and capacity to manage risks	Integrated ESMS with clear responsibilities, procedures, training and monitoring as set out in ESA CAP, ESIA and ESMPs

7. E&S RISKS AND POTENTIAL IMPACTS AND MITIGATION MEASURES

7.1. E&S RISKS IDENTIFICATION METHODOLOGY AND GRADING SYSTEM

The identification and grading of E&S risks and potential impacts in this ESIA follow the requirements set out in the TOR and the F4J III ESMF, which call for a structured methodology to rate severity in terms of duration, reversibility, scale and likelihood, and to cover positive and negative, direct, indirect and cumulative impacts across all of the project and its four subprojects' phases. The process starts from the project description and baseline: for each subproject (expansion farms, artisanal dairy factory, plastic factory and rooftop PV system), key activities are mapped for planning, construction/finishing, installation/commissioning and operation, and

where appropriate, decommissioning. For each activity, potential interactions with environmental and social receptors are identified, including groundwater and surface water, soil and geology, air quality and noise, biodiversity, occupational and community health and safety, labor and working conditions, land use, traffic and road safety, and socioeconomic, among others identified in this chapter.

Once potential interactions are identified, each impact is described qualitatively (nature, cause-effect pathway, affected receptors, and whether it is direct, indirect or cumulative; positive or negative; reversible or irreversible). The impact is then characterized using four parameters: spatial influence (geographic extent), duration, intensity (or severity of change) and probability of occurrence. Each parameter is scored on an ordinal scale from 1 (low) to 4 (high), based on transparent definitions that distinguish, for example, short-term versus long-term or permanent effects, minor nuisance versus severe alteration of environmental or social conditions, and unlikely versus highly likely or continuous risks. These scores are summed to obtain an overall risk score between 4 and 16, which is then classified as Low (4-6), Moderate (7-9), Substantial (10-12) or High (13-16) significance.

The grading is first applied to the “unmitigated” situation, taking into account existing controls already in place at Al Jebrini (for example, current manure handling practices, existing OHS procedures and grievance channels identified through the ESA), and is then re-applied after proposed mitigation measures to determine residual risk levels. This allows the ESIA to demonstrate how the mitigation hierarchy has been used to avoid, minimize, remedy and, where necessary, compensate residual impacts, and to highlight where residual risks remain Substantial or High and require particular attention in the ESMPs.

The same methodology and grading system are used consistently across all subprojects and project phases, and for both environmental and social topics, which enables comparison of risks and prioritization of management measures. It also provides a clear link between the ESIA findings, the ESA Corrective Action Plan, and the four subproject ESMPs, since each ESMP measure is directly tied to impacts whose significance has been rated using this system. The matrices and significance ratings therefore serve as the backbone of the risk-based management approach required under the ESF and the TOR for this assignment.

Table 4: E&S Risks and Potential Impacts Significance Rating Methodology

Parameter	Evaluation Description	Rating
Spatial Influence	Low: Within the project site	1
	Moderate: Impact beyond site boundary; Local	2
	Substantial: Widespread impact beyond site boundary; Local	3
	High: Impact widespread far beyond site boundary; Regional/national	4
Duration	Low: Quickly reversible, less than project life, short term	1
	Moderate: Reversible overtime; medium term to life of project	2

	Substantial: of difficult reversibility overtime; medium term to life of project	3				
	High: Beyond closure; permanent; irreplaceable or irretrievable commitment of resources	4				
Intensity	Low: Minor deterioration, nuisance or irritation, minor change in species/habitat/diversity or very little quality deterioration or disturbance;	1				
	Moderate: moderate deterioration, discomfort. Partial loss of resource or slight or alternation or disturbance.	2				
	Substantial: alteration or disturbance is significant	3				
	High: severe alteration or disturbance to important Processes.	4				
Probability	Low: Unlikely; low likelihood; Seldom No known risk or induced hazards.	1				
	Moderate: Possible, distinct possibility, frequent Low to medium risk or induced hazards.	2				
	Substantial: Possible, distinct possibility, frequent substantial risk, or induced hazards.	3				
	High: Definite (regardless of prevention measures), highly likely, continuous high risk or vulnerability to natural or induced hazards.	4				
Risk rating	<p>Based on the extent of spatial influence, the foreseen intensity negative impact, duration of the impact and the likelihood of risk occurrence, the overall E&S risk is therefore rated as low, moderate, substantial, or high.</p> <p>The summation of the ratings with the range defines as follows:</p> <table border="1"> <tr> <td style="background-color: #00b050; color: white; text-align: center;">4-6 as Low</td> </tr> <tr> <td style="background-color: #ffcc00; color: black; text-align: center;">7-9 as Moderate</td> </tr> <tr> <td style="background-color: #6600cc; color: white; text-align: center;">10-12 as Substantial</td> </tr> <tr> <td style="background-color: #cc0000; color: white; text-align: center;">13- 16 as High</td> </tr> </table>		4-6 as Low	7-9 as Moderate	10-12 as Substantial	13- 16 as High
4-6 as Low						
7-9 as Moderate						
10-12 as Substantial						
13- 16 as High						

7.2. APPROACH AND STRUCTURE OF THE SUBPROJECT-SPECIFIC E&S ASSESSMENT

This section explains how the E&S risks and potential impacts are assessed and presented for each of the four expansion subprojects at Al Thahreyeh site. Building on the methodology and grading system in Section 7.1, the subsequent sub-sections apply a consistent, stepwise analysis to each subproject without prejudging the outcome of the assessment in advance. As discussed above, this chapter focuses on the 2 subprojects directly supported by the F4J III; (i) the plastic factory, and (ii) the rooftop solar energy subproject. [with Good E&S practices presented for the other two subprojects, namely; \(a\) the cow farms expansion, and \(b\) the dairy factory in Annex VII: Good E&S Practices for the Cow Farms Expansion and Dairy Factory.](#)

For each subproject, the ESIA first recalls the relevant project phases and activities (planning and design aspects that influence risk, construction and finishing works, installation and commissioning, operation and, where applicable, decommissioning). It then identifies the sources of potential impact and the environmental and social receptors that may be affected, and qualitatively describes the nature of each interaction. Using the four parameters defined in Section 7.1 (spatial influence, duration, intensity and probability), the significance of each potential impact is rated for the unmitigated case and, after taking account of the measures proposed in the ESMPs, for the residual situation. For each subproject, the narrative assessment is complemented by a summary table that presents, in a concise form, the main impacts, their significance ratings, and cross-references to the relevant ESMP measures.

7.3. SUBPROJECTS SPECIFIC E&S POTENTIAL IMPACTS AND RISKS AND MITIGATION MEASURES

This section presents the potential E&S impacts and risks identified using the methodology in Section 7.1, together with the mitigation measures proposed to manage them. For each subproject, the assessment follows the relevant project phases, describes the sources and pathways of impact, and assigns a significance rating for the unmitigated case. The corresponding mitigation and management measures are then outlined immediately after each group of impacts, and the residual significance is indicated. The detailed, action-oriented formulation of these measures is subsequently consolidated in the [site-specific ESMPs presented in Chapter 8. This chapter pertains to the two subprojects directly supported by the F4J III project, the rooftop PV system, and the plastic factory. The E&S potential impacts, risks and mitigation measures for the two other subprojects \(i.e., the cow farms expansion, and the dairy factory\) are presented in ANNEX VII: Good E&S Practices for the Cow Farms Expansion and Dairy Factory.](#)

7.3.1. ROOFTOP SOLAR PV SYSTEM

As described in [Section 2.3.4](#), Al Jebrini will install a rooftop solar PV plant of about 500 kWp on the roofs of the plastic factory and artisanal dairy factory, coupled with a battery-based micro-grid of about 599 kW / 223 kWh. The system will generate electricity close to the point of use, reduce dependence on the grid and on diesel generation, and improve energy security and operating costs.

The PV system has no land-take and no direct air emissions during operation, but it introduces specific risks during construction/installation, operation and eventual decommissioning, especially related to working at height, electrical and fire safety, structural integrity of roofs, and management of PV panels, inverters and batteries as hazardous or e-waste. These are assessed below using the methodology in Section 7.1.

7.3.1.1. SUBPROJECT ANTICIPATED POSITIVE IMPACTS

- **Environmental impacts**
 - o Promoting the generation of clean and renewable energy.

- Reducing the environmental footprint of the company's expansion subprojects, by minimizing GHG emissions from traditional energy sources.
- Contributing to the development of a more sustainable and climate-resilient energy source.
- **Economic impacts**
 - Leveraging solar power will lead to substantial savings on energy costs for the expansion subprojects.
 - Ensure uninterrupted and sustainable energy source for essential operations of the expansion subprojects.
 - Stimulate the local economy during different subproject phases.
- **Social impacts**
 - Additional employment opportunities; directly through the company and indirectly through the company's supply chains.
 - Strengthen community engagement and awareness of sustainable energy practices.

7.3.1.2. PLANNING AND PROCUREMENT PHASE

❖ Risks:

- **Regulatory Compliance:** Failure to obtain all necessary approvals and licenses prior to procurement and energization (including SELCO / PENRA approvals for grid connection, and any required EQA and Civil Defense clearances).
- **Design and structural due diligence:** Inadequate structural assessment of the roofs and mounting systems (load-bearing capacity, wind uplift, waterproofing, lightning protection), or insufficient integration of life and fire safety requirements at design stage.
- **Organizational and Institutional E&S Capacity and Training:** Limited availability of qualified staff within Al Jebrini and the selected contractor to manage E&S risks, and insufficient planning for training and supervision on ESF/ESS, OHS and emergency response.
- **Stakeholder Engagement and Information Disclosure:** Lack of effective stakeholder engagement and information disclosure during the planning phase.
- **Integration of E&S requirements into procurement:** Tender documents and contracts that do not clearly reflect ESF/ESS obligations, the F4J III LMP, worker GM and SEA/SH provisions, nor specify requirements for OHS, e-waste / hazardous waste management and incident reporting.
- **Equipment Specifications:** non-compliance of the system and related equipment to the local and international standards and guidelines for quality, safety, and energy efficiency, as well as Good International Industry Practices (GIIP).
- **Emergency and Fire Safety Planning:** insufficient planning of emergency preparedness measures, particularly life and fire safety (L&FS).

- ❖ **Significance:** The spatial influence is moderate (2), the duration is limited to works carried during the planning and procurement phase, but their aftermath extends to the next phases (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- **Regulatory Compliance:** coordinate with EQA, Civil Defense, SELCO, PENRA, municipality and other authorities as required on their requirements in regard to the project. Ensuring obtaining necessary permits, licenses, and approvals prior to initiating the installation and operation phases.
- **Design and Structural Due Diligence:**
 - Before procurement and installation, commission a licensed structural engineer to verify the load-bearing capacity of each roof (dead loads, PV and mounting loads, access loads,

- wind uplift and, where relevant, seismic loads) in line with the Palestinian building code and GIIP, and to provide stamped calculations and drawings.
- Require the PV supplier / EPC contractor to use mounting systems and roof-fixing details approved by the structural engineer and compatible with the roof type, ensuring that waterproofing, drainage, fire rating and lightning protection are not compromised.
 - Integrate structural and life-and-fire safety considerations into the detailed design, including safe roof access points, permanent walkways where needed, guardrails or anchor points for work at height, and lightning protection.
- **E&S Organizational Capacity:** Al Jebrini to assign the OHS supervisor as the E&S focal point, and hire/ designate additional OHS supervisors, and form an OHS committee with E&S responsibilities per Law No.3 of 2019 in accordance with workers numbers, and per the ESA and CAP.
 - **E&S Training and Capacity Building:**
 - F4J E&S Specialist to provide the E&S focal points with orientation and awareness on the ESF, ESSs, ESIA, and ESMP
 - Al Jebrini to provide workers with E&S orientation training and to continue OHS capacity building. These shall be documented in a log with the date, number, and names of participants, training content, and photos.
 - **Stakeholder Engagement and Information Disclosure:** stakeholder engagements shall be conducted in line with ESS10, the F4J III SEP, and documented, once cleared the ESMP and ESIA shall be disclosed by Al Jebrini in both English and Arabic languages.
 - **Integration of E&S requirements into procurement:**
 - Attach the ESIA and ESMP for the PV subproject and relevant ESF commitments to the bidding documents and contracts, and make compliance a contractual obligation.
 - Require the contractor to nominate an Environmental and Social focal point and commit to the site and industry specific clauses (e.g., e-waste management) as available in the supply and installation phase below.
 - Include clear clauses on codes of conduct, SEA/SH risk mitigation, incident notification timeframes, and penalties for non-compliance, aligned with ESIA and ESMP.
 - **Equipment Specifications:** Technical specifications shall include compliance requirements to local and international standards and guidelines. These include:
 - For PV Panels manufacturers: ISO 9001 for quality management systems, ISO 14001 for environmental management systems, IEC 61730 for the safety of photovoltaic modules.
 - For inverters and Batteries: ISO 9001, ISO 14001, CE certification for safety, EN 50178 safety requirements for power electronic converter systems, adequate noise specifications in line with EQA guidelines (Noise Emission <59 dB @ 1m)
 - **Emergency and Fire Safety Planning:** Engage Civil Defense during early planning phases to ensure comprehensive integration of L&FS measures into the system design. Prepare Emergency Response Procedures as part of the OHS plan and schedule mandatory training and drills for employees to enhance preparedness and compliance with Civil Defense requirements.

7.3.1.3. SUPPLY AND INSTALLATION PHASE:

I. Impacts on Air Quality

❖ Risks:

- **Dust generation:** as the internal roads to the roofs where the PV panels will be installed are unpaved, temporarily dust emissions will be generated during supplying of PV panels and relevant equipment inside the subproject site.
- **Concentrated emissions:** localized emissions of CO₂ and NO_x gases, as well as the potential for accidental lubricant and fuel spillage from transportation and crane lifting vehicles.

❖ **Significance:**

The spatial influence is Low (1), the duration is limited to works carried during the supplying and installation phase (2), the intensity of foreseen negative impacts is low (1), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- Dust generation: paving the internal roads to the roofs where the PV panels will be installed as stated in the CAP. Also, implement dust suppression techniques such as wetting down surfaces during heavy or frequent movement intervals.
- Concentrated emissions: Plan heavy equipment (transportation and lifting, etc..) movements and regularly maintain vehicles per the Ministry of Transport regulations.
- Vehicle Speed Monitoring: Regulate and monitor vehicle velocities not to exceed 20 Km/h on unpaved roads.

II. Noise:

❖ **Risks:**

- Noise Generation from Installation Activities: Increased noise levels resulting from the installation of PV panels and relevant equipment which may include minor civil works such as drilling.
- Transportation and Delivery of PV Panels and Relevant Equipment: Increased noise levels associated with transportation, unloading, and movement of PV panels and relevant equipment into the sites, potentially causing intermittent disturbance to the surrounding areas.

❖ **Significance:**

The spatial influence is Low (1), the duration is limited to works carried during the supplying and installation phase (2), the intensity of foreseen negative impacts is low (1), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- Noise Generation from Installation Activities: High-noise activities to comply with the Palestinian ambient noise specifications (70 dBA for industrial and commercial facilities). Also, ensure proper maintenance and timely servicing of equipment and machinery used during supply and installation works to minimize noise emissions. Provide workers with suitable personal protective equipment (PPE), such as earplugs or earmuffs, to mitigate occupational noise exposure.
- Transportation and Delivery of PV Panels and Relevant Equipment: Minimize unnecessary idling of trucks and machinery during loading and unloading to reduce noise emissions.

III. Solid Waste:

❖ **Risks:**

- Generation of waste from Installation Works: PV panels and relevant equipment installation activities will generate solid waste, including packaging materials, plastic, and metal scraps.
- Random Dumping of Waste: solid waste from this phase could be disposed of in random dumping sites, or in open areas.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the supplying and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Disposal of waste generated from Installation Works: Conduct regular site cleanups to remove discarded materials and maintain a clean and organized environment. Also, Place clearly marked waste bins throughout work areas.
- Random Dumping of Waste: Provide clear instructions to contractors and workers regarding waste management procedures and prohibited random waste disposal practices through E&S awareness and orientation training. And incorporate waste management clauses into contractor agreements where adherence to local regulations regarding solid waste management shall be maintained. This shall be in adherence to the construction and demolition waste bylaw No. 16 of 2023.
- Solid Waste Segregation & Recycling when Possible: Segregate waste at source into recyclables (cardboard, plastics, metals) and non-recyclables, and send recyclables to licensed collectors or recyclers where available and when possible.
- Sound Final Disposal: Ensure all residual wastes are transported to an approved municipal or licensed disposal facility in coordination with the local Joint Services Council (JSC) and municipality and retain disposal receipts where applicable.

IV. Hazardous Materials and Waste:

❖ **Risks:**

- Use and storage of hazardous materials: Potential risks associated with the temporary use and storage of hazardous substances such as sealants, adhesives, and cleaning agents during installation activities.
- Generation and Disposal of Hazardous Waste: Risks related to the generation of hazardous waste such as chemical residues, empty containers of sealants and adhesives, and contaminated materials.
- Accidental Spills and Leaks: Potential accidental spills or leaks of hazardous materials during handling, storage, or use.
- Handling broken PV panels: risks related to E-waste generation and handling from broken panels.
- Misclassification and mixing of hazardous / e-waste with general waste: Risk that empty chemical containers, oily rags or broken PV panels are treated as ordinary solid waste and mixed with general construction waste.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the supplying and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Hazardous Waste Disposal: Liaise with MoH and EQA on the disposal of any resulting hazardous waste, such as broken PV panels, and empty containers of sealants and adhesives. In line with the Palestinian hazardous waste management system No. 6 of 2021. Use licensed haulers for transporting hazardous waste to ensure safe and compliant transportation.
- Safe Handling and Storage Procedures: Establish clearly defined and secure areas for the temporary storage of hazardous materials, ensuring appropriate containment and labelling.
- PPEs: Provide workers with adequate PPE such as insulated gloves, goggles, respirators/masks, safety shoes, protective suits.
- Emergency Response Procedures (ERP): Maintain readily available spill response kits and equipment near areas of hazardous materials storage and usage.
- E-waste Management Measures:

- Require contractors to develop e-waste management measures as part of their bids, and to be approved by the company prior to installation.
- Handle broken or defective PV panels as e-waste: store them on pallets in a secure, covered area to avoid further breakage and dispersion of glass fragments.
- Where feasible, prioritize return to supplier take-back schemes or licensed e-waste recyclers, and explicitly prohibit disposal of PV panels in municipal dumps.
- Hazardous materials inventory and SDS: Maintain an inventory of all hazardous materials used during installation and keep Safety Data Sheets (SDS) available on site in Arabic and/or English. Use this information to define handling, storage and PPE requirements.
- Hazardous-waste segregation and tracking:
 - Collect hazardous wastes (chemical residues, oily rags, contaminated absorbents, empty adhesive / sealant containers, used cartridges) in dedicated, labelled containers separate from general waste.
 - Keep a simple log of hazardous wastes generated and removed from site (type, approximate quantity, date, and destination).
- Training and supervision:
 - Provide targeted training for installers on hazardous materials handling, PPE use, and e-waste procedures during induction and toolbox talks.
 - Ensure that the company's OHS/ E&S supervisor periodically checks storage areas and waste management practices for compliance.

V. Labor Rights and Working Conditions

❖ Risks:

- Noncompliance To Labor Rights: The Palestinian Labor Law (PLL) clearly defines working hours, leaves, wages, and benefits as well as Act No.4 of 2021 which is the latest decree setting the minimum wage limits in the Palestinian Territories. Nevertheless, the PLL and its suit of supporting decrees face enforcement challenges.
- Risk of Wages Below the Minimum Requirements: Contractors paying their workers' wages below the minimum requirements of Act No.4 of 2021 is expected especially when there are no contracts signed with the workers.
- Child Labor: civil works activities are classified as hazardous work and children under the age of 18 per the PLL are not permitted to partake in such a work environment.
- Insurance: a potential risk is contracted workers on site without a valid injury insurance policy in accordance with the PLL.
- Grievances: During the different phases of project implementation, concerns, complaints, and grievances are expected to arise among different types of project workers (i.e., direct and contracted). Such grievances are relevant to their labor rights and working conditions. The lack of an effective and transparent mechanism to voice such grievances and guarantee their review for resolution is an associated risk. Additional risks entailed include coercion and risks of retribution towards workers when they voice their grievances.
- Lack of Access to Resting Facilities, Washrooms, and Drinking Water: During this phase, contracted workers must be provided with access to resting areas, drinking water, and washroom facilities in line with Cabinet Decision No.15 of 2003.
- Forced or coercive practices: Risk of workers being forced to work overtime without consent or proper compensation, or being subject to retention of IDs or other coercive practices by contractors.

❖ Significance:

The spatial influence is moderate (2), the duration is limited to works carried during the supplying and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **Contractual Obligations:**
 - Ensure that all contracts with contractors and subcontractors explicitly state the need to adhere to labor laws, including age and wage requirements, working hours, and benefits.
 - Contractors are to submit their workers' contracts to the employer to ensure appropriate labor rights are included in the PLL.
 - Periodic monitoring shall also include a review of a sample of workers' pay slips to ensure adherence to Act No.4 of 2021.
 - For direct workers ensure that all new workers are provided with contracts that clarify rights, responsibilities, wages, working hours, benefits, and other aspects as stipulated in the PLL.
- **Mandatory Insurance:**
 - Make it mandatory for contractors and subcontractors to provide valid injury insurance policies for all workers before commencing work.
 - Regularly verify the validity of insurance policies and ensure they are in line with the PLL.
 - All direct workers must be included in a valid injury policy.
- **Minimum Wage:** Ensure that contractors and suppliers have signed contracts with their workers with the minimum requirements of the PLL and Act No.4 of 2021 is implemented.
- **Prohibition of child and forced labor:**
 - Explicitly prohibit child and forced labor in all contracts with contractors and suppliers, including prohibition of ID retention and recruitment fees.
 - Require contractors to maintain a worker register (name, ID, age, job, start date) available for inspection.
- **Working hours, overtime and rest:**
 - Require contractors to record working hours and overtime and to compensate overtime in accordance with PLL provisions; verify compliance during periodic monitoring.
 - Ensure daily and weekly rest periods are respected and that workers are not required to work excessive hours.
- **E&S Capacity:** Project Workers shall receive an E&S orientation training prior to the commencement of their activities covering the CoC, GM, OHS, ERP, and the ESMP overall.
- **Grievance Mechanism:** Contractors shall adopt al Jebrini's Workers' Grievance Mechanism for the project with appropriate uptake channels with supervision from the project owner as available in [Annex III](#).
- **Employment:** Ensure that the employment of workers is conducted based on merit and skills required only without bias towards social, gender, or socio-economic considerations.

VI. Life and Fire Safety Hazards and Risks:

❖ **Risks:**

- **Electrical connections and installations:** DC and AC faults in the PV system (short circuits, ground faults, arc faults, loose terminations) may lead to overheating and fire, posing risks of burns, electric shock and smoke exposure to workers and building occupants.
- **Battery overheating/ malfunctioning:** Batteries can overheat or enter thermal runaway due to poor ventilation, direct sun exposure, incorrect installation, over-charging, or manufacturing defects, potentially causing fire, explosion and release of toxic fumes.

- **Cabling and equipment layout:** Inadequate routing or protection of PV cables, inverters and combiner boxes (for example, near combustible materials or along escape routes) can increase the likelihood of fire spread and obstruct safe egress and firefighting access.
- **Emergency response constraints:** Absence of clearly identified DC/AC isolation points, shutdown procedures and hazard signage can expose Civil Defense and first responders to live electrical parts during firefighting or rescue operations, particularly in daylight when PV strings remain energized.

❖ **Significance:**

The spatial influence is moderate (2), the duration of any impacts during installation are pertinent to that phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **Compliance with Civil Defense and codes:** Design and install the PV system in accordance with Palestinian Civil Defense requirements available in [Annex V](#). Obtain Civil Defense and SELCO clearance (and other required approvals) prior to energization and keep as-built drawings available for inspection.
- **Qualified design and installation:** Ensure that all PV electrical works are designed, supervised and commissioned by qualified electrical / PV engineers and carried out by trained, competent electricians and technicians only.
- **Safe wiring and protection:** Install DC and AC cabling, junction boxes and inverters in line with manufacturer instructions and national electrical codes (for sizing, insulation, protection devices, earthing/ bonding and over-current / arc-fault protection).
- **Battery Supply:** Ensure procuring batteries that are specific to solar energy installations and that are compatible with the system, approved by the technical and electrical engineers.
- **Battery siting and ventilation:** Locate batteries in a dedicated, shaded and well-ventilated indoor room or sheltered area, away from direct sun and ignition sources. Provide adequate ventilation, temperature monitoring and manufacturer-recommended spacing, and prohibit smoking and open flames in the battery area.
- **Emergency shutdown and signage:** Provide clearly labelled, readily accessible DC and AC disconnects at agreed locations (for example, near building entrances and main distribution boards). Install durable warning and information signage (single-line diagrams, shutdown instructions, “PV array – energized in daylight” labels) to guide workers and Civil Defense.
- **Fire detection and firefighting readiness:** Equip inverter and battery areas with suitable fire detection (where feasible) and portable fire extinguishers rated for electrical fires. Train workers in basic fire response and extinguisher use as part of the site Emergency Response Plan.
- **PPE and safe work procedures:** Require appropriate PPE for electrical works (insulated gloves, arc-rated clothing where needed, safety shoes, eye/face protection) and apply lock-out/tag-out (LOTO) and permit-to-work procedures for electrical interventions and any hot works.
- **Inspection and maintenance:** Implement a preventive maintenance and inspection schedule, preferably semi-annual (visual checks, torque checks, insulation resistance tests, thermographic scans as needed) to identify and correct overheating, damaged components or loose connections before they lead to incidents.

VII. Community Health and Safety:

❖ **Risks:**

- **Inadequate Stakeholder Engagement:** Potential risk arising from insufficient communication or ineffective stakeholder consultation throughout the preparation and installation phase.

- Risks from Potential Fires and Emergency Situations: Inadequate preparedness for fire safety and other emergencies could impact community safety.

❖ **Significance:**

The spatial influence is low (1), the duration is limited to works carried during the supplying and installation phase (1), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- Stakeholder Engagement and Information Disclosure:
 - Continue regular stakeholder engagement throughout all project phases (planning, finishing works and installation, operational), ensuring timely, transparent, and culturally appropriate communication to all project-affected and interested parties, in accordance with ESS10.
 - Maintain records and logs of stakeholder engagement activities, clearly documenting participants, concerns raised, and resolutions provided.
 - Disclose project information, including E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in both English and Arabic languages, using accessible formats and channels.
- Fire and Emergency Preparedness:
 - Engage Civil Defense in the planning and installation phases, ensuring comprehensive fire safety integration into the facility design.
 - Regularly update and implement an Emergency Response Plan (ERP) in collaboration with local Civil Defense authorities.
 - Conduct regular fire drills and emergency response training for all workers, documenting results and corrective actions.
 - Ensure adequate and marked emergency exits and fire safety equipment (fire extinguishers, fire hoses, alarms) throughout the facilities, with regular inspections and maintenance.
 - Install emergency warning signs around the facilities premises and not only indoors. As well as an emergency assembly point sign.

VIII. Occupational Health and Safety:

❖ **Risks:**

- Occupational Health and Safety: the installation of the PV system and relevant equipment involves certain OHS risks including:
 - Falling from heights: PV system installation involves working on building rooftops, which can pose a risk of falls if proper fall protection measures are not in place.
 - Exposure of electrical hazards: Workers may be exposed to electrical hazards while connecting PV panels and wiring.
 - Injuries from sharp objects: Handling PV panels and mounting hardware can lead to injuries from sharp or pointed objects.
 - Falling objects: Tools, equipment, or materials used during installation can pose a risk of falling from rooftops and potentially injure workers or bystanders below. Adequate precautions should be taken to secure objects and materials.
 - Slip and trip hazards: roof surfaces can be slippery, especially in adverse weather conditions. Workers should be aware of slip and trip hazards and use appropriate footwear and fall prevention measures.

- Extreme weather: Exposure to extreme weather conditions, such as strong winds, rain, or extreme heat, can impact worker safety. Adequate protection and shelter should be provided when necessary.
 - Ladder and Access Safety: Proper ladder use and access to rooftops are crucial to prevent falls and injuries during ascent and descent.
 - Chemical and Hazardous Materials: Handling of chemicals or hazardous materials used in adhesives, sealants, or cleaning agents for PV systems should be done with proper precautions and safety data sheets.
 - Capacity and Awareness: Lack of compliance with OHS procedures and lack of adequate capacity among contractors and their workers could lead to incidents and injuries in the workplace.
 - Personal Protective Equipment (PPEs): The lack of commitment and adherence to the use of PPEs. Additionally, contractors may not provide their workers with sufficient or adequate PPEs.
 - Inadequate Emergency Preparedness and Response: Potential risk associated with insufficient preparedness or absence of clear emergency response measures (e.g., first aid, evacuation procedures, and response to electrical shocks).
- ❖ **Significance:**

The spatial influence is limited (1) probability of OHS incidents is substantial (3), the duration is limited to works carried out during the implementation phase (2), the intensity of foreseen negative impacts is moderate (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Civil Defense Requirements: Adhere to the Palestinian Civil Defense Requirements for PV system installation and Obtain Palestinian Civil Defense permits prior any installation activity.
- OHS Plan Commitment: Contractors to commit to and implement the Occupational Health and Safety Plan (OHS Plan) as available in [Annex II](#).
- ERP: Integrate and implement the Emergency Response Plan (ERP) as part of the OHS plan. Require contractors to report all incidents, near-misses and unsafe conditions to Al Jebrini, investigate root causes and implement corrective and preventive actions; include OHS performance in monthly reporting to the project owner and F4J III.
- OHS Competency, Supervision, and Training:
 - Ensure all electrical works are carried out and supervised by qualified and licensed electricians; working at height is supervised by competent personnel with demonstrable experience.
 - Provide all workers with OHS induction and toolbox talk before starting PV works, covering work-at-height risks, electrical safety, housekeeping, emergency response and safe chemical handling.
 - Designate an on-site OHS supervisor / E&S focal point for the contractor to monitor implementation of the OHS Plan, record observations and enforce corrective actions.
- OHS Responsibilities: Appoint an E&S focal point from the contractors' and suppliers' side to follow up on OHS and working conditions aspects.
- Compliance with PPE Use: Inspections will be conducted to ensure adequate quantities and conditions of PPEs, as well as the inspection of commitment to their use. This includes:
 - Ensure that all workers have access to and are trained in the use of fall protection equipment, such as safety harnesses, lifelines, and guardrails.
 - Require workers to wear cut-resistant gloves and appropriate clothing to minimize the risk of injuries from sharp objects.
 - Train workers in ladder safety, including proper ladder placement, securing, and use.
- First Aid Kits: Provide first aid kit on the site, ensure that kits are provided in adequate numbers per worker and that they are always accessible, and in good condition at all times.

- **Medical Facilities:** Coordinate and locate the nearest medical facility/ hospital to the site. Numbers of first aid response services shall be circulated to workers.
- **Tools and Equipment:** Secure tools, equipment, and materials to prevent them from falling from rooftops.
- **Work Zones:** Establish exclusion zones or barriers around work areas to protect workers and bystanders from falling objects. Display visible warning signs, barriers, and caution tape around the working area perimeter to alert and prevent unauthorized entry.
- **Working Conditions:** Monitor weather conditions, and suspend work during adverse conditions, such as high winds or lightning storms.
- **Waste Safe Handling:** Ensure that workers are familiar on safe handling and disposal of chemicals.
- **EHSGs Compliance:** Abide to the WB's Environmental Health and Safety Guidelines (EHSGs) both general and the EHSGs for Electric Power Transmission and Distribution.
- **Safe work at height:**
 - Provide safe access to roofs using properly secured industrial-grade ladders, stairs and, where necessary, compliant scaffolds with guardrails and toe boards.
 - Install temporary edge protection, lifelines and certified anchor points wherever there is a risk of falling; require use of full-body harnesses with double lanyards and shock absorbers.
 - Prohibit work at height during strong winds, rain, storms or other unsafe weather conditions; secure panels and larger components to prevent being blown off roofs.
- **Electrical safety:**
 - Apply lockout-tagout and isolation procedures before any work on electrical circuits; clearly identify and label isolators and disconnect switches.
 - Ensure proper earthing and bonding of structures and equipment; use insulated tools and test equipment suitable for the voltage levels involved.
 - Prohibit live work to the extent possible; where unavoidable, apply strict controls, including reduced voltage, use of arc-rated PPE and segregation of the work area.
- **Manual handling and ergonomics:**
 - Plan manual handling tasks to avoid over-exertion, using team lifts and mechanical aids (trolleys, hoists) for panels and inverters.
 - Rotate tasks and provide guidance on correct lifting techniques to reduce musculoskeletal strain.
- **Housekeeping, falling objects and site control:** Maintain good housekeeping on roofs and access routes by promptly removing waste, securing loose materials and routing cables neatly to avoid tripping.

7.3.1.4. OPERATION AND MAINTENANCE PHASE

I. Solid Waste:

Risks are similar to the supply and installation phase, but the significance rated as **Low** given the lower probability and duration of maintenance interventions. Mitigation measures of the supply and installation phase are also applicable to the operation and maintenance phase.

II. Hazardous Materials and Waste:

Risks are similar to the supply and installation phase, and the significance is still rated as **Moderate**. Mitigation measures of the supply and installation phase are also applicable to the operation and maintenance phase.

III. Fire Hazards and Risks:

Risks are similar to the supply and installation phase, but the significance rated as **Moderate** given the lower probability of electrical faults from operated connections.

❖ **Mitigation measures of the operation and maintenance phase include:**

- Conduct routine inspection and preventive maintenance of inverters, wiring, junction boxes, and panel connectors.
- Renew civil defense licenses and maintain coordination with the civil defense.
- Keep electrical components clean, dry, and free from dust, corrosion, and debris.
- Implement a Log-Out/Tag-Out (LOTO) procedure for all maintenance activities.
- Install surge protection devices and overcurrent protection (breaker/fuse systems) at critical points.
- Maintain clear access to fire extinguishers, emergency shutoff switches, and isolation points.
- Train staff on electrical hazard identification, emergency shutdown procedures, and fire response.
- Use battery management systems with real-time monitoring of temperature, charge/discharge rates, and cell health.
- Ensure proper ventilation and thermal management in battery area.
- Install overcharge protection devices and ensure inverters/chargers are correctly programmed to manufacturer limits.
- Conduct periodic inspections using thermal sensors.
- Inspect battery connections, terminals, and cables regularly for corrosion, looseness, or damage.

IV. Community Health and Safety:

Risks are similar to the supply and installation phase, and the significance is rated as **Low**. Mitigation measures of the supply and installation phase are also applicable to the operation and maintenance phase.

V. Occupational Health and Safety:

Risks are similar to the supply and installation phase, and the significance is still rated as **Moderate**. Mitigation measures of the supply and installation phase are also applicable to the operation and maintenance phase.

7.3.1.5. DECOMMISSIONING PHASE

At the end of its service life (expected after 20–30 years for PV panels, and 5-10 years for batteries, or in case of major upgrading), the rooftop PV system will be dismantled and removed from the roofs of the plastic factory and artisanal dairy factory. Decommissioning activities will include the isolation and disconnection of DC and AC circuits, removal of PV modules, mounting structures, inverters, cabling and battery units, temporary storage of equipment and waste on site, and transport to reuse, recycling or disposal facilities. In line with the General EHS Guidelines for construction and decommissioning, these works are short-term but may generate impacts related to waste and e-waste management, hazardous materials, OHS, and community health and safety if not properly planned and controlled.

I. Solid Waste and E-waste

❖ **Risks**

- Generation of large volumes of dismantled materials (PV modules, mounting rails, brackets, cabling, junction boxes, inverter housings, packaging and damaged components).
- Risk of uncontrolled or random dumping of dismantled equipment or scrap (e.g., leaving modules, cable off-cuts or metal parts on roofs, within the site or in informal dumps).

- Risk that reusable components are mixed with waste and lost instead of being reused or recycled, leading to inefficient resource use.

❖ **Significance**

The spatial influence is moderate (2), the duration is limited to the decommissioning period (2), the intensity is moderate (2), and the probability of poor waste handling is possible (2). The risk is therefore rated as **Moderate**.

❖ **Mitigation Measures**

- Decommissioning plan: Prepare a specific PV Decommissioning Plan before works start, detailing dismantling methods, waste streams, reuse / resale options, and destinations for recycling and disposal, consistent with the General EHS guidance for construction and decommissioning.
- Segregation and reuse: Separate materials at source into (i) intact modules and equipment suitable for resale or reuse, (ii) recyclable metals (aluminum frames, steel structures, copper cables), and (iii) residual waste. Prioritize reuse and recycling where feasible.
- Controlled storage on site: Store dismantled modules, frames and other materials in orderly stacks on pallets or in designated containers, away from roof edges and access routes, to avoid breakage and falling objects.
- Authorized off-site management: Transport residual solid waste to licensed municipal or industrial disposal sites in coordination with the municipality / JSC, keeping receipts and simple records of quantities.
- No open burning: Prohibit open burning of any waste in line with General EHS Guidelines.

II. Hazardous Materials and Waste (including Batteries and Broken Modules)

❖ **Risks**

- End-of-life PV modules, inverters and batteries are considered e-waste and may contain hazardous substances (e.g., heavy metals, electrolytes, electronic components). If damaged or disposed of improperly, these may pose risks to soil, water and human health.
- Risk of spills or leaks of battery electrolyte or other chemicals during dismantling, temporary storage, transport or handling of damaged batteries, inverters or junction boxes.
- Risk that empties chemical containers, oily rags, contaminated absorbents and broken modules are mixed with non-hazardous waste and sent to uncontrolled dumps.

❖ **Significance**

The spatial influence is moderate (2), the duration of potential contamination could extend beyond the decommissioning period if mismanaged (3), the intensity is moderate to substantial depending on quantities (3), and the probability is possible (2). Overall, the risk is rated as **Substantial** in the unmitigated case.

❖ **Mitigation Measures**

- Regulatory compliance: Treat batteries, inverters, electronic components and broken PV modules as hazardous / e-waste and manage them in line with the Palestinian Hazardous Waste Management System No. 6 of 2021 and relevant EQA guidance.

- Supplier and take-back arrangements: Where feasible, negotiate take-back agreements with PV module, inverter and battery suppliers or specialized e-waste recyclers, and send end-of-life equipment to licensed recovery / recycling facilities.
- Secure storage:
 - Store batteries in their original or equivalent robust packaging on spill-containing pallets in a dedicated, ventilated indoor area, away from ignition sources.
 - Store broken or cracked modules on pallets in a covered, secure area to avoid glass dispersion and weathering.
- Spill prevention and response:
 - Keep spill kits (absorbents, neutralizing agents, PPE, containers) near battery and hazardous waste storage.
 - Train workers on spill response procedures consistent with the General EHS guidance on hazardous materials management.
- Hazardous-waste labelling and tracking: Use clearly labelled, closed containers for all hazardous wastes and keep a simple register (type, quantity, date, off-site destination).
- Prohibition of informal disposal: Explicitly prohibit disposal of PV modules, batteries or inverters in municipal dumps or informal sites in contracts with decommissioning contractors.

III. Labor Rights and Working Conditions

❖ Risks

- Similar risks to those described for the supply and installation phase: non-compliance with Palestinian Labor Law and minimum wage decree, lack of written contracts, absence of valid injury insurance, and weak access to an effective workers' GM.
- Because decommissioning is short-term, there is a particular risk of informal hiring without contracts, insurance or adequate information on rights and obligations.

❖ Significance

Spatial influence is moderate (2), duration is short-term (2), intensity is moderate (2), and probability is possible (2). The risk is rated as **Moderate**.

❖ Mitigation Measures

- Apply the same labor rights, insurance, recruitment and workers' GM measures defined for the supply and installation and O&M phases (Section 7.3.1.3 and 7.3.1.4).

IV. Gender-Based Violence (GBV), SEA and SH

❖ Risks

- Short-term decommissioning works may again bring contracted workers into interaction with existing staff at the dairy and plastics factories, including female workers, with associated risks of SEA/SH if not properly managed.

❖ Significance

Spatial influence is low (1), duration is short-term (2), intensity is moderate (2), and probability is possible (2). The risk is rated as **Moderate**.

❖ **Mitigation Measures**

- Extend the Code of Conduct (including GBV/SEA/SH clauses) and associated training to all decommissioning contractors and workers; ensure all sign and understand it before work starts.
- Maintain and publicize confidential GBV sensitive channels within the Workers' GM, with survivor-centered handling and referral pathways to specialized service providers as set out in the project GM annex.
- Include supervision and spot checks by Al Jebrini's E&S focal point to monitor behavior and enforce zero tolerance for GBV/SEA/SH.

V. Fire, Electrical and Structural Safety

❖ **Risks**

- Electrical hazards during isolation and dismantling of live circuits (residual DC in PV strings, stored energy in capacitors and batteries), with potential for electrical shock or arc-flash if lock-out / tag-out procedures are not followed.
- Fire risk from mishandling or short-circuiting of batteries and cabling during removal and transport.
- Risk of compromising roof waterproofing or structural integrity when removing anchors, mounts and conduits, which could lead to leaks and long-term deterioration of buildings if not properly repaired.

❖ **Significance**

Spatial influence is moderate (2), duration of consequences could be medium-term if structural defects persist (3), intensity is substantial (3), and probability is possible (2). The risk is rated as **Substantial** without mitigation.

❖ **Mitigation Measures**

- De-energization and LOTO: Prepare a detailed switching and isolation procedure for PV strings, inverters and batteries. Implement lock-out/tag-out and verify absence of voltage before starting dismantling.
- Qualified personnel: Ensure that all electrical and battery-related works are supervised and executed by qualified electricians / PV technicians familiar with the system and manufacturer instructions.
- Fire safety: Maintain fire extinguishers rated for electrical and battery fires within reach during dismantling; integrate decommissioning activities into the facility Emergency Response Plan and inform Civil Defense of the schedule.
- Roof inspection and reinstatement:
 - Conduct joint inspections of roofs before and after removal of mounting structures.
 - Properly seal all penetrations and restore waterproofing layers and flashings; replace damaged roofing materials as needed.
 - Ensure that no sharp elements or trip hazards remain on the roof after completion.

VI. Community Health and Safety

❖ Risks

- Short-term increases in traffic, noise and dust from cranes, trucks and lifting equipment mobilized for removing PV modules and batteries.
- Potential exposure of community members to stored e-waste or hazardous materials if these are temporarily stored in unsecured outdoor areas.

❖ Significance

Spatial influence is low to moderate (1–2), duration is short-term (2), intensity is moderate (2), and probability is possible (2). Overall, the risk is rated as **Moderate**.

❖ Mitigation Measures

- Maintain the same community H&S measures applied during the supply and installation phase (traffic management, restricted access, signage, liaison with neighbors), adapted to the shorter decommissioning period.
- Establish clearly marked exclusion zones underneath roof edges and lifting areas; prevent public or non-essential staff access to these zones during decommissioning hours.
- Store dismantled equipment and e-waste in fenced or locked areas within the site, not accessible to the public.

VII. Occupational Health and Safety

❖ Risks

- OHS risks are broadly similar to those in the installation phase, with additional hazards linked to ageing equipment (fragile modules, corroded fixings) and potential contamination of components. These include:
 - Working at height on roofs (falls, falling objects).
 - Manual handling of heavy or awkward components (panels, inverters, battery units).
 - Electrical hazards during disconnection and removal.
 - Exposure to sharp edges, glass fragments and residual chemicals or dust.

❖ Significance

Spatial influence is limited (1), probability of incidents is substantial (3), duration is short-term (2), and intensity is moderate (2). The risk is rated as **Moderate**.

❖ Mitigation Measures

- Apply the same OHS measures outlined for the installation phase (safe work at height, PPE, supervision, toolbox talks, first aid, weather monitoring, etc.), with explicit reference to decommissioning tasks.
- Emphasize manual-handling and ergonomics in training; use team lifts and mechanical aids for heavy components and batteries.

- Require use of cut-resistant gloves, safety glasses and long sleeves when handling old modules, frames and broken glass.
- Maintain sanitary facilities and drinking water for all decommissioning workers, following General EHS guidance for construction and decommissioning activities.

7.3.2. PLASTIC FACTORY

As described in [Section 2.3.2](#), the plastic factory is a new production facility within the Al Jebrini expansion complex at Al Thahreyeh. It will house an automated one-step ISBM line and associated pre-treatment and feeding equipment to convert food-grade PET granules into bottles and other primary packaging for Al Jebrini's dairy and beverage products. The factory is intended mainly to meet the company's own packaging needs, strengthen quality control over food-contact materials, reduce dependence on external suppliers, and improve the security, cost efficiency and flexibility of packaging supply.

The plastic factory will be located on already-developed industrial land and has no additional land acquisition, but its construction and operation introduce specific environmental and social risks and impacts. These are related in particular to electricity demand and associated emissions, noise and heat from molding machines, compressors and cooling units, handling and storage of PET granules and additives, generation and management of plastic scrap and off-spec products, fire and life-safety risks in a high-plastic environment, occupational health and safety for workers, and traffic and community health and safety linked to the movement of raw materials and finished packaging. These risks and potential impacts, including interactions with the other expansion components, are assessed below using the methodology in Section 7.1.

7.3.2.1. SUBPROJECT ANTICIPATED POSITIVE IMPACTS

- **Economic impacts**
 - Additional employment opportunities, directly through the company (production workers, technicians, maintenance staff, warehouse and logistics workers) and indirectly through the company's supply and marketing chains.
 - Securing a reliable and sustainable flow of essential plastic containers for Al Jebrini's operations, helping the company to overcome risks related to mid to long term border closures, supply shortages and price volatility in imported packaging.
 - Strengthening linkages along the local value chain of inputs, transport, maintenance and trading services in a mutually beneficial manner for private sector actors and supporting businesses.
- **Social impacts**
 - Enhancing local employment opportunities for women and youth, particularly in production, quality control, packaging and administrative functions, in line with the company's commitment to inclusive hiring.
 - Contributing to the stable availability of safe, food grade plastic packaging for dairy and related products, which supports continuity of supply to local consumers and reinforces confidence in product quality.

7.3.2.2. FINISHING WORKS AND INSTALLATION PHASE

Given that the core construction activities of the plastic factory are completed and have been assessed in the ESA, this section focuses on the finishing works and installation of equipment phases of the work.

I. Impacts On Air Quality:

❖ **Risks:**

- **Dust generation:** as the internal roads to the factory are unpaved, temporarily dust emissions will be generated during supplying new machinery and equipment and other materials needed for the preparation and installation activities inside the subproject site. Also, sanding, cutting, or drilling during preparation works can generate dust and particulate matter.
- **Installation activities and solvent use:** The process of installing the production line, including electricity connections, chillers, and accessories, may involve activities that generate dust and fumes, use of paints and solvents for equipment installation and touch-up painting, and localized emissions from welding or cutting, which could pose air-quality risks if not properly controlled.
- **Exhaust from construction equipment and vehicles:** Short-term emissions (NO_x, PM, CO) from diesel-powered trucks, forklifts, cranes or generators used during installation may contribute to localized deterioration of air quality if poorly maintained or unnecessarily idling.

❖ **Significance:**

The spatial influence is Low (1), the duration is limited to works carried during the finishing works and installation phase (1), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- **Dust control and road condition:** Implement dust-suppression techniques such as wetting down unpaved surfaces during periods of intensive vehicle movement and as committed in the CAP, pave internal roads to the site. Where paving is not yet complete, limit vehicle speeds and confine traffic to designated routes.
- **Good housekeeping during finishing works:** Enclose or screen high-dust activities (e.g. sanding, cutting) where feasible, and ensure regular sweeping/cleaning of work areas to prevent dust accumulation and re-suspension.
- **Use of low-emission products:** Select and utilize low-VOC paints, adhesives, and solvents during installation activities, in line with Good International Industry Practice, to reduce emissions of volatile organic compounds. Keep containers closed when not in use and avoid unnecessary use of solvent-based products.
- **Fume Management During Equipment Setup:** Ensure that the site premises include local exhaust ventilation (LEV) systems that are installed and functioning to capture fumes at the source and ensure that areas are well-ventilated.
- **Vehicle and equipment emissions:** Require all trucks, forklifts, cranes, and generators used on site to be in good mechanical condition and compliant with national vehicle inspection requirements; avoid unnecessary idling and plan deliveries so as to minimize queuing and congestion.
- **Worker protection:** Provide workers involved in high-dust or fume-generating activities with appropriate respiratory protection and eye protection, in line with the OHS section.

II. Noise

❖ **Risks:**

- **Noise Generation from Installation Activities:** Increased noise levels resulting from minor civil works, including drilling, flooring, tiling, and installation of equipment and infrastructure (HVAC units, machinery, and electrical installations).
- **Transportation and Delivery of Equipment:** Increased noise levels associated with transportation, unloading, and movement of machinery and materials into the facility, potentially causing intermittent disturbance.
- **Occupational noise exposure inside the factory:** Elevated noise levels from drilling, cutting, hammering, and testing of new equipment (e.g. compressors, chillers, fans) during installation may

result in temporary exceedances of recommended occupational noise limits and hearing risks for workers if not properly controlled.

❖ **Significance:**

The spatial influence is Low (1), the duration is limited to works carried during the finishing works and installation phase (2), the intensity of foreseen negative impacts is low (1), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- **Noise Generation from Installation Activities:**
 - Comply with ambient noise level limits in specifications No. PS 840- 2005
 - Ensure proper maintenance and timely servicing of equipment and machinery used during preparation and installation works to minimize noise emissions.
 - Provide workers with suitable personal protective equipment (PPE), such as earplugs or earmuffs, to mitigate occupational noise exposure.
 - Conduct noise measurements during high noise emitting activities to ensure compliance with ambient noise quality standards.
 - Ensure that heavy machinery or any noise producing activities are prohibited after 8 PM till 7 AM and all-day during Fridays and any public and local holiday, unless an approval has been obtained from the local authorities.
- **Transportation and Delivery of Equipment:** Minimize unnecessary idling of trucks and machinery during loading and unloading to reduce noise emissions. Also, schedule equipment transportation and deliveries within regular daytime working hours.

III. Solid Waste

❖ **Risks:**

- **Generation of waste from Installation Works:** Activities such as flooring, tiling, painting, and equipment installation will generate solid waste, including construction debris, packaging materials, plastic, and metal scraps.
- **Random Dumping of Waste:** solid waste from this phase could be disposed of in random dumping sites, in open areas, or burnt.
- **Poor Housekeeping:** Poor housekeeping and temporary accumulation of construction debris and packaging in work areas, increasing slip, trip and fire hazards for workers.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the finishing works and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **Waste segregation and on-site storage:** Provide clearly marked and covered waste bins / containers throughout work areas, and segregate waste at source into at least: (i) construction and demolition debris, (ii) recyclables (metals, cardboard, plastics), and (iii) residual mixed waste. Prevent windblown litter by keeping lightweight packaging in bags or covered containers.
- **Random dumping of waste:** Provide clear instructions to contractors and workers on waste management procedures and explicitly prohibit random dumping or burning of waste through E&S induction and toolbox talks. Incorporate waste-management clauses into contractor agreements requiring adherence to national regulations on solid waste and construction and demolition waste.

- Site housekeeping: Conduct regular (at least daily) site clean-ups to remove discarded materials and keep floors, circulation routes, emergency exits and stairways free of debris. Designate temporary storage areas for construction waste away from access routes and ignition sources.
- Off-site transport and disposal: Coordinate with the municipality / Joint Services Council or licensed private collectors to ensure that all non-hazardous solid waste is transported to approved disposal or recovery facilities, and keep basic records (date, type of waste, approximate quantities, destination).

IV. Hazardous Materials and Waste

❖ Risks:

- Use and storage of hazardous materials: Potential risks associated with the temporary use and storage of hazardous substances such as paints, thinners, solvent-based adhesives, lubricants, cleaning agents and similar products during installation and finishing activities, including risks of fire, worker exposure and localized contamination if not properly stored and handled.
- Generation and disposal of hazardous waste: Risks related to the generation of hazardous waste such as used oil and lubricants, paint and solvent residues, contaminated rags and absorbents, spent cartridges and empty containers that still contain residual chemicals. Inappropriate handling, mixing with general solid waste, or disposal outside licensed facilities may lead to soil and water contamination and noncompliance with the Palestinian Hazardous Waste Management System No. 6 of 2021.
- Accidental spills and leaks: Potential accidental spills or leaks of hazardous materials during delivery, handling, storage or use, which may result in localized soil or water contamination, fire and explosion hazards, and short-term health risks for workers if not promptly contained, cleaned up and reported.

❖ Significance:

The spatial influence is moderate (2), the duration is limited to works carried during the finishing works and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Hazardous materials handling and storage: Establish clearly defined and secure areas for the temporary storage of hazardous materials (paints, solvents, adhesives, lubricants, cleaning agents). Store them in original, clearly labeled containers, with lids closed when not in use, and in secondary containment where leakage or spills could occur. Avoid storing incompatible substances together and keep hazardous materials away from floor drains and ignition sources.
- Hazardous waste segregation and disposal: Segregate hazardous waste (used oils, solvent residues, paint and adhesive containers, contaminated rags, and absorbents) from non-hazardous construction waste. Prohibit open dumping, burning or discharge to drains. Liaise with MoH and EQA on the disposal of hazardous waste in line with the Palestinian hazardous waste management system No. 6 of 2021 and use only licensed haulers and approved facilities for its transport and final treatment or disposal. Keep basic records of quantities, types of hazardous waste and dates of off-site transfer.
- Safe work practices, information, and PPE: Provide workers who handle hazardous materials with adequate PPE such as chemical-resistant gloves, goggles or face shields, respirators/masks where needed, safety shoes and protective clothing, in line with the relevant MSDSs. Ensure that Material Safety Data Sheets (MSDSs) for all hazardous products used on site are available, in Arabic where possible, and that workers are trained on safe handling, mixing, application and clean-up

procedures, including prohibitions on eating, drinking, or smoking in handling areas and requirements for hand-washing.

- Spill prevention and emergency response: Maintain good housekeeping in storage and work areas to minimize the risk of leaks and spills. Provide clearly marked spill kits and absorbent materials near storage and use areas, and train workers on their proper use. Any spills or leaks of hazardous materials are to be contained immediately, collected with suitable absorbents, and managed as hazardous waste.
- ERP: Integrate spill response, notification, and first-aid measures into the site Emergency Response Procedures (ERP), including emergency contact numbers and reporting lines.

V. Labor Rights and Working Conditions

❖ Risks:

- Noncompliance To Labor Rights: The Palestinian Labor Law (PLL) clearly defines working hours, leaves, wages, and benefits as well as Act No.4 of 2021 which is the latest decree setting the minimum wage limits in the Palestinian Territories. Nevertheless, the PLL and its suit of supporting decrees face enforcement challenges.
- Risk of Wages Below the Minimum Requirements: Contractors paying their workers' wages below the minimum requirements of Act No.4 of 2021 is expected especially when there are no contracts signed with the workers.
- Child Labor: civil works activities are classified as hazardous work and children under the age of 18 per the PLL are not permitted to partake in such a work environment.
- Insurance: a potential risk is contracted workers on site without a valid injury insurance policy in accordance with the PLL.
- Grievances: During the different phases of project implementation, concerns, complaints, and grievances are expected to arise among different types of project workers (i.e., direct and contracted). Such grievances are relevant to their labor rights and working conditions. The lack of an effective and transparent mechanism to voice such grievances and guarantee their review for resolution is an associated risk. Additional risks entailed include coercion and risks of retribution towards workers when they voice their grievances.
- Lack of Access to Resting Facilities, Washrooms, and Drinking Water: During this phase, contracted workers must be provided with access to resting areas, drinking water, and washroom facilities in line with Cabinet Decision No.15 of 2003.
- Medical Examination of Workers: In line with Cabinet Decisions No. 22 and 24 of 2003, workers should undergo an initial medical examination and follow-up medical examinations as required. Failure to apply these requirements can increase health risks, particularly for tasks involving chemical exposure or physically demanding work.

- ❖ **Significance**: The spatial influence is moderate (2), the duration is limited to works carried during the finishing works and installation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Contractual Obligations:
 - Ensure that all contracts with contractors and subcontractors explicitly state the need to adhere to labor laws, including age and wage requirements, working hours, and benefits.
 - Contractors are to submit their workers' contracts to the employer to ensure appropriate labor rights are included in the PLL. The contracts will include the workers' ID numbers (attached with copies of workers' ID), which will allow the employer to check the ages of the workers.

- Periodic monitoring shall also include a review of a sample of workers' pay slips to ensure adherence to Act No.4 of 2021.
- For direct workers ensure that all new workers are provided with contracts that clarify rights, responsibilities, wages, working hours, benefits, and other aspects as stipulated in the PLL.
- **Mandatory Insurance:**
 - Make it mandatory for contractors and subcontractors to provide valid injury insurance policies for all workers before commencing work.
 - Regularly verify the validity of insurance policies and ensure they are in line with the PLL.
 - All direct workers must be included in a valid injury policy.
- **Minimum Wage:** Ensure that contractors and suppliers have signed contracts with their workers with the minimum requirements of the PLL and Act No.4 of 2021 is implemented.
- **E&S Capacity:** Project Workers shall receive an E&S orientation training prior to the commencement of their activities covering the CoC, GM, OHS, ERP, and the ESMP overall.
- **Grievance Mechanism:** Contractors shall develop a Workers' Grievance Mechanism with appropriate uptake channels with supervision from the project owner and in accordance with the Project's Workers' GM. The Contractor's Workers' GM shall contain effective uptake channels and clearly defined resolution and review timelines with monthly reporting to be provided to the project owner.
- **Workers' E&S orientation and capacity:**
 - Provide E&S orientation training to all project workers prior to commencing activities, covering the Code of Conduct (CoC), workers' GM, OHS measures, ERP, and relevant ESMP requirements.
 - Keep attendance sheets and training materials on file for monitoring and reporting.
- **Resting facilities, washrooms and drinking water:**
 - Ensure that all workers, including contracted workers, have access to adequate resting areas, gender-appropriate washrooms and safe drinking water in line with Cabinet Decision No.15 of 2003.
 - Monitor the cleanliness, functionality, and availability of these facilities throughout the preparation and installation phase.
- **Medical examinations:** Apply the requirements of Cabinet Decisions No.22 and 24 of 2003 by ensuring that workers undergo pre-employment medical examinations and follow-up examinations as required, especially for those exposed to chemicals or physically demanding work.

VI. Life and Fire Safety Hazards and Risks:

❖ Risks:

- **Electrical connections and installation of production lines:** these installations include connection works and services. Leaving wires exposed, or inadequate load connections could be a source fire hazard.
- **Machinery overheating/ malfunctioning:** improper installation and inadequate use of machinery per manufacturer specifications could lead to overheating or faults leading to potential fires.
- **Smoking near storage and waste collection areas:** especially packaging waste which consists of cardboard and nylon wrapping that could be a fire hazard.
- **Accumulation of packaging waste:** The accumulation of waste, especially packaging, plastics, or carton under the sun for long time could constitute a fire hazard.
- **Inadequate life and fire safety arrangements during installation:** During finishing works, there is a risk that fire detection and alarm systems, emergency lighting, exit signage and portable fire extinguishers are incomplete, not yet commissioned or not readily accessible to workers.

- Obstructed emergency exits and evacuation routes: Temporary storage of materials, tools, scaffolding or waste in front of exit doors, corridors and staircases may obstruct evacuation, increase the risk of injuries during an emergency and hinder access for first responders.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the finishing works and installation phase (1), the intensity of foreseen negative impacts is Moderate (2), and the occurrence is low but possible (1). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- Electrical safety during installation: Ensure proper wiring, configuration, and installation of all electrical systems in accordance with manufacturer instructions, local electrical codes and fire safety requirements. All electrical works, including temporary power connections, shall be carried out and supervised by qualified electricians. Conduct basic testing (insulation, earthing, load checks) before energizing equipment or production lines.
- Licensing and Compliance: Ensure adhering to the civil defense requirements and codes during works, ensure that no operations can be initiated prior to gaining the Civil Defense permit.
- Mechanical and equipment installation: Require that machinery is installed and commissioned strictly in line with manufacturer specifications, including provision of adequate ventilation clearances and access around equipment. Avoid prolonged trial runs or operation of machinery until cooling, ventilation and protection systems are in place and verified.
- Hot works control: For any welding, cutting, or grinding during installation, apply a simple hot-work control procedure: remove combustible materials from the work area where feasible, keep suitable fire extinguishers nearby, and maintain a short fire-watch period after completion of hot works to detect any smoldering.
- Fire protection and emergency preparedness: Provide adequate portable fire extinguishers of appropriate types (for example dry-powder and CO₂ for electrical fires) on each floor and near high-risk areas such as electrical panels, equipment rooms and temporary material storage. Ensure that workers receive basic induction on fire safety, extinguisher use and the site Emergency Response Plan, including evacuation routes and assembly points.
- Workplace design: Ensure that near granulators and shredders the flooring and walls are non-stick to minimize the amount of dust that could settle.
- Smoking control: Prohibit smoking inside buildings, in storage areas and near waste collection points. Designate a smoking area outside the building, away from packaging waste, chemicals, and other flammable materials, and display clear no-smoking and smoking-area signage.
- Combustible waste and housekeeping: Implement daily housekeeping practices; collect packaging materials, plastics, cardboard and other combustible waste in designated containers away from ignition sources and arrange for their regular removal through the municipal or licensed solid-waste system. Do not allow packaging waste to accumulate in yards or under direct sun adjacent to the building.
- Life and fire safety arrangements during works: As fire alarm, detection, emergency lighting and exit-signage systems are installed, ensure they are progressively kept in service throughout the works phase where practicable. Keep fire doors operable and not wedged open, and do not cover or disable detectors once installed.
- Emergency exits and evacuation routes: Clearly mark emergency exits and escape routes and keep them free of stored materials, tools, scaffolding and waste at all times. Maintain unobstructed access for emergency vehicles to the main entrances of the facility, and assign a focal person to carry out routine checks of exits and escape routes during the finishing and installation works.

VII. Community Health and Safety:

❖ Risks:

- Inadequate Stakeholder Engagement: Potential risk arising from insufficient communication or ineffective stakeholder consultation throughout the preparation and installation phase.
- Risks from Potential Fires and Emergency Situations: Inadequate preparedness for fire safety and other emergencies could impact community safety.

❖ Significance:

The spatial influence is low (1), the duration is limited to works carried during the Finishing Works and installation phase (1), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ Mitigation Measures:

- Stakeholder Engagement and Information Disclosure:
 - Maintain regular stakeholder engagement with nearby residents, local authorities and other interested parties throughout the planning, finishing works and installation, and subsequent operational phases, in line with ESS10 and the project SEP.
 - Provide prior notice to neighboring land users and businesses of activities that may cause short-term disturbance, such as deliveries of large equipment, or noisy works.
 - Maintain records and logs of stakeholder engagement activities, documenting participants, issues raised, and responses and follow-up actions.
 - Disclose project information, including key E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in Arabic, using accessible formats and channels (for example notice boards at the site entrance, municipal announcements or social media).
 - Ensure communities are aware of the company's external grievance mechanism, including uptake channels and response timelines.
- Fire and Emergency Preparedness:
 - Implement the measures in point VI.

VIII. Occupational Health and Safety:

❖ Risks:

- Physical and electrical hazards during installation: Workers may face physical risks from manual handling, use of hand and power tools, working at height on ladders and platforms, and interaction with new machinery and installation equipment. These activities could result in sprains and strains, cuts, being struck by moving objects, or slips, trips, and falls. Electrical works elevate the risk of shocks or burns if circuits are not properly isolated, grounded or tested.
- Capacity and awareness: Contractors and their workers may lack knowledge of the project OHS procedures, safe work method statements and permit to work requirements, increasing the likelihood of unsafe practices and incidents.
- Personal protective equipment (PPE): There is a risk that contractors do not provide sufficient or adequate PPE, or that workers do not use PPE correctly or consistently, which could increase the severity of injuries and occupational exposures.
- Inadequate Emergency Preparedness and Response: Potential risk associated with insufficient preparedness or absence of clear emergency response measures (e.g., first aid, evacuation procedures, and response to electrical shocks).

❖ Significance:

The spatial influence is limited (1) probability of OHS incidents is Moderate (2), the duration is limited to works carried out during the finishing works and installation phase (2), the intensity of foreseen negative impacts is moderate (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- OHS planning and responsibilities:
 - Require all contractors and suppliers involved in finishing works and equipment installation to implement the project OHS Plan consistent with Al Jebrini's corporate OHS procedures, Palestinian OHS legislation, the WB General EHSs and the Metal, Plastic and Rubber Products EHSs.
 - Appoint a competent OHS focal point from each contractor and supplier to supervise day to day implementation of the OHS Plan and coordinate with Al Jebrini's OHS Supervisor.
- Training, induction and toolbox talks:
 - Provide all workers with OHS orientation before starting work, covering site rules, key hazards, PPE requirements, emergency response, and workers' grievance mechanism.
 - Conduct regular toolbox talks on specific risks such as manual handling, slips and trips, electrical safety, work at height and housekeeping, and keep attendance records.
- Safe work practices during installation:
 - Ensure that all electrical installation, testing and energization works are carried out only by qualified electricians, under a permit to work system that includes isolation, lock out and testing before re-energizing.
 - Provide suitable and inspected access equipment for work at height (ladders, scaffolds, platforms) and prohibit unsafe practices such as working from improvised platforms.
 - Organize storage of materials, equipment and tools so that walkways, stairways and emergency exits remain unobstructed and slip, trip and fall risks are minimized.
 - Apply safe manual handling practices and use mechanical aids (trolleys, pallet jacks, forklifts) where practicable for heavy or bulky items.
- PPE provision and compliance:
 - Require contractors to provide workers, at no cost, with adequate PPE appropriate to their tasks (for example safety shoes, helmets, high visibility vests, gloves, eye and hearing protection, and respiratory protection where needed) and to replace damaged PPE.
 - Carry out regular inspections to verify availability, condition and correct use of PPE and enforce compliance through corrective actions where noncompliance is observed.
- Emergency preparedness and first aid:
 - Integrate the facility's ERP into the OHS Plan and communicate it to all workers, including evacuation routes, assembly points, alarms, and responsibilities.
 - Provide adequate and accessible first aid kits on site and ensure that a sufficient number of trained first aiders are present during working hours.
 - Coordinate with the nearest medical facility or hospital, display emergency contact numbers clearly at the workplace and ensure that transport is available for medical evacuation when needed.
- Incident reporting and continual improvement:
 - Require contractors to record, investigate and report all accidents, near misses and unsafe conditions, share lessons learned with Al Jebrini, and implement corrective measures to prevent recurrence.
- Compliance with international standards:
 - Ensure that OHS management during the preparation and installation phase is consistent with ESS2 and ESS4 and with Good International Industry Practice as reflected in the World Bank Group EHSs.

7.3.2.3. OPERATION AND MAINTENANCE PHASE

I. Impacts on Air Quality:

❖ Risks:

- **Fumes from production lines operations:** the production lines while utilizing thermoplastic polymers, toxic fumes might result from the mixture under heating³⁴. During shaping operations for nonreactive plastics (i.e., PET), the base polymers are stable well beyond the required processing temperatures with few exceptions. During shaping, however, water vapor, low boiling point additives, and monomer trapped in the polymer may be released. When PP is heating above the recommended temperatures, Aldehydes, Butane, and alkenes may be detected in the fumes. These could cause irritation to the eyes, nose, throat, coughing among other health concerns.
- **Emissions from production processes:** Despite the production line being of latest technology and hence high efficiency and conformance to standards, there are still risks in terms of low capacity and knowledge to these machines, hence potential risks could arise in terms of setting of temperatures and hence release of fumes and VOCs.
- **Ventilation system efficiency:** The need to maintain high indoor air quality requires efficient operation of ventilation systems, which may be challenged during peak production times or if maintenance is not kept up to date.
- **Maintenance and repair activities:** Maintenance and repair activities can involve the use of solvents, adhesives, and other materials that may emit VOCs, as well as the generation of dust and particulate matter from mechanical work.
- **Emissions from vehicles and internal logistics:** The movement of trucks bringing raw materials and collecting finished products, as well as forklifts and other internal transport vehicles, contributes to local emissions of exhaust pollutants (for example NOx, CO, and particulate matter) at the factory yard and access roads.

❖ Significance:

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- **Air Quality Measurements:** Conduct periodic workplace and, where relevant, ambient air quality measurements (with a focus on fumes and VOCs in the production hall) to verify compliance with Palestinian ambient air quality standards and applicable occupational exposure limits.
- **Operator training and SOPs:**
 - Provide comprehensive training and refresher sessions for operators and maintenance staff on safe operation of molding and ISBM machines, correct temperature and pressure settings, safe handling of resins and additives, and response procedures in case of abnormal odors, visible fumes, or equipment malfunction.
 - Suppliers to provide Al Jebrini with written standard operating procedures in Arabic at the workstations.
 - Supplier to provide Al Jebrini company staff with training on machinery operation.
- **Preventive maintenance of machinery:** Prepare and implement a preventive maintenance schedule for production and utility equipment (molding machines, ISBM line, chillers, compressors, HVAC),

³⁴ EHS Guidelines for metal, plastics, and rubber products manufacturing, IFC : <https://www.ifc.org/wps/wcm/connect/c83d65a2-7332-40bd-84d2-6e46d8ac9632/Final%2B-%2BMetal%252C%2BPlastic%252C%2BAnd%2BRubber%2BProducts%2BMnfg.pdf?MOD=AJPERES&CID=nPthci1&id=1323153287593>

including inspection of seals, heaters, cooling circuits, and exhaust points to reduce fugitive emissions and ensure energy-efficient operation.

- **Temperature Controls:** Implement strict temperature control measures to ensure that polymers are not heated beyond recommended temperatures, minimizing the release of aldehydes, butane, and alkenes.
- **Ventilation and fume capture:**
 - Ensure that the production areas are equipped with a suitable HVAC system to maintain good indoor air quality and comfortable working conditions.
 - Install and maintain local exhaust ventilation (LEV) or hoods at high-temperature processing points and other locations where fumes are generated, and ensure exhaust ducts discharge safely outside the work area.
 - Where material handling or any granulation produces noticeable dust, fit exhausts with appropriate particulate control (for example cyclone or bag filter) and keep ductwork and filters in good condition.
 - Explore options depending on air quality tests for VOCs and fumes that could include; Installation of local exhaust extraction systems and activated carbon adsorbers; Installation of recuperative / regenerative thermal oxidizers, catalytic / regenerative catalytic oxidizers, condensers or biofilters. The engineering firm should advise on the most appropriate solution based on quality tests.
- **Evaluation of advanced controls where needed:** If air quality monitoring shows recurrent exceedance of applicable limits, commission an engineering assessment to identify technically and economically feasible options for further control of fumes and VOCs (for example additional LEV, activated-carbon polishing units or other suitable abatement systems) and implement the selected measures.
- **Safe materials and maintenance practices:** Use low-VOC paints, solvents and adhesives for maintenance wherever technically feasible. Carry out solvent-using activities only in well-ventilated areas or under dedicated extraction systems, in line with the hazardous materials and waste section of this ESMP.
- **Worker protection:** Provide workers with appropriate PPE for their tasks, including respirators or masks suitable for nuisance fumes or particulate where needed, safety goggles, gloves and protective clothing. Enforce proper use, cleaning and replacement of PPE through supervision and toolbox talks, and base PPE specifications on SDS recommendations.
- **Vehicle and internal logistics emissions:** Maintain trucks, forklifts and other internal transport vehicles in good mechanical condition and compliant with national inspection requirements; avoid unnecessary idling, organize loading and unloading to minimize queuing, and designate internal traffic routes to reduce congestion and localized exhaust build-up near doors and air intakes.

II. Noise

❖ Risks:

- **High noise levels from operations:** Continuous operation of molding machines, compressors, cooling units and internal logistics equipment may generate elevated noise levels in production areas. If not properly controlled, these may exceed national and GIIP occupational noise exposure limits and could also be perceptible at the site boundary, potentially affecting nearby receptors.
- **Production line noise peaks:** The air compressor, pressure molding cycles and other process equipment can result in intermittent high noise peaks and vibration, increasing the risk of hearing damage and communication difficulties for workers.
- **Vehicular noise:** The movement of trucks delivering raw materials and collecting finished products, as well as forklifts and other internal transport vehicles, may generate noise, particularly if vehicles are unmaintained, overloaded or operated at inappropriate speeds.

❖ **Significance:**

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Noise level management at source: Implement engineering and administrative controls to reduce noise where it is generated, including routine preventive maintenance of compressors, molding machines, fans and internal logistics equipment, installation of silencers and mufflers where feasible, and use of noise dampening materials around high-noise equipment.
- Acoustic insulation and layout: Install acoustic barriers or insulation around high-noise areas, particularly near the air compressor and thermoforming line, and locate the noisiest equipment away from offices and the site boundary as much as practicable.
- Worker protection and hearing conservation: Provide suitable hearing protection (earplugs or earmuffs) to all workers exposed to high noise, post mandatory hearing-protection signage in high-noise areas, and enforce proper use as part of a simple hearing conservation program in line with GIIP and the Minister of Labor Decision No. 4 of 2005 on noise exposure in the workplace.
- Monitoring and compliance with limits: Carry out routine noise measurements in representative production areas and at the site boundary, weekly during the first three months of operation and at least quarterly thereafter or whenever significant process changes occur. Compare results with the limits in the Minister of Labor Decision No. 4 of 2005 and Palestinian Standard PS 840-2005 for ambient noise; identify and implement corrective actions where levels approach or exceed permissible values.
- Use optimization and operational controls: Optimize the operating schedule of high-noise equipment so that machines are turned off or placed in low-load mode when idle, and avoid simultaneous operation of multiple high-noise units when not required.
- Maintenance of vehicles and mobile equipment: Ensure continuous preventive maintenance of trucks, forklifts and other vehicles in accordance with manufacturer recommendations, with attention to exhaust systems, brakes and suspension to avoid unnecessary noise and vibration.

III. Solid Waste

❖ **Risks:**

- Production scrap, spills and defective products: The PET preform and closure lines are designed for high efficiency, but start-up/shut-down, mold changes and process disturbances will still generate off-spec preforms, caps and trimmings. Spilled PET resin or preforms may also occur during material handling. If not properly collected, reused or recycled, these become solid waste and may accumulate in the factory or yard.
- Segregation and management of process versus municipal waste: The company is expected to segregate process waste (for example PET scrap, nylon strapping, defective products, waste cartons) from municipal / domestic waste. If segregation is not consistently applied, different waste streams may be mixed, reducing opportunities for recycling and increasing the risk that recyclable plastics are disposed of as mixed solid waste or sent to uncontrolled dumpsites.
- General factory solid waste: Operations will generate packaging waste (wooden pallets, shrink wrap, cardboard), maintenance waste and domestic waste from staff facilities. If storage areas are poorly managed or waste is not collected regularly, this may lead to littering, visual impacts, attraction of pests and increased fire risk.

❖ **Significance:**

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Production scrap, spills and defective products:
 - Adhere to the standard operating procedures (SOPs) for start-up, shut-down and mold changes to minimize off-spec preforms, caps and trimmings as provided by the supplier and manufacturer recommendations.
 - Collect clean PET scrap, off-spec preforms and caps in clearly labeled containers and, where technically and hygienically acceptable, re-introduce them into the process or send them to licensed plastic recyclers under documented arrangements.
 - Prohibit open burning or random dumping of any plastic scrap, defective products or other solid waste.
- Segregation and management of process versus municipal waste:
 - Provide color-coded and clearly labeled containers for: (i) PET process scrap and off-spec products, (ii) packaging materials such as cardboard, shrink-wrap and nylon strapping, and (iii) municipal / domestic waste from offices and staff facilities.
 - Designate a paved, covered storage area for segregated process waste, away from storm-water drains and ignition sources, and keep it orderly and free of loose litter.
- General factory solid waste and housekeeping:
 - Implement daily housekeeping rounds in production, storage and yard areas to collect and remove waste, ensuring that walkways, exits and equipment access remain clear at all times.
 - Reuse packaging materials such as pallets and crates where feasible, and establish arrangements with licensed recyclers for recovery of cardboard, shrink-wrap and other recyclable materials.
 - Agree with the Joint Services Council / municipality on adequate on-site containers and collection frequency for municipal solid waste, and ensure that all municipal waste is transported only to authorized disposal sites in line with applicable Palestinian regulations and municipal bylaws.
 - Maintain a simple waste register that records main waste streams (process scrap, packaging, municipal waste), quantities where practicable, and destinations (reused, recycled, disposed), and review this periodically to identify further opportunities for waste minimization and recycling.

IV. Hazardous Material and Waste

❖ **Risks:**

- Storage and handling of oils, lubricants and chemicals: Oils and lubricants are required for routine maintenance of the production lines, along with small quantities of cleaning agents and other maintenance chemicals. If these materials are not stored in appropriate containers, clearly labeled and placed in designated, contained areas, there is a risk of leaks, fire hazards and occupational exposure.
- Spills and leaks during routine maintenance: Small but repeated spills can occur during lubrication, oil changes, cleaning and other maintenance activities. If these spills are not promptly contained and cleaned up, they may contaminate floors, the yard, stormwater drains or the septic system and create slip hazards for workers.
- Empty containers and packaging of hazardous materials: Empty or partially empty containers and barrels of oils, lubricants and cleaning agents may still contain hazardous residues. If they are not

clearly labeled, stored in a designated area and disposed of through authorized channels, they may be reused inappropriately or sent to uncontrolled dumpsites, leading to soil and water contamination and risks to workers and the community.

- **Hazardous maintenance waste:** Regular maintenance and repairs generate waste such as used oils, oily rags, used filters, contaminated spare parts and possibly spent batteries or fluorescent tubes. If these wastes are stored without secondary containment or disposed of together with municipal solid waste, there is a risk of localized contamination and non-compliance with the Palestinian hazardous waste management system.

❖ **Significance:**

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **Hazardous materials inventory and purchasing:** Maintain an up-to-date register of all oils, lubricants, cleaning agents and other chemicals used on site, indicating quantities and storage locations. Avoid stockpiling and purchase only quantities needed for a reasonable operating period.
- **Safe storage and containment:**
 - Store oils, lubricants, cleaning agents and other hazardous materials in a dedicated, ventilated storage area with an impermeable floor and secondary containment (for example bunds or drip trays) sized to hold at least the volume of the largest container.
 - Keep containers closed when not in use and return them to the storage area immediately after use.
 - Segregate incompatible materials and keep hazardous materials away from ignition sources and floor drains.
- **Labelling and Safety Data Sheets (SDS):**
 - Clearly label all primary and secondary containers with the chemical name, hazards and basic handling instructions.
 - Maintain up-to-date SDS for all hazardous materials on site and ensure they are accessible in storage areas and at points of use; brief workers on key hazards and first-aid measures.
- **Spill prevention and response:**
 - Provide appropriate spill kits (absorbents, tools and waste bags) in storage areas and near points of use, and train workers on their use.
 - Integrate simple spill response procedures in the ERP (stop the source, contain, clean up, report) and keep records of significant spills and corrective actions.
- **Management of hazardous waste, including empty containers:**
 - Collect used oils, oily rags, spent filters, contaminated absorbents and empty chemical containers in clearly labelled, covered containers placed on impermeable surfaces with secondary containment.
 - Treat empty containers of oils and chemicals as hazardous waste; prohibit any re-use for water, food or non-industrial purposes.
 - Ensure that hazardous waste is transported and disposed of only through licensed carriers and authorized facilities, in coordination with EQA and other competent authorities and in line with the Palestinian Hazardous Waste Management System No. 6 of 2021. Maintain records/manifests of quantities and destinations.
- **Training and PPE:**

- Provide task-specific training to maintenance and cleaning staff on safe handling, storage and disposal of oils, lubricants and chemicals, and on spill response procedures.
- Provide and enforce the use of appropriate PPE (for example coveralls, chemical-resistant gloves, safety shoes, goggles/face shields and respiratory protection where required) in line with SDS and manufacturer specifications.

V. Surface Runoff and Stormwater

❖ Risks:

- Runoff carrying plastic materials and dust: Storm water flowing across outdoor areas where plastic pellets, flakes, scrap, packaging or dust accumulate may transport these materials to drains, wadis or neighboring plots, contributing to litter and microplastic pollution.
- Runoff contaminated with oils, lubricants and chemicals: Leaks or spills from hydraulic systems, compressors, chillers, generators, fuel storage or chemical storage areas can be mobilized by rainfall and carried into soil, storm drains or surface water.
- Flooding and ponding around buildings and equipment: Inadequate storm water drainage capacity or blocked drains may lead to water accumulation around the factory, loading bays and external equipment, with associated safety risks and potential for water ingress into production areas.
- Sedimentation and erosion: Concentrated flows at downspouts, outlet points and unpaved areas can cause localized erosion, sediment transport and damage to paved surfaces or neighboring land.

❖ Significance:

The spatial influence is moderate (2), the duration is long-term over the O&M phase (3), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Storm water and site drainage planning:
 - Develop and maintain a drainage layout for roofs, paved yards, loading bays, waste storage and parking / maneuvering areas, showing all storm water inlets and discharge points.
 - Ensure roof runoff is collected and discharged away from chemical storage, generator and fuel areas.
 - Control of plastic pellets and scrap:
 - Implement strict housekeeping to prevent pellets, flakes and plastic scrap from accumulating outdoors; use covered containers and designated storage areas on hard standing.
 - Install grates, screens or baskets on storm drain inlets in areas where plastic materials are handled, and clean these regularly to capture any pellets or scrap before they enter the drainage system.
- Segregation and protection of contaminated areas:
 - Store oils, lubricants, solvents and chemical additives in bunded, roofed areas with impermeable flooring; design drainage so that any spills cannot reach storm water inlets.
 - Avoid refueling, oil changes or washing of equipment on bare soil; use designated areas with hard standing and drainage to controlled collection points.
- Flooding and erosion control:
 - Size gutters, drains and culverts for local design storms; regularly inspect and clean them to prevent blockage by leaves, plastics or sediments.

- Stabilize outlet points and unpaved areas subjected to concentrated flows through rip-rap, concrete splash pads or vegetated swales to reduce erosion and sediment transport.
- Inspection and monitoring:
 - Include storm water and runoff management in regular E&S inspections, checking for presence of plastic pellets around drains, evidence of sheens or staining, erosion features and standing water.
 - Record inspection findings and corrective actions; investigate and address any external complaints related to plastics or runoff from the facility.

VI. Energy Use and Utilities

❖ Risks:

- High electricity demand and associated GHG emissions: Injection molding, ISBM, chillers, compressors, ventilation and lighting result in high, continuous electricity use. If not efficiently managed, this increases operating costs, GHG emissions linked to grid electricity and diesel backup, and pressure on the local electricity network.
- Inefficient operation of utilities: Poorly maintained chillers, cooling circuits, air compressors and HVAC systems can lead to excessive energy use, overheating of equipment, reduced reliability and higher noise levels.
- Diesel generator use: Extended or unnecessary running of backup generators increases local emissions (NO_x, PM, CO, SO₂) and noise, and generates waste oils and filters that require proper management.
- Sub-optimal design of compressed-air and cooling systems: Air leaks, over-pressurization or open blowing, and open cooling loops may increase both energy and water consumption and can affect process stability.

❖ Significance:

The spatial influence is moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is likely to possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Energy management and monitoring: Install sub-metering where practicable for major consumers (molding lines, ISBM, compressors, chillers, HVAC) and periodically review specific energy consumption (kWh per ton of product) against internal targets and reference values from GIIP.
- Efficient equipment and operation:
 - Select and operate molding machines, compressors, pumps and fans with high-efficiency motors and, where feasible, variable-frequency drives to match load to demand.
 - Maintain correct settings (temperatures, pressures, cycle times) for all molding and cooling equipment; avoid excessive residence times and unnecessary reheating of polymers.
 - Ensure adequate thermal insulation on hot lines, molds and, where relevant, chilled-water piping to minimize heat gains and losses.
- Compressed-air and cooling systems:
 - Design compressed-air distribution to minimize pressure drops and isolate areas that do not require high pressure; regularly inspect for and repair leaks, and eliminate unnecessary use of compressed air for cleaning or cooling.
 - Use closed-loop cooling systems for machines and molds as far as practicable, with appropriate water treatment to prevent scaling and corrosion, and regularly maintain cooling towers, chillers and heat exchangers.
- Integration with renewable and low-carbon energy sources:

- Prioritize supply of the plastic factory's base loads from the rooftop PV system and biogas-based generation within the constraints of the microgrid, in coordination with the dairy and farm operations, to reduce reliance on grid electricity and diesel.
- Periodically review the load-sharing strategy between PV, biogas, grid and diesel backup to optimize GHG reductions while maintaining reliability.
- Control of diesel generator use:
 - Restrict generator operation to actual grid outages or testing; avoid non-essential running.
 - Implement preventive maintenance for generators (engines, exhaust, filters) and manage waste oils and filters under the hazardous waste procedures.

VII. Labor Rights and Working Conditions

❖ Risks:

- Noncompliance with labor rights: During routine operations, there is a continuing risk that provisions of the PLL and related decrees on working hours, overtime, leave, wages, benefits, and termination are not fully applied to all categories of workers (direct and contracted).
- Risk of wages below minimum requirements: There is a risk that some workers are employed without written contracts or under arrangements that do not comply with Act No. 4 of 2021 on minimum wage, especially for low-skilled or casual positions.
- Insurance coverage gaps: Some workers may not be covered by valid work-injury insurance in accordance with PLL requirements throughout the operation phase (for example, new hires, temporary workers, or night-shift staff).
- Grievances and workers' voice: If the workers' grievance mechanism is not well communicated, trusted, and actively used, concerns related to labor rights, discrimination, harassment, or working conditions may go unreported and unresolved, increasing the risk of disputes and labor unrest.
- Workers' E&S capacity and awareness: Workers may lack adequate knowledge of their rights and obligations, key environmental and social procedures (including OHS, GM, ERP and Codes of Conduct), and available channels to report concerns, which can undermine safe and fair working conditions.
- Medical examination of workers: In line with Cabinet Decisions No. 22 and 24 of 2003, workers are required to undergo an initial medical examination and periodic follow-up examinations. Failure to implement and document these examinations can increase health risks and may result in undetected work-related illnesses, particularly for workers exposed to noise, heat, chemicals, or shift work.

❖ Significance:

The spatial influence is moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Employment terms and conditions
 - Ensure that every worker has a written employment contract in Arabic that clearly states rights, duties, wages, working hours, overtime arrangements, leave, benefits and termination conditions in line with the Palestinian Labor Law and the minimum wage requirements of Act No. 4 of 2021.
 - Maintain individual personnel files including signed contracts and copies of IDs, and verify workers' age to prevent employment of workers under 18.
- Wages and working hours

- Maintain an accurate payroll system that records hours worked, overtime, deductions and net pay.
- Provide workers with pay slips that show how wages and overtime are calculated.
- Conduct periodic checks of payroll and working hours to confirm compliance with the PLL and the minimum wage decree, and rectify any identified gaps without delay.
- Insurance coverage
 - Ensure that all workers are covered by valid injury insurance policies before starting work, in line with the PLL.
 - Keep copies of insurance policies and evidence of premium payments on file and update them as contracts are renewed.
- Code of Conduct: Implement and adopt the Code of Conduct (CoC). The CoC shall contain a demarcation of labor rights, responsibilities and GBV related measures that are further discussed below. The code of conduct to be used for this project is the one recommended by the F4JII, available in [Annex I](#).
- Medical examinations
 - Arrange initial medical examinations for all workers prior to or at the time of hiring, in line with Cabinet Decisions No. 22 and 24 of 2003.
 - Ensure follow-up medical examinations at least every two years for this type of industry, and keep confidential medical records and follow-up actions.
- Workers' information, E&S capacity and training
 - Provide induction training to all workers at hiring and refresher training at least annually on: labor rights and obligations, the Code of Conduct, OHS requirements, emergency response procedures, waste management practices, and the project grievance mechanism.
 - Record attendance and topics covered in training logs and ensure that new or transferred workers receive induction before starting their tasks.
- Workers' Grievance Mechanism
 - Maintain a Workers' Grievance Mechanism that is accessible, confidential, and allows for anonymous complaints, including GBV/SEA/SH related grievances, with clear non-retaliation provisions and referral pathways as set out in [Annex III](#).
 - Define and implement clear timelines for acknowledgement, review and resolution of grievances, and keep a grievance log that records issues raised, actions taken and closure status.
 - Periodically inform workers about the GM and how to use it through meetings, notice boards and induction sessions.
- Fair and transparent recruitment and employment
 - Conduct recruitment in a transparent manner, including public vacancy announcements where feasible, shortlisting and selection based on merit and objective criteria.
 - Document the recruitment process, including applications received, evaluation and scoring sheets, and final selection decisions, so they are available in case of audits or grievances.
 - Ensure that employment decisions are free from discrimination based on gender, disability, social or economic status, or other non-job-related characteristics.

VIII. Gender-Based Violence:

❖ Risks:

- GBV (SEA/ SH): women workers may be exploited or abused in the workplace. The abuse could take multiple forms either in their labor rights, being paid less than their male counterparts as well as the risk of sexual exploitation and abuse.

- **Exclusion:** Women could be excluded from promotions, workplace development, and having leading roles in their workplace.
- **Potential Retaliation or Reprisals:** Risk of retaliation against women workers who report incidents of GBV, discouraging reporting and exacerbating vulnerabilities.
- **Weak GBV-sensitive mechanisms and potential retaliation:** Risk that Codes of Conduct and grievance mechanisms are not GBV-sensitive, confidential or survivor-centered, discouraging reporting of incidents. Workers who report GBV may face stigma, retaliation or reprisals from supervisors or colleagues.

❖ **Significance:**

The spatial influence is low (1), the duration is limited to works carried during the O&M phase (3), the intensity of foreseen negative impacts is substantial (2), and the occurrence is low (1). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **GBV-sensitive Workers' Grievance and Referral Mechanism:** Ensure that the workers' GM includes confidential, survivor-centered procedures for GBV/SEA/SH cases, with the option for anonymous reporting and for bypassing the direct supervisor. GBV-related complaints should be handled by trained focal points, with clear non-retaliation guarantees and referral pathways to specialized GBV service providers, as detailed in [Annex III](#).
- **Code of Conduct (CoC):** Implement and enforce a written CoC that explicitly prohibits all forms of GBV, including SEA/SH, harassment and discrimination. The CoC shall outline expected behavior, sanctions for non-compliance (up to and including dismissal), and non-retaliation commitments. All workers, supervisors and managers shall review and sign the CoC on hiring and at renewal, and copies shall be displayed in the workplace in Arabic.
- **Capacity Building and Training:** Integrate CoC provisions and GBV mitigation measures into mandatory induction and periodic refresher trainings for all workers and supervisors. Training shall cover basic GBV/SEA/SH concepts, unacceptable behaviors, by-stander responsibilities, confidentiality, survivor-centered response, and the workers' GM and referral options. Attendance and content of trainings shall be documented.
- **Female-Workers' Specific Information and Support:** Provide dedicated sessions for female workers on the GM and GBV referral mechanisms, including available internal focal points and external service providers. Ensure that female workers can report concerns to a trained female focal point if they wish and that reporting does not affect their employment status, performance evaluations or promotion prospects.
- **Fair and Non-Discriminatory Employment and Career Management:** Ensure that recruitment, remuneration, performance appraisal, promotion, training and disciplinary actions are based on merit, skills and objective criteria only, without discrimination based on gender, marital status or other non-job-related characteristics. Periodically review sex-disaggregated HR data (wages, positions, promotions, training access) to identify and address any gender gaps.

IX. Life and Fire Safety Hazards and Risks:

❖ **Risks:**

- **Machinery overheating/ malfunctioning:** inadequate use of machinery beyond working limits per manufacturer specifications or lack of maintenance could lead to overheating or faults leading to potential fires

- Electrical faults in distribution systems: Overloaded circuits, damaged cables, poorly maintained panels or unsafe temporary connections can cause short circuits, overheating and potential fire outbreaks in production areas, warehouses or offices.
- Smoking near storage and waste collection areas: especially packaging waste which consists of cardboard and nylon wrapping that could be a fire hazard.
- Accumulation and storage of combustible waste: The accumulation of packaging waste (cardboard, shrink wrap, nylon strapping) or PET scrap in production, yard or roof areas, especially under direct sun or near ignition sources, can constitute a significant fire load and facilitate rapid fire spread.
- Polymeric dust: Granulators produce fine dust that is often combustible. If suspended in air in high concentrations it could ignite. High concentration of polymeric dusts may be generated close to the granulator when foamed rigid plastics are treated, and whenever coarse and fine granules are mechanically separated by sieving. Fine powders may accumulate on vertical walls, as well as on horizontal surfaces beyond the reach of conventional housekeeping. Although some polymeric dust is always formed, this becomes a hazard only if the materials are rigid.
- Inadequate operation and maintenance of life and fire safety systems: Failure to properly operate, test and maintain fire detection and alarm systems, emergency lighting, exit signage, fire extinguishers and hose reels may delay detection and response during an emergency and increase potential life safety impacts.
- Obstructed emergency exits and evacuation routes: Temporary storage of pallets, packaging, finished goods, tools or waste in front of exit doors, corridors and staircases may obstruct evacuation routes, increase the risk of injuries during an emergency and hinder access for Civil Defense and first responders.

❖ **Significance**

The spatial influence is moderate (2), the duration extends across the O&M phase (3), the intensity of potential impacts is substantial given the possibility of serious injuries and asset loss (3), while the occurrence is low but possible (1) when controls are applied. Consequently, the overall life and fire safety risk during operation is rated as **Moderate**.

❖ **Mitigation Measures:**

- Life and fire safety management
 - Implement the ERP to cover fire scenarios including clear roles, evacuation routes, assembly points, and coordination with Civil Defense.
 - Carry out at least annual fire drills for all shifts, record lessons learned, and implement corrective actions.
- Machinery overheating and malfunction
 - Operate all production machinery strictly within manufacturer specifications for temperature, pressure, throughput and duty cycle; prohibit overriding of interlocks or safety devices.
 - Implement a preventive maintenance program for molding, granulation and ancillary equipment, including regular inspection of electrical connections, motors, bearings and cooling systems to prevent overheating.
 - Ensure adequate ventilation around heat-generating equipment and keep cooling water and compressed air systems in good working order.
 - Provide automatic overload and over-temperature protection where available and ensure that emergency stop buttons are clearly marked and accessible.
- Control of smoking and ignition sources
 - Enforce a strict No Smoking policy inside buildings and within designated distances of storage, production and waste collection areas; post clear signs in Arabic and any other relevant language.

- Provide a clearly marked smoking area away from combustible materials, equipped with metal ashtrays and regular cleaning, and apply disciplinary measures for violations.
- Management of packaging and other combustible waste: Implement routine housekeeping in production and yard areas so that cardboard, shrink wrap, nylon strapping and other packaging are collected frequently and do not accumulate near machinery, electrical panels or exits.
- Prevention and control of polymeric dust hazards
 - Equip granulators and other dust-generating equipment with local exhaust ventilation and dust collection systems (for example cyclones or bag filters) designed and maintained according to supplier recommendations.
 - Implement housekeeping procedures that prevent dust accumulation on floors, beams and equipment; use vacuum cleaners or wet methods instead of dry sweeping or compressed air for cleaning.
 - Assess the potential for combustible dust explosion around granulators and dust collectors in consultation with equipment suppliers, and apply appropriate measures such as minimizing enclosed dust clouds, avoiding ignition sources, grounding and bonding of equipment, and installing relief or suppression devices where required.
- Fire detection, protection and means of escape
 - Provide suitable fire extinguishers (including for electrical and plastic fires) at clearly marked locations along production lines, storage areas and waste collection points, and inspect them regularly.
 - Install and maintain fire alarm and, where applicable, heat or smoke detection systems in accordance with Civil Defense requirements and equipment specifications.
 - Ensure that emergency exits, stairways and escape routes are clearly marked, illuminated, unobstructed at all times and lead to safe external assembly points.
- Training and awareness: Provide periodic training for all workers on basic fire prevention, safe use of equipment, housekeeping requirements, polymeric dust hazards, no-smoking rules, and emergency response and evacuation procedures.

X. Community Health and Safety:

❖ Risks:

- Major fire or emergency at the plastic factory: Although the facility is located within a large agro-industrial site away from residential areas, a major fire involving plastics, packaging materials or electrical installations could still generate dense smoke and fumes, and require coordinated response with Civil Defense and nearby land users (for example neighboring facilities, road users).
- Traffic and road safety: Routine movement of trucks delivering raw materials and collecting finished products to and from the factory, as well as internal traffic near site gates, may create an increased risk of traffic accidents for workers, visitors and other road users at the site entrance and along access roads.
- Residual off-site nuisance from noise and emissions: Under abnormal conditions (poor maintenance, malfunction of ventilation, night-time operations) noise or emissions from the factory could be perceptible at the site boundary and for any nearby receptors, potentially leading to concerns or complaints even if they remain within regulatory limits.
- Inadequate stakeholder engagement and external grievance mechanisms: If neighboring land users, local authorities or nearby communities are not informed about operations, emergency arrangements or how to raise concerns, there is a risk of mistrust, unmanaged complaints or delayed reporting of issues that may affect CHS.

❖ Significance

The spatial influence is low (1), the duration extends throughout the operation and maintenance phase (3), the intensity of foreseen negative impacts in case of a major incident is moderate (2), and the occurrence is low (1). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures**

- Stakeholder engagement and information disclosure:
 - Maintain periodic engagement with nearby communities, village councils and municipal authorities to inform them about plant operations, main risks, and key emergency arrangements, in line with ESS10 requirements.
 - Disclose a concise non-technical summary of key E&S risks and mitigation measures in Arabic, as well as the full ESIA, including contact details for the community GM.
- Community grievance mechanism:
 - Maintain a dedicated community grievance mechanism (separate from the workers' GM) with multiple uptake channels suitable for neighbors and road users (phone number / WhatsApp, email, suggestion box at the gate).
 - Ensure that grievances can be lodged anonymously and free of charge, with clear timelines for acknowledgement and response, and that complainants are protected from retaliation.
 - Record, track and close out community grievances, and periodically review trends to identify any recurring community health and safety concerns.
- Traffic and road safety for transport of raw materials and products:
 - Specify safe routes for trucks that avoid passing through sensitive community locations where practicable (such as schools, clinics and dense residential streets).
 - Set and enforce speed limits for trucks on the plant access roads and in the yard; install speed bumps and signage at the main gate and along internal roads where appropriate.
 - Require that all drivers hold valid licenses, receive periodic training on defensive driving and fatigue management, and that vehicles are regularly inspected and maintained, including brakes, lights and tires.
 - Ensure safe loading and securing of cargo to avoid falling objects and spills along public roads.
- Site access control and public safety:
 - Maintain perimeter fencing, controlled entrance gates and security arrangements that prevent unauthorized public access to production and storage areas.
 - Install and maintain clear warning signs at the plant boundary and at any potentially hazardous areas (for example high-voltage areas, chemical storage, moving equipment zones) in Arabic and pictograms.
 - Ensure that visitors, contractors and service providers receive a concise safety induction, including information on emergency alarms, assembly points and prohibited areas, before being allowed into operational areas.

XI. Occupational Health and Safety:

❖ **Risks:**

- Occupational injuries and accidents: During normal operations, workers are exposed to risks of cuts, entanglement, crushing, burns, eye injuries and musculoskeletal disorders while handling PET raw materials and finished products, operating and maintaining molding, granulation and packaging machines, and using forklifts and pallet jacks. Slips, trips and falls may occur due to poor housekeeping, obstructed walkways, spilled materials on floors, and inadequate machine guarding.
- Exposure to physical and chemical agents: Workers may be exposed to noise, heat, polymer fumes, dust from granulation, and chemicals such as cleaning agents, lubricants and oils. Without proper

controls, ventilation and PPE, this exposure can lead to respiratory irritation, skin problems, eye irritation, heat stress and other occupational health effects.

- **OHS capacity and training:** Limited capacity to implement the Corrective Action Plan (CAP) and ESMP, including incomplete implementation of the OHS plan, weak or outdated job safety procedures, lack of systematic incident reporting and investigation, and insufficient training on safe work practices, increases the likelihood and severity of accidents and near misses. This also includes not fully aligning the factory OHS committee and OHS supervisory arrangements with the requirements of Law No. 3 of 2019.
- **Non-compliance with national OHS legislation and GIIP:** There is a risk that the factory will not fully comply with applicable Palestinian OHS legislation and Ministry of Labor regulations, or with Good International Industry Practice (including the General and sector-specific EHS Guidelines for plastics manufacturing). This may result in inadequate PPE provision and use, incomplete medical surveillance, weak emergency preparedness, and insufficient oversight of contractors and visitors working on site.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **OHS management system and legal compliance:** implement the OHS Plan available in [Annex II](#) for the plastic factory as part of the CAP and ESMP. Align OHS management with Law No. 3 of 2019 on OHS supervisors and applicable MoL regulations.
- **OHS roles and structures:** Appoint a qualified OHS Supervisor and establish an OHS Committee with worker representation in line with Law No. 3 of 2019. Ensure regular documented meetings, workplace inspections and follow-up on agreed corrective actions.
- **Safe work procedures and engineering / administrative controls:** Prepare written safe operating procedures for critical tasks and equipment, in line with manufacturer recommendations, and post them near workstations. Ensure that machine guards, interlocks and emergency stop buttons are installed, functional and not bypassed. Require isolation of energy sources and verification of zero-energy state before maintenance or cleaning of machinery. Organize safe manual handling and lifting practices and, where feasible, provide mechanical aids to reduce ergonomic risks.
- **Training, awareness and supervision:** Provide induction training for all workers and contractors and refresher training at least annually on OHS hazards and controls, safe use of machinery and tools, housekeeping, safe handling of chemicals, use of PPE, traffic safety inside the yard, and emergency response including ERP. Maintain training plans and attendance logs and ensure that no worker performs a task without having received the relevant training. Supervisors will monitor compliance with procedures and PPE use during daily rounds and correct unsafe acts and conditions.
- **Personal protective equipment (PPE):** Provide workers, free of charge, with task-appropriate PPE, such as safety shoes, work clothing or coveralls, cut-resistant or chemical-resistant gloves, eye and face protection, hearing protection and respiratory protection where required. Establish rules on correct use, cleaning, replacement and storage of PPE and enforce compliance through supervision and disciplinary measures where necessary.
- **Occupational health and medical examinations:** Implement initial and periodic medical examinations for workers in line with Decision of Council of Ministers No. 22 of 2003 on initial medical examinations and Decision No. 24 of 2003 on periodic medical check-ups (every two years for this type of industry). Maintain confidential medical records and follow up on any work-related restrictions or recommendations.

- Housekeeping and workplace conditions: Maintain good housekeeping in all production, storage and office areas. Keep floors clean, dry and free of obstacles; promptly clean up spills using appropriate methods. Keep walkways, emergency exits and access to electrical panels and firefighting equipment unobstructed at all times. Ensure adequate lighting, ventilation and temperature conditions in work areas, in coordination with the measures under the Noise and Life and Fire Safety sections.
- First aid, emergency information and links to ERP: Provide and maintain first aid kits in accessible locations and ensure that an adequate number of workers per shift are trained in basic first aid. Display emergency procedures and contact numbers (including Civil Defense, ambulance and nearest hospital/clinic) at prominent locations and ensure consistency with the facility ERP and the Life and Fire Safety measures.
- Traffic and vehicle safety in the yard: Implement safe systems of work for loading and unloading, including keeping non-essential workers out of reversing zones, using trained signalers when trucks are reversing, and avoiding any standing between vehicles and fixed objects. Ensure that forklifts and other internal transport vehicles are operated only by authorized, trained drivers and are subject to regular inspection and maintenance.
- Incident reporting, investigation and OHS performance monitoring: Maintain a register of near misses, injuries and occupational illnesses, including date, type, causes and corrective actions. Investigate all lost-time incidents and significant near misses to identify root causes and implement corrective and preventive measures within defined timeframes. Include OHS aspects (incidents, inspections, training, corrective actions) in periodic E&S reporting and review trends in OHS Committee meetings to update risk assessments, procedures and training as needed.

7.4. CUMULATIVE, RESIDUAL, AND CROSS-PROJECT IMPACTS

This subsection synthesizes the findings of the impact assessment in Section 7, looking beyond individual activities or subprojects to consider (i) residual impacts after mitigation, (ii) cumulative and cross-project effects of the four expansion subprojects together with the existing Al Thahreyeh facilities and wider developments in the area, and (iii) wider transboundary and global aspects such as groundwater protection, GHG emissions and biodiversity conservation, in line with the ESF and the ESIA ToR. The analysis considers both positive and negative, direct and indirect impacts over the life of the project.

7.4.1. RESIDUAL IMPACTS AFTER MITIGATION

Applying the methodology in Section 7.1, potential impacts for each subproject and phase were assessed in the unmitigated case and then re-rated after applying the mitigation hierarchy and the ESMP measures. In general, with proper implementation of the ESMPs and compliance with national legislation and WB ESF / EHS Guidelines, residual adverse impacts are expected to be in the Low range, with no impacts expected to remain Substantial.

Residual impacts that may still be Moderate in significance, and therefore require close, ongoing management and monitoring, include:

- Occupational health and safety risks at the cow farms, plastic factory, artisanal dairy factory and rooftop PV system (work at height, machinery, electrical, biological and ergonomic risks).
- Operational traffic and road safety on access roads shared with neighboring communities, due to increased movements of milk tankers, feed trucks, packaging deliveries and distribution vehicles.
- Risk of accidental releases to soil and groundwater from manure and wastewater management systems, septic tanks, biogas, fuel and chemical storage, and maintenance activities.
- Localized air quality, odor and noise around the cow farms and new industrial buildings.

- Community health and safety linked to fire safety, hazardous materials (including PV panels and batteries), and interaction with nearby land uses.

These residual risks are addressed through the site-wide ESIA, the four subproject ESMPs, the OHS Plan, emergency preparedness and response arrangements, and the monitoring program described in this ESIA.

7.4.2. GROUNDWATER POLLUTION AND WATER RESOURCES

Al Thahreyyeh site overlies the western basin of the Mountain Aquifer, an already stressed groundwater resource. Protection of groundwater quality from manure, wastewater and solid-waste leachate is identified in the baseline as a critical sensitivity, given current reliance on cesspits in the wider area and documented pollution problems in the basin. At the same time, the soils at the project plots are classified as having relatively high resistance to groundwater pollution, which offers some natural attenuation capacity.

Cumulatively, the main potential pressures on groundwater and surface water quality from the expansion subprojects are:

- Increased volumes of cow manure and liquid effluent from the additional 400-cow shed, and wash-down water from yards and milking areas.
- Process wastewater (CIP, brines, whey, floor washings) and sanitary wastewater from the artisanal dairy factory, and sanitary wastewater from the plastic factory. Industrial wastewater from the artisanal dairy is planned to be conveyed to the existing biogas unit; the septic systems will manage other streams.
- Potential spills and leaks from fuel, oils, chemicals and waste storage, and from maintenance areas.
- Cumulative effects of current regional practices, where domestic and industrial wastewater from surrounding communities is often discharged to cesspits or wadis, contributing to downstream pollution in the basin.

The ESIA therefore adopts a conservative approach: although soil resistance is relatively high, the project is treated as operating in a sensitive aquifer recharge area, and the mitigation hierarchy is applied to avoid and minimize pollution at source before relying on natural attenuation. Key elements of the cumulative groundwater-protection approach are:

I. Avoidance and minimization at source:

- Connecting manure and liquid wastes from both existing and new cow sheds to the biogas digestors and associated storage ponds, with appropriate lining, roofing, storm-water exclusion and capacity checks for the combined herd.
- Use of sealed septic tanks for sanitary effluents from the plastic and dairy factories, with regular emptying by licensed service providers.
- Implement the mitigation measures stated in the ESA and CAP, as well as the ESMPs, including the establishment of an OWTS for the artisanal dairy factory's operational wastewater.
- Segregation of storm-water from process and sanitary wastewater, and use of rainwater harvesting and controlled drainage in line with the General EHS Guidelines.

II. Control and mitigation:

- Non-permeable, bunded storage for oils, fuels and chemicals; dedicated maintenance areas with hard standing; and prohibition of outdoor storage of hazardous substances, in line with the ESA recommendations.
- Clear procedures and training for spill prevention and response, including containment, clean-up and reporting.

III. Monitoring and thresholds:

- A groundwater and wastewater monitoring program that includes periodic sampling of effluents, biogas digester outlet (if any liquid discharge occurs), and septic tanks (before offsite disposal),
- Comparison of monitoring results with relevant Palestinian standards and applicable WHO guideline values for groundwater and effluents. Exceedances will trigger investigation, corrective actions (e.g. repair of tanks, improved manure handling) and, where necessary, temporary suspension of polluting activities.
- Periodic review of the adequacy of manure, wastewater and storm-water infrastructure capacity in light of herd growth and production levels.

With these measures in place, residual and cumulative groundwater impacts are expected to be Low to Moderate. The main residual risk is associated with accidental failures of containment or treatment systems; this risk is manageable but cannot be completely eliminated and therefore remains a focus of monitoring and contingency planning.

7.4.3. GREENHOUSE-GAS EMISSIONS AND GLOBAL ENVIRONMENTAL IMPACTS

The expansion project has both GHG-increasing and GHG-reducing elements. Additional cows, higher milk throughput, increased energy use in processing and packaging, and more truck movements all contribute to higher emissions relative to the current situation. At the same time, the biogas plant already converts manure and wastewater into electricity and heat, and can be scaled up to handle additional feedstock, while the 500 kWp rooftop PV system with battery storage will supply a significant share of the complex's electricity demand and reduce reliance on grid electricity and diesel generation.

The ESIA adopts a screening-level GHG accounting approach that:

- ❖ Identifies the main Scope 1 sources (enteric fermentation and manure from the herd, on-site combustion in boilers and generators, refrigerant leakage where applicable);
- ❖ Identifies Scope 2 emissions from purchased electricity, using grid-specific emission factors;
- ❖ Considers material Scope 3 contributions such as upstream feed production and downstream product transport where data are available; and
- ❖ Estimates the avoided emissions from biogas-generated electricity and heat (displacing grid electricity and fossil fuels) and from rooftop PV electricity.

The ESMP commits Al Jebrini to maintaining basic energy and production data (herd size, milk output, electricity and fuel consumption) and periodically applying this methodology to track trends in the project's carbon footprint over time. Feasible GHG-reduction and energy-efficiency measures identified in the ESIA and ESMP include:

- Maximizing capture and utilization of biogas and avoiding methane leaks from digestors and storage;
- Gradually increasing the share of onsite renewable energy (PV and biogas) in the complex's energy mix;
- Implementing energy-efficiency measures in the dairy and plastic factories (efficient motors and pumps, heat recovery, insulation, optimized CIP systems), in line with the General and Dairy Processing EHS Guidelines;
- Optimizing logistics and route planning to reduce fuel consumption in milk collection and product distribution.

Given the scale of the project, its contribution to global GHG emissions remains modest, but mainstreaming these measures is important for compliance with ESS3 and for aligning with Palestinian climate commitments. Direct impacts on stratospheric ozone depletion are expected to be negligible, provided that refrigeration and air-conditioning systems use refrigerants consistent with national regulations and Montreal Protocol

obligations, and that any equipment containing ozone-depleting substances is properly maintained and decommissioned.

7.4.4. BIODIVERSITY CONSERVATION AND LAND-USE CHANGE

The baseline identifies Al Thahreyeh site as a transformed agricultural and semi-industrial landscape without natural woodland, critical habitats or formal protected areas in the immediate vicinity. Surrounding land uses include agricultural plots, scattered residences and other industrial and agro-industrial facilities. Cumulatively, the most relevant biodiversity-related impacts are indirect:

- Possible degradation of aquatic and riparian habitats along the Hebron–Besor–Wadi Gaza system through manure and wastewater pollution if controls fail;
- Progressive conversion of agricultural land to industrial uses in the wider Dura–Al Thahreyeh area, with potential loss of agricultural biodiversity and soil functions;
- Disturbance of common fauna (e.g. birds, small mammals) from noise, lighting and increased human activity.

The project’s design and ESMP address these risks primarily by preventing pollution (as described above), maintaining good housekeeping and waste management, and avoiding unnecessary clearance of remaining vegetation or natural features. Given the absence of sensitive habitats on-site and the focus on already modified land, residual impacts on biodiversity and ecosystem services are expected to be Low, provided that groundwater and surface-water protection measures are effectively implemented. The project does not entail any physical or economic displacement of communities, nor any interference with known cultural heritage or traditional land-use rights; therefore, risks of loss of cultural diversity, heritage or access to land are considered minimal.

7.4.5. WIDER CUMULATIVE, INDUCED AND TRANSBOUNDARY IMPACTS

Beyond the site boundary, the expansion subprojects interact with wider trends in the region:

- I. **Cumulative and cross-project effects at Al Thahreyeh:**
 - The four expansion components and existing facilities operate as an integrated agro-industrial complex. Cumulative impacts arise from shared infrastructure (biogas plant, access roads, storm-water drainage, OHS and emergency systems) and from aggregated resource use and emissions.
 - Positive cross-project effects include higher employment, more reliable market outlets for local milk producers, substitution of imported plastic packaging with local production, and improved energy security through PV and biogas.
 - The main negative cross-project risks relate to potential overloading of shared manure and wastewater systems, increased site-level traffic and noise, and a higher consequence of any major accident (e.g. fire, chemical spill) because of the concentration of activities. These are addressed in the ESMP through capacity checks, conservative design of shared systems, and site-wide emergency planning.
- II. **Induced and reasonably foreseeable developments:**
 - The presence and expansion of the Al Jebrini complex may attract complementary businesses and services (feed suppliers, transport, small workshops) to the area and support municipal plans to establish a larger industrial zone. As noted in the baseline, Dura and Al Thahreyeh municipalities have requested removal of land protection for around 3,000 donums to create an industrial area.
 - While such developments can bring additional employment and economic activity, they also carry cumulative pressures on land, water, traffic and community health and safety. These broader land-use decisions are under the mandate of MoLG and the municipalities; Al Jebrini’s role is to comply with

planning and environmental requirements, engage transparently with local authorities and communities, and maintain high E&S standards that can serve as a benchmark for other investors.

III. Transboundary and global impacts:

- The Hebron-Wadi Gaza basin ultimately drains to the Mediterranean through Gaza; untreated wastewater and agricultural runoff from multiple sources already contribute to transboundary water quality issues. By reducing uncontrolled discharges from its own operations and implementing manure and wastewater management, Al Jebrini can avoid adding significantly to these cumulative pressures and may, over time, reduce its share of pollutant loads compared to a “business-as-usual” expansion scenario.
- Air emissions and GHGs from the project form part of the global and regional airshed. Given the scale of operations and the use of renewable energy and biogas, the project’s incremental contribution to regional air pollution and global climate change is considered limited and manageable.
- No significant cross-border migration or geopolitical impacts are anticipated; job creation is moderate and will mainly benefit local communities.

7.5. SUMMARY TABLE OF E&S RISKS AND THEIR SIGNIFICANCE

This section consolidates the key environmental and social risks and potential impacts identified for the four expansion subprojects, across the relevant project phases, into single summary tables. These tables present the significance rating for each risk or impact using the ESIA’s standardized grading approach (based on spatial influence, duration, intensity, and probability), showing both the pre mitigation rating and the expected residual significance after implementation of the applicable ESMP measures in the following chapter and relevant CAP actions.

7.5.1. ROOFTOP SOLAR PV SYSTEM

Table 5: Summary Table of E&S Risks and Their Significance – Rooftop Solar PV System

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
Overall (benefits mainly during O&M)	Renewable energy generation / reduced GHG emissions	+	Indirect	Y	2	2	3	3	10 (Substantial)
	Reduced energy costs / improved energy security	+	Direct	N	2	2	2	3	9 (Moderate)
	Local employment (installation/O&M) and awareness	+	Direct/Indirect	N	1	1	1	3	6 (Low)
Planning & procurement	Regulatory compliance and permitting	-	Direct	N	2	2	2	2	8 (Moderate)
	Design and structural due diligence (roof loading, mounting, wind, lightning)	-	Direct	N	2	2	2	2	8 (Moderate)
	Organizational / institutional E&S capacity building (E&S focal point, OHS, ERP)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Stakeholder engagement and information disclosure	-	Indirect	Y	2	2	2	2	8 (Moderate)
	Integration of E&S requirements into procurement / contracts (CoC, SEA/SH, OHS, waste)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Equipment specification and standards compliance	-	Direct	N	2	2	2	2	8 (Moderate)
	Emergency and fire safety planning (L&FS, Civil Defense coordination)	-	Direct	N	2	2	2	2	8 (Moderate)
Supply & installation	Dust and localized emissions from transport/installation	-	Direct	Y	1	2	1	2	6 (Low)
	Noise from installation works and transport	-	Direct	Y	1	2	1	2	6 (Low)
	Solid waste (packaging, scrap) and improper disposal	-	Direct	Y	2	2	2	2	8 (Moderate)
	Hazardous materials and e-waste (spills, broken modules, batteries)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Labor rights and working conditions (contractors/subcontractors)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Life and fire safety hazards (DC/AC faults; battery overheating; emergency access/shutdown)	-	Direct	N	2	2	2	3	9 (Moderate)

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
	Community health and safety / stakeholder engagement during works	-	Indirect	Y	1	1	2	2	6 (Low)
	OHS for installers (work at heights; electrical; falling objects; sharp edges)	-	Direct	N	1	3	2	2	8 (Moderate)
Operation & maintenance	Solid waste and damaged components	-	Direct	Y	2	2	1	2	7 (Moderate)
	Hazardous materials and waste (batteries / e-waste handling)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Fire hazards and risks (electrical faults; battery thermal runaway)	-	Direct	N	2	2	2	2	8 (Moderate)
	Community health and safety (complaints / emergency events)	-	Indirect	Y	1	2	1	2	6 (Low)
	OHS during inspection and maintenance (electrical safety; LOTO; roof access)	-	Direct	N	2	2	2	2	8 (Moderate)
Decommissioning	Solid waste and e-waste management	-	Direct	Y	2	2	2	2	8 (Moderate)
	Hazardous materials and waste (batteries, broken modules)	-	Direct	Y	2	2	3	3	10 (Substantial)
	Labor rights and working conditions	-	Direct	N	2	2	2	2	8 (Moderate)
	GBV (SEA / SH)	-	Direct	N	1	2	2	2	7 (Moderate)
	Fire, Electrical and Structural Safety	-	Direct	N	2	3	3	2	10 (Substantial)
	OHS/CHS during dismantling (work at height; lifting; electrical isolation)	-	Direct	N	2	2	2	2	8 (Moderate)

7.5.2. PLASTIC FACTORY

Table 6: Summary Table of E&S Risks and Their Significance – Plastic Factory Subprojects

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
Overall (benefits mainly during O&M)	Additional employment and local economic stimulation (production, technicians, maintenance, logistics; linkages with local service providers)	+	Direct/Indirect	N	1	2	2	3	8 (Moderate)
	Improved packaging supply security and resilience (reduced dependence on external suppliers; reduced exposure to border closure and price volatility)	+	Direct	N	2	2	2	3	9 (Moderate)
	Enhanced local employment opportunities for women and youth (production, QC, packaging and administrative functions)	+	Direct/Indirect	N	1	2	2	3	8 (Moderate)

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
	Improved availability of safe food-grade packaging supporting product safety and consumer confidence	+	Indirect	N	2	2	2	3	9 (Moderate)
Finishing works and installation	Impacts on air quality (dust; fumes/VOCs from touch-up works; exhaust from trucks and equipment)	-	Direct	Y	1	1	2	2	6 (Low)
	Noise (minor works, equipment installation/testing; transport and unloading)	-	Direct	Y	1	2	1	2	6 (Low)
	Solid waste (construction debris, packaging, scrap; poor housekeeping; improper disposal)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Hazardous materials and waste (paints/solvents/lubricants; hazardous residues; spills and leaks)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Labor rights and working conditions (contracts, minimum wage, insurance, child labor prohibition, workers GM, welfare facilities, medical exams)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Life and fire safety hazards (electrical works; hot works; smoking; combustible waste accumulation; incomplete arrangements; blocked exits)	-	Direct	N	2	1	2	1	6 (Low)
	Community health and safety during works (communication, nuisance, emergency preparedness)	-	Indirect	Y	1	1	2	2	6 (Low)
	Occupational health and safety (manual handling; tools; electrical; work at height; PPE; contractor capacity; emergency readiness)	-	Direct	N	1	2	2	2	7 (Moderate)
Operation and maintenance	Impacts on air quality (polymer fumes/VOCs; ventilation performance; maintenance solvents; vehicle emissions)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Noise (molding/ISBM line; compressors; cooling units; internal logistics)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Solid waste (process scrap and off-spec products; packaging waste; housekeeping; recycling and disposal)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Hazardous materials and waste (oils, lubricants, chemicals; spills; contaminated rags/filters; empty containers; batteries/tubes)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Surface runoff and stormwater (pellet/scrap loss; oil sheen mobilization; ponding/flooding; erosion/sedimentation)	-	Direct	Y	2	3	2	2	9 (Moderate)

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
	Energy use and utilities (high electricity demand; inefficient utilities; diesel generator emissions; compressed-air and cooling inefficiencies)	-	Direct/Indirect	Y	2	2	2	2	8 (Moderate)
	Labor rights and working conditions (contracts, wages, insurance, medical surveillance, workers GM, training and non-discrimination)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Gender-based violence (SEA/SH, harassment, discrimination, retaliation risks; weak confidential reporting)	-	Direct	N	1	3	2	1	7 (Moderate)
	Life and fire safety hazards and risks (plastic fire load; electrical faults; dust hazards; waste accumulation; means of escape; system maintenance)	-	Direct	N	2	3	3	1	9 (Moderate)
	Community health and safety (traffic and road safety; residual nuisance; emergency events; stakeholder engagement and external GM)	-	Direct/Indirect	Y	1	3	2	1	7 (Low)
	Occupational health and safety (machinery injuries; slips/trips; noise/heat/fumes/dust; chemicals; training and supervision; legal compliance)	-	Direct	N	2	2	2	2	8 (Moderate)

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

This chapter translates the ESIA findings into four site-specific Environmental and Social Management and Monitoring Plans (ESMPs) for the expansion cow farm, the new plastic containers factory, the artisanal “Baladi” dairy factory and the rooftop solar PV system. Building on the risk and impact assessment in Chapter 7 and on the ESA Corrective Action Plan, each ESMP sets out, in matrix form, the required mitigation and monitoring measures for all relevant project phases, together with implementation responsibilities, monitoring arrangements, success indicators and indicative budgets, in line with the F4J III ESMF, the World Bank ESF/ESSs and applicable Palestinian legislation. The chapter is organized by subproject and by phase (planning and procurement, construction and finishing, installation and commissioning, operation and, where relevant, decommissioning), and includes cross-cutting measures on issues such as E&S management capacity, labor and working conditions, occupational and community health and safety, food safety and hygiene, grievance mechanisms and stakeholder engagement. The ESMPs are intended to serve as a practical tool for Al Jebrini Co., contractors and the F4J III to integrate E&S requirements into design, procurement and contracts, and to guide day-to-day supervision, reporting and follow-up.

8.1. SOLAR PV SUBPROJECT

8.1.1. PLANNING AND PROCUREMENT PHASE

Table 7: E&S Management and Monitoring Matrix for the Planning and Procurement Phase – Solar PV Subproject

Category	Parameters and Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Planning and Procurement Phase (PV System)							
Regulatory Compliance & Licensing	<ul style="list-style-type: none"> ➢ Non-compliance with legal requirements. ➢ Not obtaining required licenses 	<ul style="list-style-type: none"> ➢ coordinate with EQA, Civil Defense, SELCO, PENRA, municipality and other authorities as required on their requirements in regard to the project. ➢ The Installation and operation Phases shall not be initiated until all required licenses and permits are obtained. 	Licenses from EQA, SELCO, PENRA, municipality, and Civil Defense are obtained and archived.	AI Jebrini Management	<ul style="list-style-type: none"> ➢ Relevant authorities ➢ F4J E&S Specialist 	All permits and approvals obtained.	No additional Budgetary Requirements
Design and Structural Due Diligence	<ul style="list-style-type: none"> ➢ Inadequate structural assessment of the roofs and mounting systems (load-bearing capacity, wind uplift, waterproofing, lightning protection) ➢ insufficient integration of life and fire safety requirements at design stage. 	<ul style="list-style-type: none"> ➢ Before procurement and installation, commission a licensed structural engineer to verify the load-bearing capacity of each roof (dead loads, PV and mounting loads, access loads, wind uplift and, where relevant, seismic loads) in line with the Palestinian building code and GIIP, and to provide stamped calculations and drawings. ➢ Require the PV supplier / EPC contractor to use mounting systems and roof-fixing details approved by the structural engineer and compatible with the roof type, ensuring that waterproofing, drainage, fire rating and lightning protection are not compromised. ➢ Integrate structural and life-and-fire safety considerations into the detailed design, including safe roof access points, permanent walkways where needed, guardrails or anchor points for work at height, and lightning protection. 	<p>Signed and stamped structural assessment reports and calculations.</p> <p>Evidence that structural engineer's recommendations are reflected in drawings, technical specifications and contracts.</p> <p>Records of Civil Defense / municipality clearances on structural and life-and-fire safety aspects, where applicable.</p>	<p>PV EPC Contractor</p> <p>Licensed Structural Engineer</p> <p>AI Jebrini Management</p>	<ul style="list-style-type: none"> ➢ AI Jebrini OHS/ E&S Focal Point ➢ Planning and Procurement 	<p>Structural clearance report issued and filed.</p> <p>L&FS provisions reflected in drawings and BoQ.</p> <p>Civil Defense / municipal structural and L&FS approvals obtained before installation.</p> <p>No structural non-conformities raised during installation or commissioning.</p>	Cost of structural engineering assessment and any required strengthening or design modifications (to be included within PV subproject design and supervision budget).

Category	Parameters and Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Planning and Procurement Phase (PV System)							
Organizational E&S Capacity	<ul style="list-style-type: none"> Absence of qualified staff for E&S management. 	<ul style="list-style-type: none"> Assign the OHS supervisor as the E&S focal point. designate additional OHS supervisors with E&S responsibilities per Law No.3 of 2019, as well as an OHS committee per the ESA and CAP and in accordance with workers numbers. 	Verify assignment and official documentation of roles and responsibilities.	Al Jebrini Management	<ul style="list-style-type: none"> F4J E&S Specialist MoL 	E&S Focal Point formally assigned; roles clearly documented.	No additional Budgetary Requirements
E&S Capacity Building	<ul style="list-style-type: none"> Limited availability of qualified staff within Al Jebrini and the selected contractor to manage E&S risks insufficient planning for training and supervision on ESF/ESS, OHS and emergency response. 	<ul style="list-style-type: none"> F4J E&S Specialist to provide the E&S focal points with orientation and awareness on the ESF, ESSs, ESIA, and ESMP Conduct E&S orientation training for staff and contracted workers covering general awareness, ESIA, ESMP measures, OHS. E&S orientation training to take place prior to initiating the Installation Phase. 	Review and verification of training logs, attendance sheets, training content, and photographic records.	Al Jebrini E&S focal points	<ul style="list-style-type: none"> Al Jebrini Management F4J E&S Specialist 	Training conducted and documented regularly.	Training of E&S focal points by the F4J E&S Specialist is covered under the F4J ESMF 300\$ for each training session covering hospitality, printing, and miscellaneous cost. With an estimate of two sessions in this phase needed for contracted and direct staff at a total cost of 600\$
Stakeholder Engagement & Information Disclosure	<ul style="list-style-type: none"> Risks due to ineffective engagement and insufficient information disclosure to stakeholders. 	<ul style="list-style-type: none"> Conduct and document stakeholder engagements per ESS10 and the F4J III SEP as part of the ESIA and ESMP preparation. Disclose cleared ESMP and ESIA publicly in Arabic. 	Disclose engagement outcome as part of the ESMP	E&S Consultant Al Jebrini E&S focal points	<ul style="list-style-type: none"> F4J E&S Specialist Through Quarterly reporting. 	<ul style="list-style-type: none"> Stakeholder engagement documented; disclosure of ESMP and ESIA completed and publicly accessible. 	No additional Budgetary Requirements
Equipment Specifications and E&S in procurement	<ul style="list-style-type: none"> Risk of non-compliance of PV system and relevant equipment with local and international standards and guidelines. Tender documents and contracts that do not clearly reflect ESF/ESS obligations, the F4J III LMP, worker GM and 	<ul style="list-style-type: none"> Attach the ESIA and ESMP for the PV subproject and relevant ESF commitments to the bidding documents and contracts, and make compliance a contractual obligation. Require the contractor to nominate an Environmental and Social focal point and to prepare site-specific management plans (e-waste management, construction method statement) consistent with the ESIA, ESMP, and F4J III LMP. Include clear clauses on codes of conduct, SEA/SH risk mitigation, incident notification timeframes, and penalties for non-compliance, aligned with ESIA and ESMP. 	Review bidding clauses; ensure relevant clauses are included and adhered to prior to issuing procurement notice	Al Jebrini Procurement & Technical Teams	<ul style="list-style-type: none"> Al Jebrini E&S focal points; F4J III Project Procurement and E&S Specialist 	Equipment procured complies with local and international standards and guidelines, documented in procurement records.	No additional Budgetary Requirements

Category	Parameters and Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Planning and Procurement Phase (PV System)							
	SEA/SH provisions, nor specify requirements for OHS, e-waste / hazardous waste management and incident reporting.	<ul style="list-style-type: none"> For PV Panels manufacturers and inverters and batteries: compliance with GIIP including ISO 9001, ISO 14001 IEC 61730, CE certification for safety, EN 50178 safety requirements for power electronic converter systems, adequate noise specifications in line with EQA guidelines. 					
Emergency & Fire Safety Planning	<ul style="list-style-type: none"> Risks from inadequate planning of emergency preparedness, particularly Life and Fire Safety (L&FS). 	<ul style="list-style-type: none"> Engage Civil Defense early to integrate comprehensive fire safety measures into the system design; Develop Emergency Response Procedures as part of OHS plan as available in Annex II. schedule mandatory training and drills in cooperation with the Civil Defense as detailed in the ESA. 	Verify Civil Defense engagement; review ERP availability Review training and drills log	<ul style="list-style-type: none"> Al Jebrini Management Al Jebrini E&S Focal Points 	<ul style="list-style-type: none"> Civil Defense F4J E&S Specialist 	Fire safety measures integrated into system design; ERP developed and documented; training and drills scheduled.	No additional Budgetary Requirements

8.1.2. SUPPLY AND INSTALLATION PHASE

Table 8: E&S Management and Monitoring Matrix for the Supply and Installation Phase – Solar PV Subproject

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
Air Quality <ul style="list-style-type: none"> Dust generation during supplying of PV panels and relevant equipment inside the subproject site. Emissions from transportation and crane lifting vehicles. 	<ul style="list-style-type: none"> Dust generation: paving the internal roads to the roofs where the PV panels will be installed as stated in the CAP. Also, implement dust suppression techniques such as wetting down surfaces during heavy or frequent movement intervals. Concentrated emissions: Plan heavy equipment (transportation and lifting, etc..) movements and regularly maintain vehicles per the Ministry of Transport regulations. Vehicle Speed Monitoring: Regulate and monitor vehicle velocities not to exceed 20 Km/h on unpaved roads. 	<ul style="list-style-type: none"> Verify the paving of the roads. Vehicle velocity monitoring on unpaved roads Heavy equipment movements planned and maintained 	Al Jebrini Management Al Jebrini E&S Focal Points Contractors	<ul style="list-style-type: none"> Al Jebrini E&S focal points; Frequency: periodic inspection during installation activities (weekly basis) 	<ul style="list-style-type: none"> Minimal visible dust during activities -All roads to the site are paved. 	Included in contractors' obligations. No additional Budgetary Requirements for road paving as it is part of the project budget.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
Noise <ul style="list-style-type: none"> Noise from installation activities. Noise from transportation and Delivery of PV Panels and Relevant Equipment. 	<ul style="list-style-type: none"> Comply with ambient noise level limits in specifications No. PS 840-2005 Ensure proper maintenance of equipment/machinery. Provide PPE to workers (earplugs, earmuffs). Reduce unnecessary idling of vehicles during loading/unloading. 	<ul style="list-style-type: none"> Review of maintenance records for equipment and vehicles. Inspection of PPE usage compliance. 	Contractors and Suppliers	<ul style="list-style-type: none"> Al Jebrini E&S Focal Points EQA <ul style="list-style-type: none"> Frequency: Daily inspections during high-noise activities. 	<ul style="list-style-type: none"> -Compliance with allowable ambient noise levels - No community / workers complaints regarding noise. 	<ul style="list-style-type: none"> No additional Budgetary Requirements Around 100\$ for noise measurement device
Solid Waste <ul style="list-style-type: none"> Generation of waste from installation works. Risk of random waste dumping in unauthorized areas. 	<ul style="list-style-type: none"> Disposal of waste generated from Installation Works: Conduct regular site cleanups to remove discarded materials and maintain a clean and organized environment. Also, Place clearly marked waste bins throughout work areas. Random Dumping of Waste: Provide clear instructions to contractors and workers regarding waste management procedures and prohibited random waste disposal practices through E&S awareness and orientation training. And incorporate waste management clauses into contractor agreements where adherence to local regulations regarding solid waste management shall be maintained. This shall be in adherence to the construction and demolition waste bylaw No. 16 of 2023. Solid Waste Segregation & Recycling when Possible: Segregate waste at source into recyclables (cardboard, plastics, metals) and non-recyclables, and send recyclables to licensed collectors or recyclers where available and when possible. Sound Final Disposal: Ensure all residual wastes are transported to an approved municipal or licensed disposal facility in coordination with the local Joint Services Council (JSC) and municipality and retain disposal receipts where applicable. 	<ul style="list-style-type: none"> Regular visual inspection of waste storage areas. Verify availability of waste bins. Review training logs and attendance records. Check waste disposal records and confirm adherence to designated disposal locations. Inspect contractors' agreements to confirm inclusion of waste management clauses. 	Contractors JSC and Municipality	<ul style="list-style-type: none"> Al Jebrini E&S focal points. Frequency: Daily inspections 	<ul style="list-style-type: none"> - Clear waste collection and disposal onsite. - No incidents of random dumping documented. - Logs of waste disposed of at designated and approved locations. - Proper waste management clauses included in contracts. 	<ul style="list-style-type: none"> Included in contractors' obligations.
Hazardous Material and Waste <ul style="list-style-type: none"> Temporary storage and use of hazardous materials (paints, solvents, adhesives, lubricants, cleaning agents). Generation of hazardous waste (used oil, chemical residues, empty containers, contaminated materials). 	<ul style="list-style-type: none"> Hazardous Waste Disposal: Liaise with MoH and EQA on the disposal of any resulting hazardous waste, such as broken PV panels, and empty containers of sealants and adhesives. In line with the Palestinian hazardous waste management system No. 6 of 2021. Use licensed haulers for transporting hazardous waste to ensure safe and compliant transportation. Safe Handling and Storage Procedures: Establish clearly defined and secure areas for the temporary storage of hazardous materials, ensuring appropriate containment and labelling. 	<ul style="list-style-type: none"> Visual inspections for storage areas, labeling, containment adequacy, and spill kits availability. Verification of PPE availability and usage by workers. Review records of hazardous waste 	Contractors (with oversight by Al Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> Al Jebrini E&S focal points Frequency: Daily inspections. 	<ul style="list-style-type: none"> - Properly secured and labeled hazardous material storage areas. - Availability and correct usage of PPE and spill kits. 	<ul style="list-style-type: none"> - Included in contractors' obligations. -Approximately USD 100 for spill kits.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement- ation Responsibility	Monitoring Responsibility Frequency	& Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
<ul style="list-style-type: none"> ➤ Risk of accidental spills or leaks of hazardous materials. ➤ Handling broken PV panels ➤ Misclassification and mixing of hazardous / e-waste with general waste 	<ul style="list-style-type: none"> ➤ PPEs: Provide workers with adequate PPE such as insulated gloves, goggles, respirators/masks, safety shoes, protective suits. ➤ Emergency Response Procedures (ERP): Maintain readily available spill response kits and equipment near areas of hazardous materials storage and usage. ➤ E-waste Management Measures: <ul style="list-style-type: none"> ○ Require contractors to develop e-waste management measures as part of their bids, and to be approved by the company prior to installation. ○ Handle broken or defective PV panels as e-waste: store them on pallets in a secure, covered area to avoid further breakage and dispersion of glass fragments. ○ Where feasible, prioritize return to supplier take-back schemes or licensed e-waste recyclers, and explicitly prohibit disposal of PV panels in municipal dumps. ○ Hazardous materials inventory and SDS: Maintain an inventory of all hazardous materials used during installation and keep Safety Data Sheets (SDS) available on site in Arabic and/or English. Use this information to define handling, storage and PPE requirements. ➤ Hazardous-waste segregation and tracking: <ul style="list-style-type: none"> ○ Collect hazardous wastes (chemical residues, oily rags, contaminated absorbents, empty adhesive / sealant containers, used cartridges) in dedicated, labelled containers separate from general waste. ○ Keep a simple log of hazardous wastes generated and removed from site (type, approximate quantity, date, and destination). ➤ Training and supervision: <ul style="list-style-type: none"> ○ Provide targeted training for installers on hazardous materials handling, PPE use, and e-waste procedures during induction and toolbox talks. ○ Ensure that the company's OHS/ E&S supervisor periodically checks storage areas and waste management practices for compliance. 	disposal and transportation.				

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement- ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
Labor Rights and Working Conditions <ul style="list-style-type: none"> ➤ Non-compliance with Palestinian Labor Law (PLL) regarding working hours, wages, and benefits. ➤ Workers not covered by valid injury insurance. ➤ Child Labor ➤ Absence or ineffectiveness of a workers' grievance mechanism. ➤ Risk of workers' wages below the minimum wage requirements (Act No.4 of 2021). ➤ Insufficient provision of resting areas, washrooms, and drinking water (Cabinet Decision No.15 of 2003). ➤ Lack of Workers GM ➤ Forced or Coercive Practices 	<ul style="list-style-type: none"> ➤ Contractual Obligations: <ul style="list-style-type: none"> ○ Ensure that all contracts with contractors and subcontractors explicitly state the need to adhere to labor laws, including age and wage requirements, working hours, and benefits. ○ Contractors are to submit their workers' contracts to the employer to ensure appropriate labor rights are included in the PLL. ○ Periodic monitoring shall also include a review of a sample of workers' pay slips to ensure adherence to Act No.4 of 2021. ○ For direct workers ensure that all new workers are provided with contracts that clarify rights, responsibilities, wages, working hours, benefits, and other aspects as stipulated in the PLL. ➤ Mandatory Insurance: <ul style="list-style-type: none"> ○ Make it mandatory for contractors and subcontractors to provide valid injury insurance policies for all workers before commencing work. ○ Regularly verify the validity of insurance policies and ensure they are in line with the PLL. ○ All direct workers must be included in a valid injury policy. ➤ Minimum Wage: Ensure that contractors and suppliers have signed contracts with their workers with the minimum requirements of the PLL and Act No.4 of 2021 are implemented. ➤ Prohibition of child and forced labor: <ul style="list-style-type: none"> ○ Explicitly prohibit child and forced labor in all contracts with contractors and suppliers, including prohibition of ID retention and recruitment fees. ○ Require contractors to maintain a worker register (name, ID, age, job, start date) available for inspection. ➤ Working hours, overtime and rest: <ul style="list-style-type: none"> ○ Require contractors to record working hours and overtime and to compensate overtime in accordance with PLL provisions; verify compliance during periodic monitoring. ○ Ensure daily and weekly rest periods are respected and that workers are not required to work excessive hours. ➤ E&S Capacity: Project Workers shall receive an E&S orientation training prior to the commencement of their activities covering the CoC, GM, OHS, ERP, and the ESMP overall. ➤ Grievance Mechanism: Contractors shall adopt al Jebrini's Workers' Grievance Mechanism for the project with appropriate uptake channels with supervision from the project owner as available in Annex III. 	<ul style="list-style-type: none"> ➤ Review of worker contracts, pay slips, and insurance policies. ➤ Verification of availability and accessibility of GM and CoC. ➤ Review of orientation training attendance logs and content. 	Contractors	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points ➤ MoL ○ <u>Frequency:</u> monthly 	<ul style="list-style-type: none"> -Workers' contracts comply with PLL. - Pay slips confirm minimum wage adherence. - Valid insurance for all workers documented. - GM is accessible, effective, and utilized. - Proper facilities provided and maintained. - Orientation training and CoC documented. 	Included contractors' obligations.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement- ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
	<ul style="list-style-type: none"> ➤ Employment: Ensure that the employment of workers is conducted based on merit and skills required only without bias towards social, gender, or socio-economic considerations. 					
Life and Fire Safety Hazards and Risks <ul style="list-style-type: none"> ➤ Fire from electrical connections and installation. ➤ Battery overheating/malfunctioning ➤ Cabling and equipment layout ➤ Emergency response constraints 	<ul style="list-style-type: none"> ➤ Compliance with Civil Defense and codes: Design and install the PV system in accordance with Palestinian Civil Defense requirements available in Annex II. Obtain Civil Defense and SELCO clearance (and other required approvals) prior to energization, and keep as-built drawings available for inspection. ➤ Qualified design and installation: Ensure that all PV electrical works are designed, supervised and commissioned by qualified electrical / PV engineers and carried out by trained, competent electricians and technicians only. ➤ Safe wiring and protection: Install DC and AC cabling, junction boxes and inverters in line with manufacturer instructions and national electrical codes (for sizing, insulation, protection devices, earthing/ bonding and over-current / arc-fault protection). ➤ Battery Supply: Ensure procuring batteries that are specific to solar energy installations and that are compatible with the system, approved by the technical and electrical engineers. ➤ Battery siting and ventilation: Locate batteries in a dedicated, shaded and well-ventilated indoor room or sheltered area, away from direct sun and ignition sources. Provide adequate ventilation, temperature monitoring and manufacturer-recommended spacing, and prohibit smoking and open flames in the battery area. ➤ Emergency shutdown and signage: Provide clearly labelled, readily accessible DC and AC disconnects at agreed locations (for example, near building entrances and main distribution boards). Install durable warning and information signage (single-line diagrams, shutdown instructions, "PV array - energized in daylight" labels) to guide workers and Civil Defense. ➤ Fire detection and firefighting readiness: Equip inverter and battery areas with suitable fire detection (where feasible) and portable fire extinguishers rated for electrical fires. Train workers in basic fire response and extinguisher use as part of the site Emergency Response Plan. ➤ PPE and safe work procedures: Require appropriate PPE for electrical works (insulated gloves, arc-rated clothing where needed, safety shoes, eye/face protection) and apply lock-out/tag-out (LOTO) and permit-to-work procedures for electrical interventions and any hot works. 	<ul style="list-style-type: none"> ➤ Regular inspections of compliance with Civil Defense requirements. ➤ Regular checks on electrical connections. ➤ Monitoring battery area temperature. ➤ Verification of skilled personnel performing electrical works. ➤ Regular inspection of PV system ➤ Regular inspections of PPE availability and usage. 	Contractors (supervised by Al Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; ➤ Civil Defense ➤ <u>Frequency:</u> Weekly inspections during installation activities. 	-PV system installations approved by the Civil Defense - Zero incidents of faulty wiring, loose connections, or overheating detected -No battery overheating incidents reported -Monitoring and inspection schedule fully implemented -Workers' adherence to PPE protocols.	No additional Budgetary Requirements

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
	<ul style="list-style-type: none"> ➤ Inspection and maintenance: Implement a preventive maintenance and inspection schedule, preferably semi-annual (visual checks, torque checks, insulation resistance tests, thermographic scans as needed) to identify and correct overheating, damaged components or loose connections before they lead to incidents. 					
<p>Community Health and Safety</p> <ul style="list-style-type: none"> ➤ Inadequate Stakeholder Engagement ➤ Risks from potential fires and emergency situations during installation works. 	<ul style="list-style-type: none"> ➤ Ensure adequate stakeholder communication and consultation throughout the preparation and installation phase. ➤ Disclose project information, including E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in Arabic, using accessible formats and channels. ➤ Engage Civil Defense in the preparation and installation phase, ensuring comprehensive fire safety integration into the system design. ➤ Regularly update and implement the ERP. ➤ Conduct regular fire drills and emergency response training for all workers. ➤ Install emergency warning signs around the facilities premises and not only indoors. As well as an emergency assembly point sign. 	<ul style="list-style-type: none"> ➤ Verify records and logs of stakeholder engagement and information disclosure. ➤ Ensure Civil Defense engagement. ➤ Review ERP availability. ➤ Verify records and logs for the fire and emergency response training for workers ➤ Visual inspection of signs availability. 	<p>Al Jebrini Management</p> <p>Contractors</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points ➤ EQA ➤ <u>Frequency:</u> Weekly or as required 	<ul style="list-style-type: none"> - Zero community complaints related to lack of communication or inadequate consultation. -All key project and E&S documents disclosed in Arabic through appropriate channels. -ERP implementation records and emergency drill evaluations completed. -all emergency exits accessible and clearly marked 	<p>Stakeholder engagement and consultation is part of the ESIA preparation budget.</p> <p>Project information board around 200\$.</p>
<p>Occupational Health and Safety</p> <ul style="list-style-type: none"> ➤ Risks from the installation of the PV system and relevant equipment (e.g., electrical shock, falls, injuries, slip and trip... etc.). 	<ul style="list-style-type: none"> ➤ Civil Defense Requirements: Adhere to the Palestinian Civil Defense Requirements for PV system installation and Obtain Palestinian Civil Defense permits prior any installation activity. ➤ OHS Plan Commitment: Contractors to commit to and implement the Occupational Health and Safety Plan (OHS Plan) as available in Annex II. ➤ ERP: Integrate and implement the Emergency Response Plan (ERP) as part of the OHS plan. Require contractors to report all incidents, near-misses and unsafe conditions to Al Jebrini, investigate root causes and 	<ul style="list-style-type: none"> ➤ Verify compliance with the Civil Defense ➤ Regular inspections of PPE availability and usage. ➤ Ensure OHS measures integrated into contractor's contracts and 	<p>Contractors (supervised by Al Jebrini's OHS Supervisor)</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; ➤ MoL. ○ <u>Frequency:</u> Weekly inspections during installation activities. 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded -Workers' adherence to PPE protocols. 	<p>Cost of PPEs range around 50\$ per worker and is to be included in contractors' obligations.</p> <p>First aid kits cost ~ 150\$. With 3 to be</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement- ation Responsibility	Monitoring Responsibility Frequency	Success Indicators &	Budgetary Requirements
Supply and Installation Phase (PV System)						
<ul style="list-style-type: none"> ➤ Inadequate capacity and awareness among workers and contractors. ➤ Lack of PPE and compliance to their use. ➤ Inadequate Emergency Preparedness and Response 	<ul style="list-style-type: none"> ➤ implement corrective and preventive actions; include OHS performance in monthly reporting to the project owner and F4J III. ➤ OHS Competency, Supervision, and Training: <ul style="list-style-type: none"> ○ Ensure all electrical works are carried out and supervised by qualified and licensed electricians; working at height is supervised by competent personnel with demonstrable experience. ○ Provide all workers with OHS induction and toolbox talks before starting PV works, covering work-at-height risks, electrical safety, housekeeping, emergency response and safe chemical handling. ○ Designate an on-site OHS supervisor / E&S focal point for the contractor to monitor implementation of the OHS Plan, record observations and enforce corrective actions. ➤ OHS Responsibilities: Appoint an E&S focal point from the contractors' and suppliers' side to follow up on OHS and working conditions aspects. ➤ Compliance with PPE Use: Inspections will be conducted to ensure adequate quantities and conditions of PPEs, as well as the inspection of commitment to their use. This includes: <ul style="list-style-type: none"> ○ Ensure that all workers have access to and are trained in the use of fall protection equipment, such as safety harnesses, lifelines, and guardrails. ○ Require workers to wear cut-resistant gloves and appropriate clothing to minimize the risk of injuries from sharp objects. ○ Train workers in ladder safety, including proper ladder placement, securing, and use. ➤ First Aid Kits: Provide first aid kit on the site, ensure that kits are provided in adequate numbers per worker and that they are always accessible, and in good condition at all times. ➤ Medical Facilities: Coordinate and locate the nearest medical facility/ hospital to the site. Numbers of first aid response services shall be circulated to workers. ➤ Tools and Equipment: Secure tools, equipment, and materials to prevent them from falling from rooftops. ➤ Work Zones: Establish exclusion zones or barriers around work areas to protect workers and bystanders from falling objects. Display visible warning signs, barriers, and caution tape around the working area perimeter to alert and prevent unauthorized entry. ➤ Working Conditions: Monitor weather conditions, and suspend work during adverse conditions, such as high winds or lightning storms. ➤ Waste Safe Handling: Ensure that workers are familiar on safe handling and disposal of chemicals. 	<ul style="list-style-type: none"> ➤ operational procedures. ➤ weekly toolbox meeting and reports documentation review. ➤ Availability of incident and accident log. 			<ul style="list-style-type: none"> -Adequately documented OHS training logs and toolbox meetings. 	available on site, this is estimated at 450\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement- ation Responsibility	Monitoring Responsibility Frequency	& Success Indicators	Budgetary Requirements
Supply and Installation Phase (PV System)						
	<ul style="list-style-type: none"> ➤ EHSGs Compliance: Abide to the WB's Environmental Health and Safety Guidelines (EHSGs) both general and the EHSGs for for Electric Power Transmission and Distribution. ➤ Safe work at height: <ul style="list-style-type: none"> ○ Provide safe access to roofs using properly secured industrial-grade ladders, stairs and, where necessary, compliant scaffolds with guardrails and toe boards. ○ Install temporary edge protection, lifelines and certified anchor points wherever there is a risk of falling; require use of full-body harnesses with double lanyards and shock absorbers. ○ Prohibit work at height during strong winds, rain, storms or other unsafe weather conditions; secure panels and larger components to prevent being blown off roofs. ➤ Electrical safety: <ul style="list-style-type: none"> ○ Apply lockout-tagout and isolation procedures before any work on electrical circuits; clearly identify and label isolators and disconnect switches. ○ Ensure proper earthing and bonding of structures and equipment; use insulated tools and test equipment suitable for the voltage levels involved. ○ Prohibit live work to the extent possible; where unavoidable, apply strict controls, including reduced voltage, use of arc-rated PPE and segregation of the work area. ➤ Manual handling and ergonomics: <ul style="list-style-type: none"> ○ Plan manual handling tasks to avoid over-exertion, using team lifts and mechanical aids (trolleys, hoists) for panels and inverters. ○ Rotate tasks and provide guidance on correct lifting techniques to reduce musculoskeletal strain. ➤ Housekeeping, falling objects and site control: Maintain good housekeeping on roofs and access routes by promptly removing waste, securing loose materials and routing cables neatly to avoid tripping. 					

8.1.3. OPERATION AND MAINTENANCE PHASE

Table 9: E&S Management and Monitoring Matrix for the Operation and Maintenance (O&M) Phase – Solar PV Subproject

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance (O&M) Phase (PV System)						
Solid Waste > Generation of waste from defective parts after maintenance > Risk of random waste dumping in unauthorized areas.	> Maintain clearly marked waste bins throughout work areas. > Provide clear instructions to contractors and workers regarding waste management procedures and prohibited random waste disposal practices > Maintain Adherence to local regulations regarding solid waste management. > Provide E&S awareness training to workers on waste management practices. > Incorporate waste management clauses into contractor agreements.	> Regular visual inspection of waste throughout the area. > Verify availability of waste bins. > Review training logs and attendance records. > Check waste disposal records and confirm adherence to designated disposal locations. > Inspect contractors' agreements to confirm inclusion of waste management clauses.	Maintenance team Al Jebrini management	Al Jebrini E&S focal points. o <u>Frequency:</u> during O&M maintenance schedule works	- Clear waste collection and disposal onsite. - No incidents of random dumping documented. - Logs of waste disposed of at designated and approved locations. - Proper waste management clauses included in contracts.	No other budgetary requirements.
Hazardous Material and Waste > Temporary storage and use of hazardous materials (paints, solvents, adhesives, lubricants, cleaning agents). > Generation of hazardous waste (used oil, chemical residues, empty containers, contaminated materials). > Risk of accidental spills or leaks of	> Coordinate with MoH and EQA for the proper disposal of hazardous waste generated during Operation & Maintenance activities (e.g., defective PV modules, inverters, batteries, oily waste, contaminated rags) in accordance with Palestinian hazardous waste management system No. 6 of 2021. > Ensure all hazardous waste from routine maintenance is collected, handled, and transported by licensed haulers. > Establish clearly marked, secured, and adequately contained storage areas for hazardous materials. > Maintain proper labelling of hazardous materials and waste storage. > Provide workers with adequate PPE such as gloves, goggles, gowns, masks, and boots. > Maintain readily available spill response kits and equipment near hazardous materials storage/use areas. > Integrate Emergency ERP within the facility's OHS plan.	> Periodic inspections of hazardous waste storage areas. > Check and document the status of storage containers (e.g., no corrosion, cracks, damage, or overfilling) > Verify proper labelling > Review of hazardous waste disposal and transportation documentation. > Visual checks of spill response kits availability and PPE usage by workers.	Al Jebrini OHS Supervisor. Maintenance team Al Jebrini management	> Al Jebrini E&S focal points o <u>Frequency:</u> during O&M maintenance schedule works or as needed.	- Properly secured and labeled hazardous material storage areas. - Availability and correct usage of PPE and spill kits. - Zero incidents of improper disposal of hazardous waste. - Zero spills or leaks from hazardous materials and waste storage areas.	- Included in contractors' obligations. -Approximately USD 100 for spill kits.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementati on Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance (O&M) Phase (PV System)						
hazardous materials.						
Labor Rights and Working Conditions <ul style="list-style-type: none"> ➢ Noncompliance to Labor Rights (PLL, minimum wage) ➢ Lack of valid injury insurance ➢ Lack of effective grievance mechanism ➢ Lack of worker awareness on E&S responsibilities, rights, grievance mechanism ➢ Non-compliance with required medical examinations 	<ul style="list-style-type: none"> ➢ Clear Employment Contracts: Ensure that every worker, regardless of their position, is provided with a clear and comprehensive employment contract that outlines their rights, duties, compensation, working hours, and other essential terms in line with the PLL. ➢ Code of Conduct: Implement and adopt the Code of Conduct (CoC). The CoC shall contain a demarcation of labor rights, responsibilities and GBV related measures that are further discussed below. The code of conduct to be used for this project is the one recommended by the F4JII, available in the F4JII Project ESMF, and adopted for Al Jebrini's expansion project as available in Annex I. ➢ Training: The Project Workers shall receive an E&S orientation training prior to the commencement of the operations phase, covering the CoC, GM, OHS, ERP, Waste management, and the ESMP overall. ➢ Adherence to Minimum Wage Act: regular monitoring shall be conducted to review the wages being paid to ensure they meet the minimum wage requirements set by the Palestinian Authority. ➢ Mandatory insurance: All workers must be provided with contractual documentation and are to be covered by a valid injury insurance policy. ➢ Workers' Grievance Mechanism (GM): A workers' Grievance Mechanism shall be established in accordance with Annex III. Uptake channels shall be disseminated to workers and should be effective and accessible. ➢ Recruitment And Employment: Recruitment shall be conducted in a transparent manner including issuing announcements for vacancies, reviewing applications based on merit and qualifications, and documenting scores provided for each applicant for later review shall audits be required or if grievances were received through the company's GM. ➢ Conduct Medical Examinations for Workers: In line with Cabinet Decisions No.22 & 24 of 2003, with follow-up medical examinations every 2 years. 	<ul style="list-style-type: none"> ➢ Verification of workers' contracts and compliance with PLL & minimum wage requirements (Act No. 4, 2021). ➢ Verification of valid injury insurance for all workers. ➢ Regular checks on the functioning and effectiveness of the Grievance Mechanism. ➢ Documentation and review of E&S orientation training attendance sheets and training logs. ➢ Periodic reviews of medical examination logs and medical certificates. ➢ Regular checks of signed CoC records. 	Al Jebrini HR Department	<ul style="list-style-type: none"> ○ Al Jebrini E&S focal points; ○ F4J E&S Specialist ○ <u>Frequency:</u> Quarterly or as needed. 	<ul style="list-style-type: none"> -All Workers' contracts comply with PLL and minimum wage. - Valid insurance for all workers documented. -Effective functioning grievance mechanism -E&S training regularly conducted and CoC documented. 	No other budgetary requirements.
Gender Based Violence <ul style="list-style-type: none"> ➢ Risks of Sexual Exploitation and 	<ul style="list-style-type: none"> ➢ Maintain and operationalize the Workers' GM, with clearly established GBV referral mechanisms. ➢ Ensure that the code of conduct contains specific clauses on the prevention of GBV (SEA/SH) and circulated to all contracted 	<ul style="list-style-type: none"> ➢ Verify signed Code of Conduct for each worker. ➢ Verify availability of GBV referral pathways. 	Al Jebrini HR Department E&S Focal Point	<ul style="list-style-type: none"> ➢ Al Jebrini Management 	<ul style="list-style-type: none"> - 100% of workers trained and signed CoC; 	Training sessions are covered under general E&S orientation training

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementati on Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance (O&M) Phase (PV System)						
Abuse (SEA) and Sexual Harassment (SH) impacting female workers.	<ul style="list-style-type: none"> project workers and that it is covered within their training. Workers must read and sign the Code of Conduct Provide comprehensive GBV awareness training to all staff, covering definitions, prevention strategies, CoC adherence, and reporting mechanisms. Specialized training sessions for female workers on GM procedures and GBV reporting/referral processes should be conducted under the new factories' procedures. 	<ul style="list-style-type: none"> Verify functionality and usage of Workers' GM. 		<ul style="list-style-type: none"> Al Jebrini Human Resources Department Frequency: Quarterly or as required 	<ul style="list-style-type: none"> - Zero unresolved GBV incidents or complaints. - 100% worker participation in GBV training and CoC adherence. 	budget (~300 USD per session for hospitality, printing, and miscellaneous expenses). No additional specific budgetary requirements.
Fire Hazards and Risks <ul style="list-style-type: none"> Fire from electrical faults or system malfunctions. Battery overheating, overcharging and malfunctioning. 	<ul style="list-style-type: none"> Conduct routine inspection and preventive maintenance of inverters, wiring, junction boxes, and panel connectors. Keep electrical components clean, dry, and free from dust, corrosion, and debris. Implement a Log-Out/Tag-Out (LOTO) procedure for all maintenance activities. Install surge protection devices and overcurrent protection (breaker/fuse systems) at critical points. Maintain clear access to fire extinguishers, emergency shutoff switches, and isolation points. Train staff on electrical hazard identification, emergency shutdown procedures, and fire response. Use battery management systems with real-time monitoring of temperature, charge/discharge rates, and cell health. Ensure proper ventilation and thermal management in battery area. Install overcharge protection devices and ensure inverters/chargers are correctly programmed to manufacturer limits. Conduct periodic inspections using thermal sensors. Inspect battery connections, terminals, and cables regularly for corrosion, looseness, or damage. 	<ul style="list-style-type: none"> Regular inspection of electrical components. Verify functionality of surge protection and overcurrent protection devices. Track any reported electrical faults or near-miss incidents. Monitor the operation of fire detection systems and the condition and accessibility of fire extinguishers. Review maintenance logs and LOTO records Monitoring battery temperature, voltage, and charge/discharge rates Regular physical inspection of PV system Monitor and record battery performance indicators Regular inspections of PPE availability and usage. 	Al Jebrini's OHS Supervisor	<ul style="list-style-type: none"> Al Jebrini E&S Focal Points; Frequency: Weekly inspections or as required 	<ul style="list-style-type: none"> -Zero incidents of electrical fires or battery overheating. -All emergency shutdown switches and isolation points functional. -No evidence of battery leakage, swelling, or other damage. 	No additional Budgetary Requirements, (should be included in the purchased system)

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation on Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance (O&M) Phase (PV System)						
Community Health and Safety <ul style="list-style-type: none"> ➤ Not maintaining Stakeholder Engagement ➤ Risks from potential fires and emergency situations during installation works. 	<ul style="list-style-type: none"> ➤ Continue regular stakeholder engagement throughout operational phase. ➤ Maintain records and logs of stakeholder engagement activities, and official visits, clearly documenting participants, concerns raised, follow up actions, and resolutions provided. ➤ Conduct routine inspections of fire safety equipment (fire extinguishers, hoses, alarms, emergency exits) with maintenance records documented. ➤ Maintain visible emergency and fire safety signage, including clear emergency assembly points. ➤ Regularly update and implement the ERP. ➤ Conduct regular fire drills and emergency response training for all workers. 	<ul style="list-style-type: none"> ➤ Review records and logs of stakeholder engagement and information disclosure regularly. ➤ Review ERP availability. ➤ Verify records and logs for the fire and emergency response training for workers ➤ Visual inspection of signs availability. 	AI Jebrini Management	<ul style="list-style-type: none"> ➤ AI Jebrini E&S Focal Point ➤ <u>Frequency:</u> Monthly or as required 	<ul style="list-style-type: none"> - Zero community complaints related to lack of communication or inadequate consultation. -ERP implementation records and emergency drill evaluations completed. -all emergency exits accessible and clearly marked 	No additional Budgetary Requirements
Occupational Health and Safety <ul style="list-style-type: none"> ➤ Risks from the installation of the PV system and relevant equipment (e.g., electrical shock, falls, injuries, slip and trip... etc.). ➤ Inadequate capacity and awareness among workers and contractors. ➤ Lack of PPE and compliance to their use. 	<ul style="list-style-type: none"> ➤ Maintain the implementation of the OHS Plan and ERP according to ESMP requirements. ➤ Ensure mandatory PPE availability and usage compliance. ➤ For electrical works, only skilled workers will be allowed in the vicinity of works. ➤ Secure tools, equipment, and materials to prevent them from falling from rooftops. ➤ Maintain the established exclusion zones or barriers around work areas to protect workers and bystanders from falling objects. Display visible warning signs, barriers, and caution tape around the working area perimeter to alert and prevent unauthorized entry ➤ Conduct annual OHS orientation training. ➤ Provide first aid kits on the site. ➤ Monitor weather conditions and suspend work during adverse conditions. ➤ Coordinate and locate the nearest medical facility/ hospital to the site. Numbers of first aid response services shall be circulated to workers. 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability and usage. ➤ Inspect training records. ➤ Audit first aid kits' availability, condition, and accessibility. ➤ Availability of incident and accident log. 	Contractors (supervised by AI Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> ➤ AI Jebrini E&S Focal Point ➤ MoL. ○ <u>Frequency:</u> Weekly inspections during or as required during maintenance activities. 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded -Workers' adherence to PPE protocols. -Adequately documented OHS training logs and toolbox meetings. 	No additional Budgetary Requirements

8.1.4. DECOMMISSIONING PHASE

Table 10: E&S Management and Monitoring Matrix for the Decommissioning Phase – Solar PV Subproject

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Decommissioning Phase (PV System)						
<p>Solid Waste</p> <ul style="list-style-type: none"> ➤ Generation of large volumes of dismantled materials at the end of the system's service life (or in case of major upgrading. ➤ Risk of uncontrolled or random dumping of dismantled equipment or scrap within the site or at informal dumps. ➤ Risk that reusable components are mixed with waste and lost instead of being reused or recycled. 	<ul style="list-style-type: none"> ➤ Prepare a PV-specific Decommissioning Plan before works start, detailing dismantling methods, expected waste streams, reuse / resale options and destinations for recycling and disposal, consistent with General EHS Guidelines for construction and decommissioning. ➤ Segregate materials at source into: (i) intact modules and equipment suitable for resale or reuse; (ii) recyclable metals (aluminum frames, steel structures, copper cables); and (iii) residual waste. Prioritize reuse and recycling where feasible. ➤ Store dismantled modules, frames and other materials in orderly stacks on pallets or in designated containers, away from roof edges and access routes, to avoid breakage and falling objects. ➤ Transport residual solid waste only to licensed municipal / industrial disposal sites in coordination with the municipality / JSC; keep disposal receipts and simple records of quantities. ➤ Prohibit open burning of any waste. 	<ul style="list-style-type: none"> ➤ Verify that a Decommissioning Plan has been prepared, approved and is being implemented. ➤ Periodic visual inspections of roofs and storage areas to confirm segregation, orderly stacking and absence of abandoned waste. ➤ Review of waste transfer notes / receipts from licensed recyclers and disposal sites. 	<p>Decommissioning Contractor</p> <p>Al Jebrini Management</p>	<p>Al Jebrini E&S focal points</p> <ul style="list-style-type: none"> ○ <u>Frequency:</u> Weekly during decommissioning works and after completion. 	<ul style="list-style-type: none"> - PV system dismantled with no evidence of random dumping. - Intact modules and recyclable metals documented as reused / recycled. - All residual waste transferred to licensed facilities with receipts. 	<p>Included in decommissioning contractor's obligations and contract price (transport and recycling costs to be reflected in decommissioning budget).</p>
<p>Hazardous Materials and Waste (including Batteries and Broken Modules)</p> <ul style="list-style-type: none"> ➤ End-of-life PV modules, inverters and batteries classified as e-waste and 	<ul style="list-style-type: none"> ➤ Treat batteries, inverters, electronic components and broken PV modules as hazardous / e-waste in line with Palestinian Hazardous Waste Management System No. 6 of 2021 and EQA guidance. ➤ Where feasible, negotiate take-back arrangements with PV module, inverter and battery suppliers or specialized e-waste recyclers and transfer end-of-life equipment to licensed recovery / recycling facilities. ➤ Store batteries in robust, non-reactive containers or original packaging on spill-containing pallets in a dedicated, ventilated indoor area away from ignition sources; keep broken or cracked 	<ul style="list-style-type: none"> ➤ Regular inspections of hazardous / e-waste storage areas (containment, labelling, ventilation, housekeeping). ➤ Review manifests / receipts from licensed hazardous-waste / e-waste 	<p>Decommissioning Contractor</p> <p>Al Jebrini Management</p> <p>Al Jebrini OHS Supervisor / E&S Focal Point</p>	<p>Al Jebrini E&S focal points</p> <p>EQA (as part of regulatory oversight)</p> <ul style="list-style-type: none"> ○ <u>Frequency:</u> Weekly during decommissioning and after each 	<ul style="list-style-type: none"> - All batteries, inverters and PV modules transferred to licensed facilities or supplier take-back schemes. - No mixed disposal of hazardous / 	<p>Spill kits and dedicated storage already budgeted under O&M; incremental cost for e-waste transport and treatment to be included in decommissioning contract.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation on Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Decommissioning Phase (PV System)						
<ul style="list-style-type: none"> ➤ potentially containing hazardous substances ➤ Risk of spills or leaks of battery electrolyte or other chemicals during dismantling, storage and transport. ➤ Risk that hazardous waste and broken modules are mixed with non-hazardous waste and sent to uncontrolled dumps. 	<ul style="list-style-type: none"> modules on pallets in a covered, secure area to avoid glass dispersion and weathering. ➤ Maintain spill kits (absorbents, neutralizing agents, PPE, containers) near battery and hazardous-waste storage; train workers on spill prevention and response procedures. ➤ Use clearly labelled, closed containers for all hazardous wastes (batteries, modules, oily rags, absorbents, empty chemical containers) and keep a simple register (type, quantity, date, off-site destination). ➤ Explicitly prohibit disposal of PV modules, batteries or inverters in municipal or informal dumps through contractual clauses with decommissioning contractors. 	<ul style="list-style-type: none"> ➤ transporters and facilities. 		<ul style="list-style-type: none"> hazardous-waste shipment. 	<ul style="list-style-type: none"> - e-waste with general waste. - No uncontrolled spills or leaks recorded; any incidents effectively contained and cleaned. 	
<p>Labor Rights and Working Conditions</p> <ul style="list-style-type: none"> ➤ Risk of non-compliance with PLL and minimum wage decree due to short-term nature of decommissioning contracts (informal hiring, lack of written contracts, uninsured workers). ➤ Weak access to an effective workers' GM. 	<ul style="list-style-type: none"> ➤ Apply to decommissioning workers the same labor rights measures as defined for supply / installation and O&M phases, ➤ Require decommissioning contractors to adopt Al Jebrini's Workers' GM and to inform workers about uptake channels and protection from retaliation. 	<ul style="list-style-type: none"> ➤ Review sample of contracts, pay slips, insurance policies and worker registers for decommissioning staff. ➤ Check that Workers' GM is communicated and accessible to decommissioning workers and that any grievances are recorded and addressed. 	<p>Decommissioning Contractor</p> <p>Al Jebrini HR Department</p>	<p>Al Jebrini E&S focal points</p> <p>MoL (as applicable)</p> <ul style="list-style-type: none"> ○ <u>Frequency:</u> At contract signing and mid-way through decommissioning. 	<ul style="list-style-type: none"> - 100% of decommissioning workers engaged under written contracts, insured and paid at or above minimum wage. - Workers' GM functional and used without retaliation. 	<p>Included in contractor's obligations and HR administrative costs (no additional specific budget).</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Decommissioning Phase (PV System)						
<p>Gender-Based Violence (GBV), SEA and SH</p> <p>➤ Short-term presence of decommissioning workers interacting with existing dairy and plastics factory staff, including female workers, with associated SEA/SH risk.</p>	<p>➤ Extend the project Code of Conduct (with explicit GBV/SEA/SH clauses) to all decommissioning contractors and workers; ensure it is explained and signed before work starts.</p> <p>➤ Maintain and publicize confidential GBV-sensitive channels within the Workers' GM, with survivor-centered handling and referral pathways to specialized service providers as set out in the project GM annex.</p> <p>➤ Conduct focused toolbox talks on acceptable behavior, zero tolerance of GBV/SEA/SH, and consequences of non-compliance; enforce disciplinary measures where breaches occur.</p>	<p>➤ Verify that all decommissioning workers have signed the CoC and received GBV/SEA/SH briefing.</p> <p>➤ Periodic review of GM records (without breaching confidentiality) to confirm that GBV-related complaints, if any, are handled according to procedures and referral pathways.</p>	<p>Decommissioning Contractor</p> <p>Al Jebrini HR & E&S focal points</p>	<p>Al Jebrini Management</p> <p>○ <u>Frequency:</u> At mobilization and then periodically during decommissioning.</p>	<p>- 100% decommissioning workers trained and signed CoC.</p> <p>- No substantiated GBV/SEA/SH incidents; if any occur, they are addressed through survivor-centered procedures.</p>	<p>Covered under general E&S orientation / training budget; no additional specific budget required.</p>
<p>Fire, Electrical and Structural Safety</p> <p>➤ Electrical hazards during isolation and dismantling of DC/AC circuits and batteries (shock, arc flash)</p> <p>➤ Fire risk from mishandling or short-circuiting of batteries and cabling during removal and transport.</p> <p>➤ Risk of compromising roof waterproofing or structural integrity when removing</p>	<p>➤ Prepare and implement a detailed switching and isolation procedure for PV strings, inverters and batteries; apply lock-out / tag-out and verify absence of voltage before dismantling</p> <p>➤ Ensure all electrical and battery-related works are supervised and executed by qualified electricians / PV technicians familiar with manufacturer instructions.</p> <p>➤ Keep suitable fire extinguishers (rated for electrical / battery fires) available during dismantling; integrate decommissioning into the facility ERP and inform Civil Defense of the schedule.</p> <p>➤ Conduct joint pre- and post-decommissioning inspections of roofs; properly seal all penetrations and restore waterproofing layers and flashings; replace any damaged roofing materials; ensure no sharp elements or trip hazards remain.</p>	<p>➤ Review and approval of written switching / isolation procedure and LOTO records.</p> <p>➤ Verification of qualifications of electricians / PV technicians.</p> <p>➤ Periodic visual checks of availability and condition of fire extinguishers and emergency equipment during decommissioning.</p> <p>➤ Inspection reports on roof condition before and after decommissioning, including photographic evidence of reinstatement.</p>	<p>Decommissioning Contractor</p> <p>Al Jebrini OHS Supervisor & Technical Team</p>	<p>Al Jebrini E&S focal points</p> <p>Civil Defense (as part of approvals / inspections)</p> <p>○ <u>Frequency:</u> Daily checks during electrical dismantling; roof inspections at start and end of decommissioning.</p>	<p>- No electrical-shock or fire incidents during decommissioning.</p> <p>- Roofs reinstated with no leaks or structural issues reported after decommissioning.</p>	<p>Fire protection already budgeted under O&M; any roof repairs / reinstatement to be included in decommissioning and building maintenance budget.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Decommissioning Phase (PV System)						
anchors, mounts and conduits						
Community Health and Safety <ul style="list-style-type: none"> ➤ Short-term increases in traffic, noise and dust from cranes, trucks and lifting equipment. ➤ Potential exposure of community members to stored e-waste or hazardous materials if left unsecured. 	<ul style="list-style-type: none"> ➤ Apply traffic and access management measures similar to the installation phase (routing of trucks, speed limits, daylight working hours where feasible). ➤ Establish clearly marked exclusion zones underneath roof edges and lifting areas; restrict public and non-essential staff access during decommissioning hours. ➤ Store dismantled equipment and e-waste in fenced or locked areas within the site, inaccessible to the public. ➤ Maintain communication with neighboring stakeholders regarding timing and duration of decommissioning activities. 	<ul style="list-style-type: none"> ➤ Visual inspections of exclusion zones, barriers and signage. ➤ Monitoring of truck movements and adherence to agreed routes / speed limits. ➤ Review of any community complaints related to decommissioning works. 	Decommissioning Contractor Al Jebrini Management	Al Jebrini E&S focal points EQA / Municipality (as relevant) <ul style="list-style-type: none"> ○ <u>Frequency:</u> Throughout decommissioning period. 	<ul style="list-style-type: none"> - No community injuries or traffic accidents associated with decommissioning. - No justified complaints regarding unsafe access or uncontrolled storage of e-waste. 	Included in decommissioning contractor's obligations; minor cost for temporary signage and barriers
Occupational Health and Safety <ul style="list-style-type: none"> ➤ Similar OHS risks as during installation, with additional hazards from ageing equipment: working at height, falling objects, manual handling of heavy components, electrical hazards, sharp edges, glass fragments and residual chemicals / dust. 	<ul style="list-style-type: none"> ➤ Apply the OHS Plan and ERP used for installation, updated to explicitly cover decommissioning tasks (safe work at height, electrical safety, manual handling, housekeeping). ➤ Provide decommissioning-specific induction and toolbox talks emphasizing manual handling, working at height on ageing structures, and handling of fragile / broken components. ➤ Use appropriate PPE including full-body harnesses, helmets, safety footwear, cut-resistant gloves, safety glasses and dust masks where needed. ➤ Use team lifts and mechanical aids (trolleys, hoists) for heavy components and batteries. ➤ Maintain sanitary facilities and drinking water for all decommissioning workers. 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability, condition and use ➤ Review induction and toolbox-talk records specific to decommissioning. ➤ Check incident / near-miss logs and follow-up corrective actions. ➤ Visual inspections of work-at-height arrangements, access routes and housekeeping on roofs. 	Decommissioning Contractor (under supervision of Al Jebrini OHS Supervisor)	Al Jebrini E&S focal points MoL (as applicable) <ul style="list-style-type: none"> ○ <u>Frequency:</u> Daily safety inspections during active decommissioning works. 	<ul style="list-style-type: none"> - No serious injuries or fatalities; minimal first-aid cases. - All decommissioning workers observed using required PPE and following safe-work procedures. 	PPE and first-aid costs included in decommissioning contractor's obligations; no additional specific budget required.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Decommissioning Phase (PV System)						

8.2. PLASTIC FACTORY SUBPROJECT

8.2.1. FINISHING WORKS AND INSTALLATION PHASE

Table 11: E&S Management and Monitoring Matrix for the Finishing Works and Installation Phase – Plastic Factory Subproject

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
Air Quality > Dust generation from sanding, cutting, or drilling during preparation works can generate dust and particulate matter. > Installation activities that could generate dust, use of solvents for equipment installation and painting, and potential emissions from	> Dust control and road condition: Implement dust-suppression techniques such as wetting down unpaved surfaces during periods of intensive vehicle movement and, as committed in the CAP, pave internal roads to the site. Where paving is not yet complete, limit vehicle speeds and confine traffic to designated routes. > Good housekeeping during finishing works: Enclose or screen high-dust activities (e.g. sanding, cutting) where feasible, and ensure regular sweeping/cleaning of work areas to prevent dust accumulation and re-suspension. > Use of low-emission products: Select and utilize low-VOC paints, adhesives and solvents during installation activities, in line with Good International Industry Practice, to reduce emissions of volatile organic compounds. Keep containers closed when not in use and avoid unnecessary use of solvent-based products. > Fume Management During Equipment Setup: Ensure that the site premises include local exhaust ventilation (LEV) systems that are installed and functioning to capture fumes at the source, and ensure that areas are well-ventilated.	> Verify paving of the roads. > Document any air quality concerns by site supervisors > Document any grievances received on air quality matters > Site monitoring visits	Contractors (with oversight by Al Jebri's OHS Supervisor/E&S focal point)	> Al Jebri's OHS Supervisor/ E&S focal points; o <u>Frequency:</u> Weekly during installation activities	-All roads to the site are paved. -Minimal visible dust during activities. -Complaints recorded reflect appropriate mitigation measures implemented -Maintenance records of HVAC and LEV systems	Included in contractors' obligations. additional Budgetary Requirements for road paving as it is part of the project budget.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
<ul style="list-style-type: none"> ➤ welding or cutting. Exhaust emissions 	<ul style="list-style-type: none"> ➤ Vehicle and equipment emissions: Require all trucks, forklifts, cranes and generators used on site to be in good mechanical condition and compliant with national vehicle inspection requirements; avoid unnecessary idling and plan deliveries so as to minimize queuing and congestion. ➤ Worker protection: Provide workers involved in high-dust or fume-generating activities with appropriate respiratory protection and eye protection, in line with the OHS section. 					
<ul style="list-style-type: none"> ➤ Noise from installation activities. ➤ Noise from transportation and Delivery of Equipment. 	<ul style="list-style-type: none"> ➤ Noise Generation from Installation Activities: <ul style="list-style-type: none"> ○ Comply with ambient noise level limits in specifications No. PS 840- 2005 ○ Ensure proper maintenance and timely servicing of equipment and machinery used during preparation and installation works to minimize noise emissions. ○ Provide workers with suitable personal protective equipment (PPE), such as earplugs or earmuffs, to mitigate occupational noise exposure. ○ Conduct noise measurements during high noise emitting activities to ensure compliance with ambient noise quality standards. ○ Ensure that heavy machinery or any noise producing activities are prohibited after 8 PM till 7 AM and all-day during Fridays and any public and local holiday, unless an approval has been obtained by the local authorities. ➤ Transportation and Delivery of Equipment: Minimize unnecessary idling of trucks and machinery during loading and unloading to reduce noise emissions. Also, schedule equipment transportation and deliveries within regular daytime working hours. 	<ul style="list-style-type: none"> ➤ auditory inspections during activities. ➤ Noise measurements. ➤ Review of maintenance records for equipment and vehicles. ➤ Inspection of PPE usage compliance. ➤ Logs of transport times. 	Contractors and Suppliers	<ul style="list-style-type: none"> ➤ Al Jebrini OHS Supervisor/ E&S Focal Point ○ <u>Frequency:</u> Daily inspections during high-noise activities. 	<ul style="list-style-type: none"> -Compliance with allowable ambient noise levels - No community / workers complaints regarding noise. -Proper documentation of noise monitoring -Documentation and records of maintenance of machinery 	Cost of noise measurement equipment already accounted for in PV solar energy subproject. This device will be transferred to the plastic factory while a new one will be bought for the dairy factory.
<ul style="list-style-type: none"> ➤ Generation of waste from installation works. ➤ Risk of random waste dumping in unauthorized areas. 	<ul style="list-style-type: none"> ➤ Waste segregation and on-site storage: Provide clearly marked and covered waste bins / containers throughout work areas, and segregate waste at source into at least: (i) construction and demolition debris, (ii) recyclables (metals, cardboard, plastics), and (iii) residual mixed waste. Prevent windblown litter by keeping lightweight packaging in bags or covered containers. ➤ Random dumping of waste: Provide clear instructions to contractors and workers on waste management procedures and explicitly prohibit random dumping or burning of waste through E&S induction and toolbox talks. Incorporate waste-management clauses into contractor agreements requiring adherence to 	<ul style="list-style-type: none"> ➤ Regular visual inspection of waste storage areas. ➤ Verify availability of waste bins. ➤ Review training logs and attendance records. ➤ Check waste disposal records and confirm adherence 	Contractors	<ul style="list-style-type: none"> Al Jebrini E&S focal points. ○ <u>Frequency:</u> Daily inspections 	<ul style="list-style-type: none"> - Clear waste collection and disposal onsite. - No incidents of random dumping documented. - Logs of waste disposed of at 	Included in contractors' obligations.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
<ul style="list-style-type: none"> ➤ Poor Housekeeping 	<ul style="list-style-type: none"> national regulations on solid waste and construction and demolition waste. ➤ Site housekeeping: Conduct regular (at least daily) site clean-ups to remove discarded materials and keep floors, circulation routes, emergency exits and stairways free of debris. Designate temporary storage areas for construction waste away from access routes and ignition sources. ➤ Off-site transport and disposal: Coordinate with the municipality / Joint Services Council or licensed private collectors to ensure that all non-hazardous solid waste is transported to approved disposal or recovery facilities, and keep basic records (date, type of waste, approximate quantities, destination). 	<ul style="list-style-type: none"> to designated disposal locations. ➤ Inspect contractors' agreements to confirm inclusion of waste management clauses. 			<ul style="list-style-type: none"> designated and approved locations. - Proper waste management clauses included in contracts. 	
<p>Hazardous Material and Waste</p> <ul style="list-style-type: none"> ➤ Use and storage of hazardous materials. ➤ Generation and Disposal of Hazardous Waste. ➤ Accidental Spills and Leaks 	<ul style="list-style-type: none"> ➤ Hazardous materials handling and storage: Establish clearly defined and secure areas for the temporary storage of hazardous materials (paints, solvents, adhesives, lubricants, cleaning agents). Store them in original, clearly labeled containers, with lids closed when not in use, and in secondary containment where leakage or spills could occur. Avoid storing incompatible substances together and keep hazardous materials away from floor drains and ignition sources. ➤ Hazardous waste segregation and disposal: Segregate hazardous waste (used oils, solvent residues, paint and adhesive containers, contaminated rags and absorbents) from non-hazardous construction waste. Prohibit open dumping, burning or discharge to drains. Liaise with MoH and EQA on the disposal of hazardous waste in line with the Palestinian hazardous waste management system No. 6 of 2021, and use only licensed haulers and approved facilities for its transport and final treatment or disposal. Keep basic records of quantities, types of hazardous waste and dates of off-site transfer. ➤ Safe work practices, information and PPE: Provide workers who handle hazardous materials with adequate PPE such as chemical-resistant gloves, goggles or face shields, respirators/masks where needed, safety shoes and protective clothing, in line with the relevant MSDSs. Ensure that Material Safety Data Sheets (MSDSs) for all hazardous products used on site are available, in Arabic where possible, and that workers are trained on safe handling, mixing, application and clean-up procedures, including 	<ul style="list-style-type: none"> ➤ Visual inspections for storage areas, labeling, containment adequacy, and spill kits availability. ➤ Verification of PPE availability and usage by workers. ➤ Review records of hazardous waste disposal and transportation. 	Contractors (with oversight by Al Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points <ul style="list-style-type: none"> ○ <u>Frequency:</u> Daily inspections. 	<ul style="list-style-type: none"> - Properly secured and labeled hazardous material storage areas. - Availability and correct usage of PPE and spill kits. 	<ul style="list-style-type: none"> - Included in contractors' obligations. -Approximately USD 100 for spill kits.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
	<ul style="list-style-type: none"> prohibitions on eating, drinking or smoking in handling areas and requirements for hand-washing. ➤ Spill prevention and emergency response: Maintain good housekeeping in storage and work areas to minimize the risk of leaks and spills. Provide clearly marked spill kits and absorbent materials near storage and use areas, and train workers on their proper use. Any spills or leaks of hazardous materials are to be contained immediately, collected with suitable absorbents, and managed as hazardous waste. ➤ ERP: Integrate spill response, notification and first-aid measures into the site Emergency Response Procedures (ERP), including emergency contact numbers and reporting lines. 					
<p>Labor Rights and Working Conditions</p> <ul style="list-style-type: none"> ➤ Non-compliance with Palestinian Labor Law (PLL) regarding working hours, wages, and benefits. ➤ Workers not covered by valid injury insurance. ➤ Child Labor ➤ Absence or ineffectiveness of a workers' grievance mechanism. ➤ Risk of workers' wages below the minimum wage requirements (Act No.4 of 2021). ➤ Insufficient provision of 	<ul style="list-style-type: none"> ➤ Contractual Obligations: <ul style="list-style-type: none"> ○ Ensure that all contracts with contractors and subcontractors explicitly state the need to adhere to labor laws, including age and wage requirements, working hours, and benefits. ○ Contractors are to submit their workers' contracts to the employer to ensure appropriate labor rights are included in the PLL. The contracts will include the workers' ID numbers (attached with copies of workers' ID), which will allow the employer to check the ages of the workers. ○ Periodic monitoring shall also include a review of a sample of workers' pay slips to ensure adherence to Act No.4 of 2021. ○ For direct workers ensure that all new workers are provided with contracts that clarify rights, responsibilities, wages, working hours, benefits, and other aspects as stipulated in the PLL. ➤ Mandatory Insurance: <ul style="list-style-type: none"> ○ Make it mandatory for contractors and subcontractors to provide valid injury insurance policies for all workers before commencing work. ○ Regularly verify the validity of insurance policies and ensure they are in line with the PLL. ○ All direct workers must be included in a valid injury policy. ➤ Minimum Wage: Ensure that contractors and suppliers have signed contracts with their workers with the minimum requirements of the PLL and Act No.4 of 2021 are implemented. ➤ E&S Capacity: Project Workers shall receive an E&S orientation training prior to the commencement of their activities covering the CoC, GM, OHS, ERP, and the ESMP overall. 	<ul style="list-style-type: none"> ➤ Review of worker contracts, pay slips, and insurance policies. ➤ Verification of availability and accessibility of GM and CoC. ➤ Review of orientation training attendance logs and content. ➤ Medical tests and insurance records. 	Contractors	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points ➤ MOL ○ <u>Frequency:</u> monthly or as needed. 	<ul style="list-style-type: none"> -Workers' contracts comply with PLL. - Pay slips confirm minimum wage adherence. - Valid insurance for all workers documented. - GM is accessible, effective, and utilized. - Proper facilities provided and maintained. - Orientation training and CoC documented. 	Included contractors' obligations.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
resting areas, washrooms, and drinking water (Cabinet Decision No.15 of 2003).	<ul style="list-style-type: none"> ➤ Grievance Mechanism: Contractors shall develop a Workers' Grievance Mechanism with appropriate uptake channels with supervision from the project owner and in accordance with the Project's Workers' GM. The Contractor's Workers' GM shall contain effective uptake channels and clearly defined resolution and review timelines with monthly reporting to be provided to the project owner. ➤ Workers' E&S orientation and capacity: <ul style="list-style-type: none"> ○ Provide E&S orientation training to all project workers prior to commencing activities, covering the Code of Conduct (CoC), workers' GM, OHS measures, ERP, and relevant ESMP requirements. ○ Keep attendance sheets and training materials on file for monitoring and reporting. ➤ Resting facilities, washrooms and drinking water: <ul style="list-style-type: none"> ○ Ensure that all workers, including contracted workers, have access to adequate resting areas, gender-appropriate washrooms and safe drinking water in line with Cabinet Decision No.15 of 2003. ○ Monitor the cleanliness, functionality and availability of these facilities throughout the preparation and installation phase. ➤ Medical examinations: Apply the requirements of Cabinet Decisions No.22 and 24 of 2003 by ensuring that workers undergo pre-employment medical examinations and follow-up examinations as required, especially for those exposed to chemicals or physically demanding work. 					
Fire and Life Safety Hazards and Risks <ul style="list-style-type: none"> ➤ Electrical connections and installation of production lines ➤ Machinery overheating/malfunctioning ➤ Smoking near storage and waste collection areas 	<ul style="list-style-type: none"> ➤ Electrical safety during installation: Ensure proper wiring, configuration and installation of all electrical systems in accordance with manufacturer instructions, local electrical codes and fire safety requirements. All electrical works, including temporary power connections, shall be carried out and supervised by qualified electricians. Conduct basic testing (insulation, earthing, load checks) before energizing equipment or production lines. ➤ Licensing and Compliance: Ensure adhering to the civil defense requirements and codes during works, ensure that no operations can be initiated prior to gaining the Civil Defense permit. ➤ Mechanical and equipment installation: Require that machinery is installed and commissioned strictly in line with manufacturer specifications, including provision of adequate ventilation clearances and access around equipment. Avoid prolonged trial runs or operation of machinery until cooling, ventilation and protection systems are in place and verified. 	<ul style="list-style-type: none"> ➤ Regular checks on electrical connections. ➤ Verification of skilled personnel performing electrical works. ➤ records of housekeeping ➤ Records of any fire accident 	Contractors (supervised by Al Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; ➤ Civil Defense ➤ <u>Frequency:</u> Weekly inspections during installation activities. 	<ul style="list-style-type: none"> - Zero incidents of faulty wiring, loose connections, or overheating detected -No incidents reported -Monitoring and inspection schedule fully implemented 	Cost of installing adequate fire extinguisher relevant to the type of operations (e.g., CO2) for 4 extinguishers to be available in this phase is around 600\$. 600\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
<ul style="list-style-type: none"> ➤ Accumulation of packaging waste ➤ Polymeric dust 	<ul style="list-style-type: none"> ➤ Hot works control: For any welding, cutting or grinding during installation, apply a simple hot-work control procedure: remove combustible materials from the work area where feasible, keep suitable fire extinguishers nearby, and maintain a short fire-watch period after completion of hot works to detect any smoldering. ➤ Fire protection and emergency preparedness: Provide adequate portable fire extinguishers of appropriate types (for example dry-powder and CO₂ for electrical fires) on each floor and near high-risk areas such as electrical panels, equipment rooms and temporary material storage. Ensure that workers receive basic induction on fire safety, extinguisher use and the site Emergency Response Plan, including evacuation routes and assembly points. ➤ Workplace design: Ensure that near granulators and shredders the flooring and walls are non-stick to minimize the amount of dust that could settle. ➤ Smoking control: Prohibit smoking inside buildings, in storage areas and near waste collection points. Designate a smoking area outside the building, away from packaging waste, chemicals and other flammable materials, and display clear no-smoking and smoking-area signage. ➤ Combustible waste and housekeeping: Implement daily housekeeping practices; collect packaging materials, plastics, cardboard and other combustible waste in designated containers away from ignition sources, and arrange for their regular removal through the municipal or licensed solid-waste system. Do not allow packaging waste to accumulate in yards or under direct sun adjacent to the building. ➤ Life and fire safety arrangements during works: As fire alarm, detection, emergency lighting and exit-signage systems are installed, ensure they are progressively kept in service throughout the works phase where practicable. Keep fire doors operable and not wedged open, and do not cover or disable detectors once installed. ➤ Emergency exits and evacuation routes: Clearly mark emergency exits and escape routes and keep them free of stored materials, tools, scaffolding and waste at all times. Maintain unobstructed access for emergency vehicles to the main entrances of the facility, and assign a focal person to carry out routine checks of exits and escape routes during the finishing and installation works. 					

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
Community Health and Safety <ul style="list-style-type: none"> ➤ Inadequate Stakeholder Engagement ➤ Risks from potential fires and emergency situations during installation works. 	<ul style="list-style-type: none"> ➤ Stakeholder Engagement and Information Disclosure: <ul style="list-style-type: none"> ○ Maintain regular stakeholder engagement with nearby residents, local authorities and other interested parties throughout the planning, finishing works and installation, and subsequent operational phases, in line with ESS10 and the project SEP. ○ Provide prior notice to neighboring land users and businesses of activities that may cause short-term disturbance, such as deliveries of large equipment, or noisy works. ○ Maintain records and logs of stakeholder engagement activities, documenting participants, issues raised, and responses and follow-up actions. ○ Disclose project information, including key E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in Arabic, using accessible formats and channels (for example notice boards at the site entrance, municipal announcements or social media). ○ Ensure communities are aware of the company's external grievance mechanism, including uptake channels and response timelines. ➤ Fire and Emergency Preparedness: <ul style="list-style-type: none"> ○ Implement LFS mitigation measures above. 	<ul style="list-style-type: none"> ➤ Verify records and logs of stakeholder engagement and information disclosure. ➤ Ensure Civil Defense engagement. ➤ Review ERP availability. ➤ Verify records and logs for the fire and emergency response training for workers ➤ Visual inspection of signs availability. 	Al Jebrini Management Contractors	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points ➤ EQA ➤ <u>Frequency:</u> Weekly or as required 	<ul style="list-style-type: none"> - Zero community complaints related to lack of communication or inadequate consultation. -All key project and E&S documents disclosed in Arabic through appropriate channels. -ERP implementation records and emergency drill evaluations completed. -all emergency exits accessible and clearly marked 	No additional Budgetary Requirements
Occupational Health and Safety <ul style="list-style-type: none"> ➤ Occupational Health and Safety. ➤ Inadequate capacity and awareness among workers and contractors. ➤ Lack of PPE and compliance to their use. ➤ Inadequate Emergency 	<ul style="list-style-type: none"> ➤ OHS planning and responsibilities: <ul style="list-style-type: none"> ○ Require all contractors and suppliers involved in finishing works and equipment installation to implement the project OHS Plan consistent with Al Jebrini's corporate OHS procedures, Palestinian OHS legislation, the WB General EHSs and the Metal, Plastic and Rubber Products EHSs. ○ Appoint a competent OHS focal point from each contractor and supplier to supervise day to day implementation of the OHS Plan and coordinate with Al Jebrini's OHS Supervisor. ➤ Training, induction and toolbox talks: <ul style="list-style-type: none"> ○ Provide all workers with OHS orientation before starting work, covering site rules, key hazards, PPE requirements, emergency response, and workers' grievance mechanism. ○ Conduct regular toolbox talks on specific risks such as manual handling, slips and trips, electrical safety, work at height and housekeeping, and keep attendance records. ➤ Safe work practices during installation: 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability and usage. ➤ Ensure OHS measures integrated into contractor's contracts and operational procedures. ➤ weekly toolbox meeting and reports documentation review. ➤ Availability of incident and accident log. ➤ Housekeeping monitoring 	Contractors (supervised by Al Jebrini's OHS Supervisor)	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; MoL. ○ <u>Frequency:</u> Weekly inspections during installation activities. 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded -Workers' adherence to PPE protocols. -Adequately documented OHS training logs and toolbox meetings. 	Cost of PPEs range around 50\$ per worker and is to be included in contractors' obligations. First aid kits cost ~ 150\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Finishing Works and Installation Phase (Plastic Factory)						
Preparedness and Response	<ul style="list-style-type: none"> ○ Ensure that all electrical installation, testing and energization works are carried out only by qualified electricians, under a permit to work system that includes isolation, lock out and testing before re-energizing. ○ Provide suitable and inspected access equipment for work at height (ladders, scaffolds, platforms) and prohibit unsafe practices such as working from improvised platforms. ○ Organize storage of materials, equipment and tools so that walkways, stairways and emergency exits remain unobstructed and slip, trip and fall risks are minimized. ○ Apply safe manual handling practices and use mechanical aids (trolleys, pallet jacks, forklifts) where practicable for heavy or bulky items. ➤ PPE provision and compliance: <ul style="list-style-type: none"> ○ Require contractors to provide workers, at no cost, with adequate PPE appropriate to their tasks (for example safety shoes, helmets, high visibility vests, gloves, eye and hearing protection, and respiratory protection where needed) and to replace damaged PPE. ○ Carry out regular inspections to verify availability, condition and correct use of PPE and enforce compliance through corrective actions where noncompliance is observed. ➤ Emergency preparedness and first aid: <ul style="list-style-type: none"> ○ Integrate the facility's ERP into the OHS Plan and communicate it to all workers, including evacuation routes, assembly points, alarms and responsibilities. ○ Provide adequate and accessible first aid kits on site and ensure that a sufficient number of trained first aiders are present during working hours. ○ Coordinate with the nearest medical facility or hospital, display emergency contact numbers clearly at the workplace and ensure that transport is available for medical evacuation when needed. ➤ Incident reporting and continual improvement: <ul style="list-style-type: none"> ○ Require contractors to record, investigate and report all accidents, near misses and unsafe conditions, share lessons learned with Al Jebirini, and implement corrective measures to prevent recurrence. ○ Compliance with international standards: ○ Ensure that OHS management during the preparation and installation phase is consistent with ESS2 and ESS4 and with Good International Industry Practice as reflected in the World Bank Group EHS&S. 	<ul style="list-style-type: none"> ➤ Inspection tours and visits 				

8.2.2. OPERATION AND MAINTENANCE PHASE

Table 12: : E&S Management and Monitoring Matrix for the Operation and Maintenance Phase – Plastic Factory Subproject

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
Air Quality <ul style="list-style-type: none"> ➤ Fumes from production lines operations ➤ Emissions from production processes ➤ Ventilation system efficiency ➤ Maintenance and repair activities ➤ Emissions from vehicles 	<ul style="list-style-type: none"> ➤ Air Quality Measurements: Conduct periodic workplace and, where relevant, ambient air quality measurements (with a focus on fumes and VOCs in the production hall) to verify compliance with Palestinian ambient air quality standards and applicable occupational exposure limits. ➤ Operator training and SOPs: <ul style="list-style-type: none"> ○ Provide comprehensive training and refresher sessions for operators and maintenance staff on safe operation of molding and ISBM machines, correct temperature and pressure settings, safe handling of resins and additives, and response procedures in case of abnormal odors, visible fumes, or equipment malfunction. ○ Suppliers to provide Al Jebrini with written standard operating procedures in Arabic at the workstations. ○ Supplier to provide Al Jebrini company staff with training on machinery operation. ➤ Preventive maintenance of machinery: Prepare and implement a preventive maintenance schedule for production and utility equipment (molding machines, ISBM line, chillers, compressors, HVAC), including inspection of seals, heaters, cooling circuits, and exhaust points to reduce fugitive emissions and ensure energy-efficient operation. ➤ Temperature Controls: Implement strict temperature control measures to ensure that polymers are not heated beyond recommended temperatures, minimizing the release of aldehydes, butane, and alkenes. ➤ Ventilation and fume capture: <ul style="list-style-type: none"> ○ Ensure that the production areas are equipped with a suitable HVAC system to maintain good indoor air quality and comfortable working conditions. ○ Install and maintain local exhaust ventilation (LEV) or hoods at high-temperature processing points and other locations where fumes are generated, and ensure exhaust ducts discharge safely outside the work area. ○ Where material handling or any granulation produces noticeable dust, fit exhausts with appropriate particulate 	<ul style="list-style-type: none"> ➤ Measurements of air quality in the production premises ➤ Document any grievances received on air quality matters ➤ Daily inspection routines ➤ Maintenance logs of machinery 	Al Jebrini's OHS Supervisor Al Jebrini Technical Team	<ul style="list-style-type: none"> ➤ Al Jebrini OHS Supervisor/ E&S focal points; ○ <u>Frequency:</u> Quarterly 	<ul style="list-style-type: none"> - Ventilation and filtration systems functional and maintained. - Maintenance logs are consistently updated and show compliance with schedule. 	<ul style="list-style-type: none"> ➤ Air Quality test costs estimated around 2000\$. Depending on testing parameters.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<p>control (for example cyclone or bag filter) and keep ductwork and filters in good condition.</p> <ul style="list-style-type: none"> ○ Explore options depending on air quality tests for VOCs and fumes that could include; Installation of local exhaust extraction systems and activated carbon adsorbers; Installation of recuperative / regenerative thermal oxidizers, catalytic / regenerative catalytic oxidizers, condensers or biofilters. The engineering firm should advise on the most appropriate solution based on quality tests. ➤ Evaluation of advanced controls where needed: If air quality monitoring shows recurrent exceedance of applicable limits, commission an engineering assessment to identify technically and economically feasible options for further control of fumes and VOCs (for example additional LEV, activated-carbon polishing units or other suitable abatement systems) and implement the selected measures. ➤ Safe materials and maintenance practices: Use low-VOC paints, solvents and adhesives for maintenance wherever technically feasible. Carry out solvent-using activities only in well-ventilated areas or under dedicated extraction systems, in line with the hazardous materials and waste section of this ESMP. ➤ Worker protection: Provide workers with appropriate PPE for their tasks, including respirators or masks suitable for nuisance fumes or particulate where needed, safety goggles, gloves and protective clothing. Enforce proper use, cleaning and replacement of PPE through supervision and toolbox talks, and base PPE specifications on SDS recommendations. ➤ Vehicle and internal logistics emissions: Maintain trucks, forklifts and other internal transport vehicles in good mechanical condition and compliant with national inspection requirements; avoid unnecessary idling, organize loading and unloading to minimize queuing, and designate internal traffic routes to reduce congestion and localized exhaust build-up near doors and air intakes. 					
<p>Noise</p> <ul style="list-style-type: none"> ➤ High noise levels from operations ➤ Production Line Noise ➤ Vehicular Noise 	<ul style="list-style-type: none"> ➤ Noise level management at source: Implement engineering and administrative controls to reduce noise where it is generated, including routine preventive maintenance of compressors, molding machines, fans and internal logistics equipment, installation of silencers and mufflers where feasible, and use of noise dampening materials around high-noise equipment. ➤ Acoustic insulation and layout: Install acoustic barriers or insulation around high-noise areas, particularly near the air compressor and thermoforming line, and locate the noisiest 	<ul style="list-style-type: none"> ➤ auditory inspections during activities. ➤ Noise measurements. ➤ Review of maintenance records for 	Al Jebrini OHS Supervisor and Maintenance Team	<ul style="list-style-type: none"> ➤ Al Jebrini OHS Supervisor/ E&S Focal Point ➤ EQA ➤ MOL 	<ul style="list-style-type: none"> -Compliance with allowable ambient noise levels - No community / workers complaints regarding noise. 	Cost of noise measurement equipment (Sound Level Meter: already included in the installation phase budget.

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Operation and Maintenance Phase (Plastic Factory)						
	<ul style="list-style-type: none"> equipment away from offices and the site boundary as much as practicable. ➤ Worker protection and hearing conservation: Provide suitable hearing protection (earplugs or earmuffs) to all workers exposed to high noise, post mandatory hearing-protection signage in high-noise areas, and enforce proper use as part of a simple hearing conservation program in line with GILP and the Minister of Labor Decision No. 4 of 2005 on noise exposure in the workplace. ➤ Monitoring and compliance with limits: Carry out routine noise measurements in representative production areas and at the site boundary, weekly during the first three months of operation and at least quarterly thereafter or whenever significant process changes occur. Compare results with the limits in the Minister of Labor Decision No. 4 of 2005 and Palestinian Standard PS 840-2005 for ambient noise; identify and implement corrective actions where levels approach or exceed permissible values. ➤ Use optimization and operational controls: Optimize the operating schedule of high-noise equipment so that machines are turned off or placed in low-load mode when idle, and avoid simultaneous operation of multiple high-noise units when not required. ➤ Maintenance of vehicles and mobile equipment: Ensure continuous preventive maintenance of trucks, forklifts and other vehicles in accordance with manufacturer recommendations, with attention to exhaust systems, brakes and suspension to avoid unnecessary noise and vibration. 	<ul style="list-style-type: none"> equipment and vehicles. ➤ Inspection of PPE usage compliance. ➤ Record each reading with date, location, time, and source of noise ➤ Site monitoring visits 		<ul style="list-style-type: none"> ○ <u>Frequency:</u> Weekly noise measurements initially (3 months), then monthly or as directed by EQA/MOL 	<ul style="list-style-type: none"> -Proper documentation of noise monitoring -Documentation and records of maintenance of machinery 	
Solid Waste <ul style="list-style-type: none"> ➤ Production Waste and Defects. ➤ Mixing Different Types of Waste. ➤ General solid and municipal waste. 	<ul style="list-style-type: none"> ➤ Production scrap, spills and defective products: <ul style="list-style-type: none"> ○ Adhere to the standard operating procedures (SOPs) for start-up, shut-down and mold changes to minimize off-spec preforms, caps and trimmings as provided by the supplier and manufacturer recommendations. ○ Collect clean PET scrap, off-spec preforms and caps in clearly labeled containers and, where technically and hygienically acceptable, re-introduce them into the process or send them to licensed plastic recyclers under documented arrangements. ○ Prohibit open burning or random dumping of any plastic scrap, defective products or other solid waste. ➤ Segregation and management of process versus municipal waste: <ul style="list-style-type: none"> ○ Provide color-coded and clearly labeled containers for: (i) PET process scrap and off-spec products, (ii) packaging materials 	<ul style="list-style-type: none"> ➤ Regular visual inspection of waste storage areas. ➤ Verify availability of waste bins. ➤ Review training logs and attendance records. ➤ Check waste disposal records and confirm adherence to designated disposal locations. 	Al Jebrini Plastic Factory Operations Team and Manager	<ul style="list-style-type: none"> Al Jebrini E&S focal points. ○ <u>Frequency:</u> Weekly internal inspections; Quarterly review by E&S Specialist. 	<ul style="list-style-type: none"> - Clear waste collection and disposal onsite. - No incidents of random dumping documented. - Logs of waste disposed of at designated and approved locations. 	Plastic defected products shredder ~7000\$.

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Operation and Maintenance Phase (Plastic Factory)						
	<ul style="list-style-type: none"> such as cardboard, shrink-wrap and nylon strapping, and (iii) municipal / domestic waste from offices and staff facilities. ○ Designate a paved, covered storage area for segregated process waste, away from storm-water drains and ignition sources, and keep it orderly and free of loose litter. ➤ General factory solid waste and housekeeping: <ul style="list-style-type: none"> ○ Implement daily housekeeping rounds in production, storage and yard areas to collect and remove waste, ensuring that walkways, exits and equipment access remain clear at all times. ○ Reuse packaging materials such as pallets and crates where feasible, and establish arrangements with licensed recyclers for recovery of cardboard, shrink-wrap and other recyclable materials. ○ Agree with the Joint Services Council / municipality on adequate on-site containers and collection frequency for municipal solid waste, and ensure that all municipal waste is transported only to authorized disposal sites in line with applicable Palestinian regulations and municipal bylaws. ○ Maintain a simple waste register that records main waste streams (process scrap, packaging, municipal waste), quantities where practicable, and destinations (reused, recycled, disposed), and review this periodically to identify further opportunities for waste minimization and recycling. 				- Proper waste management clauses included in contracts.	
Hazardous Material and Waste <ul style="list-style-type: none"> ➤ Storage Of Oils and Lubricants. ➤ Spills and Leaks. ➤ Empty Containers and Barrels of Oils and Lubricants. ➤ Maintenance Waste. 	<ul style="list-style-type: none"> ➤ Hazardous materials inventory and purchasing: Maintain an up-to-date register of all oils, lubricants, cleaning agents and other chemicals used on site, indicating quantities and storage locations. Avoid stockpiling and purchase only quantities needed for a reasonable operating period. ➤ Safe storage and containment: <ul style="list-style-type: none"> ○ Store oils, lubricants, cleaning agents and other hazardous materials in a dedicated, ventilated storage area with an impermeable floor and secondary containment (for example bunds or drip trays) sized to hold at least the volume of the largest container. ○ Keep containers closed when not in use and return them to the storage area immediately after use. ○ Segregate incompatible materials and keep hazardous materials away from ignition sources and floor drains. ➤ Labelling and Safety Data Sheets (SDS): <ul style="list-style-type: none"> ○ Clearly label all primary and secondary containers with the chemical name, hazards and basic handling instructions. 	<ul style="list-style-type: none"> ➤ Regular visual inspection of hazardous materials storage areas, secondary containment and labelling. ➤ Spot checks that containers are closed and returned to the designated storage area after use. ➤ Review of hazardous waste transfer notes or manifests and service contracts 	<p>Al Jebrini's OHS Supervisor</p> <p>Al Jebrini Plastic Factory Operations Team and Manager</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points <ul style="list-style-type: none"> ○ <u>Frequency:</u> Daily spot checks by line supervisors on PPE use and safe handling practices. ○ Weekly inspection of hazardous materials storage areas, secondary 	<ul style="list-style-type: none"> - Properly secured and labeled hazardous material storage areas. - Availability and correct usage of PPE and spill kits. 	Approximately USD 100 for spill kits.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<ul style="list-style-type: none"> ○ Maintain up-to-date SDS for all hazardous materials on site and ensure they are accessible in storage areas and at points of use; brief workers on key hazards and first-aid measures. ➤ Spill prevention and response: <ul style="list-style-type: none"> ○ Provide appropriate spill kits (absorbents, tools and waste bags) in storage areas and near points of use, and train workers on their use. ○ Integrate simple spill response procedures in the ERP (stop the source, contain, clean up, report) and keep records of significant spills and corrective actions. ➤ Management of hazardous waste, including empty containers: <ul style="list-style-type: none"> ○ Collect used oils, oily rags, spent filters, contaminated absorbents and empty chemical containers in clearly labelled, covered containers placed on impermeable surfaces with secondary containment. ○ Treat empty containers of oils and chemicals as hazardous waste; prohibit any re-use for water, food or non-industrial purposes. ○ Ensure that hazardous waste is transported and disposed of only through licensed carriers and authorized facilities, in coordination with EQA and other competent authorities and in line with the Palestinian Hazardous Waste Management System No. 6 of 2021. Maintain records/manifests of quantities and destinations. ➤ Training and PPE: <ul style="list-style-type: none"> ○ Provide task-specific training to maintenance and cleaning staff on safe handling, storage and disposal of oils, lubricants and chemicals, and on spill response procedures. ○ Provide and enforce the use of appropriate PPE (for example coveralls, chemical-resistant gloves, safety shoes, goggles/face shields and respiratory protection where required) in line with SDS and manufacturer specifications. 	<ul style="list-style-type: none"> with licensed haulers. ➤ Verification, during OHS inspections, that SDS are available, updated and accessible at storage and use areas. ➤ Visual checks of spill kit availability and condition, and observation of PPE use by workers handling oils, lubricants and chemicals. 		<ul style="list-style-type: none"> containment and spill kits. ○ Quarterly review by the E&S focal point of hazardous waste documentation, manifests and SDS register. 		
Surface Runoff and Stormwater <ul style="list-style-type: none"> ➤ Runoff carrying plastic materials and dust ➤ Runoff contaminated with oils, 	<ul style="list-style-type: none"> ➤ Storm water and site drainage planning: <ul style="list-style-type: none"> ○ Develop and maintain a drainage layout for roofs, paved yards, loading bays, waste storage and parking / maneuvering areas, showing all storm water inlets and discharge points. ○ Ensure roof runoff is collected and discharged away from chemical storage, generator and fuel areas. ➤ Control of plastic pellets and scrap: <ul style="list-style-type: none"> ○ Implement strict housekeeping to prevent pellets, flakes and plastic scrap from accumulating outdoors; use covered containers and designated storage areas on hard standing. 	<ul style="list-style-type: none"> ➤ Inspect storm water inlets, catch pits and grated channels in production yards, around loading bays for accumulation of plastic pellets, flakes, scrap, packaging, oils and sediments. 	Plastic Factory Manager and maintenance team, in coordination with warehouse / logistics supervisor	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal point together with the plastic factory OHS / EHS supervisor. ➤ relevant authorities (municipality, 	<ul style="list-style-type: none"> No visible plastic pellets, flakes or scrap in storm water channels, outlet points or beyond the factory boundary. No persistent oily sheen or chemical 	Included under routine plant housekeeping and maintenance costs (labor for inspections and cleaning, small materials and repairs).

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
<ul style="list-style-type: none"> ➤ lubricants and chemicals ➤ Flooding and ponding around buildings and equipment ➤ Sedimentation and erosion 	<ul style="list-style-type: none"> ○ Install grates, screens or baskets on storm drain inlets in areas where plastic materials are handled, and clean these regularly to capture any pellets or scrap before they enter the drainage system. ➤ Segregation and protection of contaminated areas: <ul style="list-style-type: none"> ○ Store oils, lubricants, solvents and chemical additives in bunded, roofed areas with impermeable flooring; design drainage so that any spills cannot reach storm water inlets. ○ Avoid refueling, oil changes or washing of equipment on bare soil; use designated areas with hard standing and drainage to controlled collection points. ➤ Flooding and erosion control: <ul style="list-style-type: none"> ○ Size gutters, drains and culverts for local design storms; regularly inspect and clean them to prevent blockage by leaves, plastics or sediments. ○ Stabilize outlet points and unpaved areas subjected to concentrated flows through rip-rap, concrete splash pads or vegetated swales to reduce erosion and sediment transport. ➤ Inspection and monitoring: <ul style="list-style-type: none"> ○ Include storm water and runoff management in regular E&S inspections, checking for presence of plastic pellets around drains, evidence of sheens or staining, erosion features and standing water. ○ Record inspection findings and corrective actions; investigate and address any external complaints related to plastics or runoff from the facility. 	<ul style="list-style-type: none"> ➤ During or after heavy rainfall, walk key runoff paths and outlet points to look for visible plastics, oily sheens, discoloration, foam or significant sediment transport; ➤ Inspect unpaved shoulders, temporary storage areas and internal roads for erosion, rills or sediment build-up that could compromise drainage performance. 		<ul style="list-style-type: none"> ➤ EQA as part of periodic supervision. ➤ <u>Frequency:</u> ➤ Routine inspection of storm water inlets and drainage: monthly, with additional checks after major storms. ➤ Cleaning of catch pits, grates and any oil separators: at least quarterly and whenever inspection identifies significant build-up. 	<p>staining observed in runoff at inspection points.</p> <p>Drainage structures functioning with no chronic blockages or flooding issues.</p> <p>Any complaints related to runoff or plastics are infrequent and are closed out with documented corrective actions.</p>	
<p>Energy Use and Utilities</p> <ul style="list-style-type: none"> ➤ High electricity demand and associated GHG emissions ➤ Inefficient operation of utilities ➤ Diesel generator use ➤ Sub-optimal design of 	<ul style="list-style-type: none"> ➤ Energy management and monitoring: Install sub-metering where practicable for major consumers (molding lines, ISBM, compressors, chillers, HVAC) and periodically review specific energy consumption (kWh per ton of product) against internal targets and reference values from GIIP. ➤ Efficient equipment and operation: <ul style="list-style-type: none"> ➤ Select and operate molding machines, compressors, pumps and fans with high-efficiency motors and, where feasible, variable-frequency drives to match load to demand. ➤ Maintain correct settings (temperatures, pressures, cycle times) for all molding and cooling equipment; avoid excessive residence times and unnecessary reheating of polymers. ➤ Ensure adequate thermal insulation on hot lines, molds and, where relevant, chilled-water piping to minimize heat gains and losses. 	<ul style="list-style-type: none"> ➤ Record total and specific electricity consumption from main meters and sub-meters for major consumers (molding lines, ISBM, compressors, chillers, HVAC). ➤ Maintain a log of diesel generator operating hours and fuel consumption; periodically calculate the share 	<p>Plastic Factory Manager and Operations Team.</p> <p>Maintenance and Utilities / Energy Team (including micro-grid operator, where applicable).</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal point in coordination with the Plastic Factory Manager and Maintenance / Utilities Team. ➤ F4J III PMU E&S Specialist / WB supervision missions as part of periodic E&S monitoring. 	<p>Specific electricity consumption (kWh/ton of product) stable or decreasing over time, in line with internal targets.</p> <p>Increasing or at least maintained share of electricity supplied from PV/biogas relative to diesel generation.</p>	<p>For around 10 key loads, submetering installation cost can be around 10,000\$.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
compressed-air and cooling systems	<ul style="list-style-type: none"> ➤ Compressed-air and cooling systems: ➤ Design compressed-air distribution to minimize pressure drops and isolate areas that do not require high pressure; regularly inspect for and repair leaks, and eliminate unnecessary use of compressed air for cleaning or cooling. ➤ Use closed-loop cooling systems for machines and molds as far as practicable, with appropriate water treatment to prevent scaling and corrosion, and regularly maintain cooling towers, chillers and heat exchangers. ➤ Integration with renewable and low-carbon energy sources: ➤ Prioritize supply of the plastic factory's base loads from the rooftop PV system and biogas-based generation within the constraints of the microgrid, in coordination with the dairy and farm operations, to reduce reliance on grid electricity and diesel. ➤ Periodically review the load-sharing strategy between PV, biogas, grid and diesel backup to optimize GHG reductions while maintaining reliability. ➤ Control of diesel generator use: ➤ Restrict generator operation to actual grid outages or testing; avoid non-essential running. ➤ Implement preventive maintenance for generators (engines, exhaust, filters) and manage waste oils and filters under the hazardous waste procedures. 	<ul style="list-style-type: none"> ➤ of electricity supplied from diesel vs. grid vs. PV/biogas. ➤ Review preventive maintenance records for major utilities 		<p><u>Frequency:</u></p> <p>Internal review of energy and generator logs and maintenance records: monthly.</p> <p>Formal E&S performance review including energy KPIs: quarterly and annually.</p>	<p>Diesel generator operating hours limited to actual grid outages and essential testing.</p> <p>Preventive maintenance fully implemented with no recurring breakdowns of key utilities linked to poor maintenance.</p>	
<p>Labor Rights and Working Conditions</p> <ul style="list-style-type: none"> ➤ Noncompliance to Labor Rights (PLL, minimum wage) ➤ Lack of valid injury insurance ➤ Lack of effective grievance mechanism ➤ Lack of worker awareness on E&S 	<ul style="list-style-type: none"> ➤ Employment terms and conditions <ul style="list-style-type: none"> ○ Ensure that every worker has a written employment contract in Arabic that clearly states rights, duties, wages, working hours, overtime arrangements, leave, benefits and termination conditions in line with the Palestinian Labor Law and the minimum wage requirements of Act No. 4 of 2021. ○ Maintain individual personnel files including signed contracts and copies of IDs, and verify workers' age to prevent employment of workers under 18. ➤ Wages and working hours <ul style="list-style-type: none"> ○ Maintain an accurate payroll system that records hours worked, overtime, deductions and net pay. ○ Provide workers with pay slips that show how wages and overtime are calculated. ○ Conduct periodic checks of payroll and working hours to confirm compliance with the PLL and the minimum wage decree, and rectify any identified gaps without delay. ➤ Insurance coverage 	<ul style="list-style-type: none"> ➤ Verification of workers' contracts and compliance with PLL & minimum wage requirements (Act No. 4, 2021). ➤ Verification of valid injury insurance for all workers. ➤ Regular checks on the functioning and effectiveness of the Grievance Mechanism. ➤ Documentation and review of E&S orientation training 	Al Jebrini HR Department	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points ○ <u>Frequency:</u> Quarterly or as needed. 	<ul style="list-style-type: none"> -Workers' contracts comply with PLL. - Pay slips confirm minimum wage adherence. - Valid insurance for all workers documented. - GM is accessible, effective, and utilized. 	<p>medical examination estimated at \$50 per worker every 2 years, estimated at around 1000\$ per year.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
<ul style="list-style-type: none"> responsibilities, rights, grievance mechanism ➤ Non-compliance with required medical examinations 	<ul style="list-style-type: none"> ○ Ensure that all workers are covered by valid injury insurance policies before starting work, in line with the PLL. ○ Keep copies of insurance policies and evidence of premium payments on file and update them as contracts are renewed. ➤ Code of Conduct: Implement and adopt the Code of Conduct (CoC). The CoC shall contain a demarcation of labor rights, responsibilities and GBV related measures that are further discussed below. The code of conduct to be used for this project is the one recommended by the F4II, available in Annex I. ➤ Medical examinations <ul style="list-style-type: none"> ○ Arrange initial medical examinations for all workers prior to or at the time of hiring, in line with Cabinet Decisions No. 22 and 24 of 2003. ○ Ensure follow-up medical examinations at least every two years for this type of industry, and keep confidential medical records and follow-up actions. ➤ Workers' information, E&S capacity and training <ul style="list-style-type: none"> ○ Provide induction training to all workers at hiring and refresher training at least annually on: labor rights and obligations, the Code of Conduct, OHS requirements, emergency response procedures, waste management practices, and the project grievance mechanism. ○ Record attendance and topics covered in training logs and ensure that new or transferred workers receive induction before starting their tasks. ➤ Workers' Grievance Mechanism <ul style="list-style-type: none"> ○ Maintain a Workers' Grievance Mechanism that is accessible, confidential, and allows for anonymous complaints, including GBV/SEA/SH related grievances, with clear non-retaliation provisions and referral pathways as set out in Annex III. ○ Define and implement clear timelines for acknowledgement, review and resolution of grievances, and keep a grievance log that records issues raised, actions taken and closure status. ○ Periodically inform workers about the GM and how to use it through meetings, notice boards and induction sessions. ➤ Fair and transparent recruitment and employment <ul style="list-style-type: none"> ○ Conduct recruitment in a transparent manner, including public vacancy announcements where feasible, shortlisting and selection based on merit and objective criteria. ○ Document the recruitment process, including applications received, evaluation and scoring sheets, and final selection decisions, so they are available in case of audits or grievances. 	<ul style="list-style-type: none"> attendance sheets and training logs. ➤ Periodic reviews of medical examination logs and medical certificates. ➤ Regular checks of signed CoC records. 			<ul style="list-style-type: none"> -Orientation training and CoC documented. -Medical examination compliance documented 	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<ul style="list-style-type: none"> o Ensure that employment decisions are free from discrimination based on gender, disability, social or economic status, or other non-job-related characteristics. 					
<p>Gender Based Violence</p> <ul style="list-style-type: none"> ➤ Risk of SEA and SH against women workers. ➤ Risk of exclusion of women from promotions, leading roles, and workplace development. ➤ Potential retaliation against women reporting GBV incidents. 	<ul style="list-style-type: none"> ➤ GBV-sensitive Workers' Grievance and Referral Mechanism: Ensure that the workers' GM includes confidential, survivor-centered procedures for GBV/SEA/SH cases, with the option for anonymous reporting and for bypassing the direct supervisor. GBV-related complaints should be handled by trained focal points, with clear non-retaliation guarantees and referral pathways to specialized GBV service providers, as detailed in Annex II. ➤ Code of Conduct (CoC): Implement and enforce a written CoC that explicitly prohibits all forms of GBV, including SEA/SH, harassment and discrimination. The CoC shall outline expected behavior, sanctions for non-compliance (up to and including dismissal), and non-retaliation commitments. All workers, supervisors and managers shall review and sign the CoC on hiring and at renewal, and copies shall be displayed in the workplace in Arabic. ➤ Capacity Building and Training: Integrate CoC provisions and GBV mitigation measures into mandatory induction and periodic refresher trainings for all workers and supervisors. Training shall cover basic GBV/SEA/SH concepts, unacceptable behaviors, by-stander responsibilities, confidentiality, survivor-centered response, and the workers' GM and referral options. Attendance and content of trainings shall be documented. ➤ Female-Workers' Specific Information and Support: Provide dedicated sessions for female workers on the GM and GBV referral mechanisms, including available internal focal points and external service providers. Ensure that female workers can report concerns to a trained female focal point if they wish and that reporting does not affect their employment status, performance evaluations or promotion prospects. ➤ Fair and Non-Discriminatory Employment and Career Management: Ensure that recruitment, remuneration, performance appraisal, promotion, training and disciplinary actions are based on merit, skills and objective criteria only, without discrimination based on gender, marital status or other non-job-related characteristics. Periodically review sex-disaggregated HR data (wages, positions, promotions, training access) to identify and address any gender gaps. 	<ul style="list-style-type: none"> ➤ Verify signed Code of Conduct for each worker. ➤ Verify functionality and usage of Workers' GM. 	<p>Al Jebrini HR Department</p> <p>E&S Focal Point</p>	<ul style="list-style-type: none"> ➤ Al Jebrini Management ➤ Al Jebrini Human Resources Department ➤ <u>Frequency:</u> Quarterly or as required 	<ul style="list-style-type: none"> - 100% of workers trained and signed CoC; - Zero unresolved GBV incidents or complaints. - 100% worker participation in GBV training and CoC adherence. 	<p>Training sessions budget (~600 USD per session for hospitality, printing, and miscellaneous expenses) and trainer cost.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
<p>Life and Fire Safety Hazards and Risks</p> <ul style="list-style-type: none"> ➤ Machinery overheating/malfunctioning ➤ Smoking near storage and waste collection areas ➤ Polymeric dust ➤ Electrical faults in distribution systems ➤ Accumulation and storage of combustible waste ➤ Inadequate operation and maintenance of life and fire safety systems ➤ Obstructed emergency exits and evacuation routes 	<ul style="list-style-type: none"> ➤ Life and fire safety management <ul style="list-style-type: none"> ○ Implement the ERP to cover fire scenarios including clear roles, evacuation routes, assembly points, and coordination with Civil Defense. ○ Carry out at least annual fire drills for all shifts, record lessons learned, and implement corrective actions. ➤ Machinery overheating and malfunction <ul style="list-style-type: none"> ○ Operate all production machinery strictly within manufacturer specifications for temperature, pressure, throughput and duty cycle; prohibit overriding of interlocks or safety devices. ○ Implement a preventive maintenance program for molding, granulation and ancillary equipment, including regular inspection of electrical connections, motors, bearings and cooling systems to prevent overheating. ○ Ensure adequate ventilation around heat-generating equipment and keep cooling water and compressed air systems in good working order. ○ Provide automatic overload and over-temperature protection where available and ensure that emergency stop buttons are clearly marked and accessible. ➤ Control of smoking and ignition sources <ul style="list-style-type: none"> ○ Enforce a strict No Smoking policy inside buildings and within designated distances of storage, production and waste collection areas; post clear signs in Arabic and any other relevant language. ○ Provide a clearly marked smoking area away from combustible materials, equipped with metal ashtrays and regular cleaning, and apply disciplinary measures for violations. ○ Management of packaging and other combustible waste: Implement routine housekeeping in production and yard areas so that cardboard, shrink wrap, nylon strapping and other packaging are collected frequently and do not accumulate near machinery, electrical panels or exits. ➤ Prevention and control of polymeric dust hazards <ul style="list-style-type: none"> ○ Equip granulators and other dust-generating equipment with local exhaust ventilation and dust collection systems (for example cyclones or bag filters) designed and maintained according to supplier recommendations. ○ Implement housekeeping procedures that prevent dust accumulation on floors, beams and equipment; use vacuum 	<ul style="list-style-type: none"> ➤ Regular checks and inspection on temperature control and working environment. ➤ records of housekeeping ➤ Records of any fire accident ➤ Periodic inspection and functional testing of fire extinguishers, fire alarm and detection systems, emergency lighting and exit signage, with inspection and maintenance records kept. ➤ Review of preventive maintenance records for production machinery, granulators, electrical distribution systems and dust collection or ventilation systems. 	<p>Al Jebrini Operations and Maintenance Teams;</p> <p>Al Jebrini OHS Supervisor</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; ➤ Civil Defense ➤ <u>Frequency:</u> ➤ Daily housekeeping and visual checks by production supervisors. ➤ Quarterly inspections of life and fire safety equipment and electrical systems by the OHS Supervisor. 	<p>Housekeeping logs show regular collection and removal of combustible waste and polymeric dust.</p> <p>Fire exits, stairways and evacuation routes are unobstructed during spot checks.</p> <p>Fire extinguishers, alarms and detection systems are inspected on schedule, within validity dates, and any deficiencies are corrected within one month.</p> <p>Preventive maintenance schedule for machinery, granulators, electrical panels and dust collection systems is implemented and records are available.</p> <p>No occurrence of uncontrolled fires, explosions or serious overheating</p>	<p>No additional Budgetary Requirements</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<p>cleaners or wet methods instead of dry sweeping or compressed air for cleaning.</p> <ul style="list-style-type: none"> ○ Assess the potential for combustible dust explosion around granulators and dust collectors in consultation with equipment suppliers, and apply appropriate measures such as minimizing enclosed dust clouds, avoiding ignition sources, grounding and bonding of equipment, and installing relief or suppression devices where required. ➤ Fire detection, protection and means of escape <ul style="list-style-type: none"> ○ Provide suitable fire extinguishers (including for electrical and plastic fires) at clearly marked locations along production lines, storage areas and waste collection points, and inspect them regularly. ○ Install and maintain fire alarm and, where applicable, heat or smoke detection systems in accordance with Civil Defense requirements and equipment specifications. ○ Ensure that emergency exits, stairways and escape routes are clearly marked, illuminated, unobstructed at all times and lead to safe external assembly points. ➤ Training and awareness: Provide periodic training for all workers on basic fire prevention, safe use of equipment, housekeeping requirements, polymeric dust hazards, no-smoking rules, and emergency response and evacuation procedures. 				incidents; all minor incidents and near misses are recorded and closed with corrective actions.	
<p>Community Health and Safety</p> <ul style="list-style-type: none"> ➤ Major fire or emergency at the plastic factory ➤ Traffic and road safety: ➤ Residual off-site nuisance from noise and emissions ➤ Inadequate stakeholder engagement and external grievance mechanisms 	<ul style="list-style-type: none"> ➤ Stakeholder engagement and information disclosure: <ul style="list-style-type: none"> ○ Maintain periodic engagement with nearby communities, village councils and municipal authorities to inform them about plant operations, main risks, and key emergency arrangements, in line with ESS10. ○ Disclose a concise non-technical summary of key E&S risks and mitigation measures in Arabic, as well as the full ESIA, including contact details for the community GM. ➤ Community grievance mechanism: <ul style="list-style-type: none"> ○ Maintain a dedicated community grievance mechanism (separate from the workers' GM) with multiple uptake channels suitable for neighbors and road users (phone number / WhatsApp, email, suggestion box at the gate). ○ Ensure that grievances can be lodged anonymously and free of charge, with clear timelines for acknowledgement and response, and that complainants are protected from retaliation. ○ Record, track and close out community grievances, and periodically review trends to identify any recurring community health and safety concerns. ➤ Traffic and road safety for transport of raw materials and products: 	<ul style="list-style-type: none"> ➤ Review records and logs of stakeholder engagement and information disclosure. ➤ Review community GM log (number and type of complaints, response time and closure status). ➤ Visual inspection of fencing, warning signs, speed signs and speed bumps, and gate-access control. ➤ Spot checks on truck routing, loading and driving behavior at 	Al Jebrini Management	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points ➤ Civil Defense ➤ <u>Frequency:</u> Stakeholder Engagement at least annually, site visits and checks to be done quarterly 	<p>Zero major incidents resulting in community injuries or significant off-site damage attributable to plant operations or traffic.</p> <p>Downward or stable trend in CHS-related community complaints, with all grievances documented and closed within agreed timeframes.</p>	<p>Warning signs cost around 300\$.</p> <p>Information board cost around 200\$</p> <p>Speed bumps estimated 2 are needed with a total cost of around 1500\$.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<ul style="list-style-type: none"> ○ Specify safe routes for trucks that avoid passing through sensitive community locations where practicable (such as schools, clinics and dense residential streets). ○ Set and enforce speed limits for trucks on the plant access roads and in the yard; install speed bumps and signage at the main gate and along internal roads where appropriate. ○ Require that all drivers hold valid licenses, receive periodic training on defensive driving and fatigue management, and that vehicles are regularly inspected and maintained, including brakes, lights and tires. ○ Ensure safe loading and securing of cargo to avoid falling objects and spills along public roads. ➤ Site access control and public safety: <ul style="list-style-type: none"> ○ Maintain perimeter fencing, controlled entrance gates and security arrangements that prevent unauthorized public access to production and storage areas. ○ Install and maintain clear warning signs at the plant boundary and at any potentially hazardous areas (for example high-voltage areas, chemical storage, moving equipment zones) in Arabic and pictograms. ○ Ensure that visitors, contractors and service providers receive a concise safety induction, including information on emergency alarms, assembly points and prohibited areas, before being allowed into operational areas. 	<ul style="list-style-type: none"> the plant gate and internal roads. 			<ul style="list-style-type: none"> All perimeter fencing, warning signage, speed control measures and access controls in place and functional. No recurring non-compliance findings in traffic safety and CHS inspections. 	
Occupational Health and Safety <ul style="list-style-type: none"> ➤ Occupational Health and Safety. ➤ Inadequate capacity and awareness among workers and contractors. ➤ Lack of PPE and compliance to their use. ➤ Lack of Compliance with 	<ul style="list-style-type: none"> ➤ OHS management system and legal compliance: implement the OHS Plan available in Annex II for the plastic factory as part of the CAP and ESMP. Align OHS management with Law No. 3 of 2019 on OHS supervisors and applicable MoL regulations. ➤ OHS roles and structures: Appoint a qualified OHS Supervisor and establish an OHS Committee with worker representation in line with Law No. 3 of 2019. Ensure regular documented meetings, workplace inspections and follow-up on agreed corrective actions. ➤ Safe work procedures and engineering / administrative controls: Prepare written safe operating procedures for critical tasks and equipment, in line with manufacturer recommendations, and post them near workstations. Ensure that machine guards, interlocks and emergency stop buttons are installed, functional and not bypassed. Require isolation of energy sources and verification of zero-energy state before maintenance or cleaning of machinery. Organize safe manual handling and lifting practices and, where feasible, provide mechanical aids to reduce ergonomic risks. ➤ Training, awareness and supervision: Provide induction training for all workers and contractors and refresher training at least 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability and usage. ➤ OHS toolbox meeting and reports documentation review. ➤ Availability of incident and accident log. ➤ Availability of first aid kits. ➤ Housekeeping monitoring ➤ Inspection tours and visits ➤ Review records of medical examinations 	Al Jebrini's OHS Supervisor	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Points; MoL. ○ <u>Frequency:</u> Quarterly or as required 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded -Workers' adherence to PPE protocols. -Adequately documented OHS training logs and toolbox meetings. -Documented accidents investigations and preventive actions. 	<ul style="list-style-type: none"> Cost of PPEs range around 50\$ per worker , with an estimated total cost of 1000\$. First aid kits cost ~ with an estimate of 3 needed at a cost of 150\$ per each, with a total of 450\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
National OHS Legislation	<p>annually on OHS hazards and controls, safe use of machinery and tools, housekeeping, safe handling of chemicals, use of PPE, traffic safety inside the yard, and emergency response including ERP. Maintain training plans and attendance logs and ensure that no worker performs a task without having received the relevant training. Supervisors will monitor compliance with procedures and PPE use during daily rounds and correct unsafe acts and conditions.</p> <ul style="list-style-type: none"> ➤ Personal protective equipment (PPE): Provide workers, free of charge, with task-appropriate PPE, such as safety shoes, work clothing or coveralls, cut-resistant or chemical-resistant gloves, eye and face protection, hearing protection and respiratory protection where required. Establish rules on correct use, cleaning, replacement and storage of PPE and enforce compliance through supervision and disciplinary measures where necessary. ➤ Occupational health and medical examinations: Implement initial and periodic medical examinations for workers in line with Decision of Council of Ministers No. 22 of 2003 on initial medical examinations and Decision No. 24 of 2003 on periodic medical check-ups (every two years for this type of industry). Maintain confidential medical records and follow up on any work-related restrictions or recommendations. ➤ Housekeeping and workplace conditions: Maintain good housekeeping in all production, storage and office areas. Keep floors clean, dry and free of obstacles; promptly clean up spills using appropriate methods. Keep walkways, emergency exits and access to electrical panels and firefighting equipment unobstructed at all times. Ensure adequate lighting, ventilation and temperature conditions in work areas, in coordination with the measures under the Noise and Life and Fire Safety sections. ➤ First aid, emergency information and links to ERP: Provide and maintain first aid kits in accessible locations and ensure that an adequate number of workers per shift are trained in basic first aid. Display emergency procedures and contact numbers (including Civil Defense, ambulance and nearest hospital/clinic) at prominent locations and ensure consistency with the facility ERP and the Life and Fire Safety measures. ➤ Traffic and vehicle safety in the yard: Implement safe systems of work for loading and unloading, including keeping non-essential workers out of reversing zones, using trained signalers when trucks are reversing, and avoiding any standing between vehicles and fixed objects. Ensure that forklifts and other internal transport 				-Medical records of employees	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Plastic Factory)						
	<p>vehicles are operated only by authorized, trained drivers and are subject to regular inspection and maintenance.</p> <p>➤ Incident reporting, investigation and OHS performance monitoring: Maintain a register of near misses, injuries and occupational illnesses, including date, type, causes and corrective actions. Investigate all lost-time incidents and significant near misses to identify root causes and implement corrective and preventive measures within defined timeframes. Include OHS aspects (incidents, inspections, training, corrective actions) in periodic E&S reporting and review trends in OHS Committee meetings to update risk assessments, procedures and training as needed.</p>					

9. INSTITUTIONAL ARRANGEMENTS

This section sets out the institutional arrangements for implementing the four subproject ESMPs and the ESA Corrective Action Plan (CAP); namely for the rooftop solar PV system, the cow farm expansion, the plastic containers factory and the artisanal “Baladi” dairy factory. It builds on the institutional capacity assessment and CAP developed under the ESA for the existing facilities, which identified the need to formalize E&S management, assign dedicated focal points and strengthen OHS structures in line with Palestinian legislation and the World Bank ESF and ESSs.

The arrangements below clarify who is responsible for implementing mitigation and monitoring measures in the ESMP matrices, supervising contractors and suppliers, reporting to the F4J III Project and regulators, and providing the necessary staffing and resources.

9.1. DEMARCATIION OF RESPONSIBILITIES

- **Al Jebrini Co.**

Al Jebrini Co. is the overall project proponent and holds primary responsibility for environmental and social management across all expansion subprojects. Its key duties are to:

- Lead implementation of the ESMPs and ESA CAP for all four subprojects and for the existing facilities, and integrate their measures into company procedures (operations, maintenance, HR, procurement, quality, etc.).
- Provide resources and staffing (budget, personnel, training and equipment) needed to implement mitigation and monitoring measures, including laboratory testing, PPE, emergency preparedness and community engagement.

Assign and maintain E&S roles:

- Confirm that the existing OHS Supervisor is formally certified by MoL as required under Law No.3 of 2019.
- Designate this OHS Supervisor as the corporate E&S Focal Point, with responsibility for coordinating ESMP and CAP implementation and reporting.
- Designate additional OHS Supervisors with E&S responsibilities for each major facility (farms and biogas system, main dairy plant, plastic factory, artisanal dairy factory and, as relevant, the PV system), in accordance with Law No.3 of 2019 and hazard classification.
- Establish OHS Committees with worker representation where required by law.

Ensure ESMP integration in contracts and procurement by:

- Attaching the relevant ESMPs, ESA CAP actions and ESF/ESS obligations to bidding documents and contracts.
- Including clear clauses on OHS, waste and wastewater management, food safety (where relevant), equipment standards, incident reporting, worker GM and CoC/SEA-SH provisions, and penalties for non-compliance.

Supervise contractors and suppliers during finishing works and installation, ensuring that they:

- Appoint on-site E&S/OHS focal points.
- Comply with site rules, PPE requirements, ERP and grievance mechanisms.
- Maintain company-wide grievance mechanisms for workers and for communities, including specific uptake channels for the farms as required by the ES screening and ESA CAP.

- Prepare periodic E&S reports (covering monitoring results, incidents, CAP and ESMP implementation status, grievances and corrective actions) and submit them to the F4J III PIA, as specified in the grant agreement and ESMP matrices.

Within Al Jebrini, day-to-day ESMP implementation will be led by facility managers (farm director, plant managers, utilities/maintenance manager), who are responsible for integrating the measures in their operational routines and for coordinating with the OHS Supervisors / E&S focal points.

- **Al Motawaset Co.**

According to the ESA, the artisanal dairy factory, and potentially the new plastic containers factory, will fall under the management of Al Motawaset Co., a company linked to Al Jebrini.

Once established and operational, Al Motawaset Co. will:

- Act as the facility-level operator for the artisanal dairy factory (and for the plastic factory if operated under Al Motawaset), responsible for day-to-day implementation of the ESMPs and relevant ESA CAP actions at these facilities, under the overall oversight of Al Jebrini Co.
- Designate at least one OHS Supervisor / E&S focal point for its facilities in line with Law No.3 of 2019 and MoL regulations, and ensure that this staff member is trained and, where required, certified by MoL.
- Implement the specific management plans and procedures required in the ESMPs and CAP for the artisanal dairy and plastic factories, including wastewater and stormwater management, food safety and hygiene, hazardous materials and waste management, OHS, and community health and safety.
- Supervise and coordinate the finishing and installation works contractors inside these factories and ensure their compliance with the ESMP, company OHS Plan, ERP and GM.
- Maintain records and monitoring data required for these facilities and submit them to Al Jebrini's corporate E&S focal point for consolidation and reporting.

- **F4J III Project Implementing Agency and E&S Specialist**

The F4J III Project Implementing Agency (PIA), through its E&S Specialist, has no direct role in executing works but plays a supervisory and support role by:

- Conducting periodic E&S monitoring visits to verify compliance with this ESIA, the subproject ESMPs and the ESA CAP, and providing feedback and recommendations.
- Reviewing Al Jebrini's and Al Motawaset's E&S reports, incident notifications and key monitoring results.
- Providing orientation and refresher training to the company's E&S focal points on the ESF, ESSs, ESIA and ESMP requirements, as foreseen in the ESMP matrices.
- Ensuring that ESF/ESS obligations, LMP provisions, and GM requirements are reflected in the grant agreement and procurement procedures.

- **Contractors and Subcontractors**

Contractors engaged for civil and architectural finishing works, mechanical and electrical installations, PV EPC services, and any other construction or installation activities have direct responsibility for implementing ESMP measures within their scope of work. In particular, they shall:

- Review and comply with this ESIA and the relevant subproject ESMP matrices, which form an integral part of their contracts. Non-compliance constitutes a breach of contract and may lead to corrective measures and penalties.

- Prepare and implement method statements covering, at a minimum: OHS and ERP, waste and wastewater management, hazardous materials management, traffic management, life and fire safety during works, housekeeping, and community health and safety.
- Nominate an on-site Environmental and Social / OHS focal point with adequate seniority and understanding of the ESMP to oversee E&S implementation, coordinate with Al Jebrini's and Al Motawaset's E&S focal points, and keep required records.
- Ensure all workers (including subcontractor staff) receive site induction on E&S and OHS requirements, sign the project Code of Conduct, and have access to the workers' GM.
- Report accidents, near misses, dangerous occurrences and grievances to Al Jebrini / Al Motawaset within the timeframes defined in the ESMP and contracts.
- Facilitate monitoring visits by Al Jebrini, Al Motawaset, the PIA or regulators.

Subcontractors remain bound by the same E&S obligations and are supervised both by the main contractor and by Al Jebrini / Al Motawaset.

- **Suppliers and Equipment Manufacturers**

Suppliers of major equipment and materials (e.g. plastic injection lines, molds, dairy processing equipment, boilers and refrigeration units, PV modules and inverters, chemicals) will typically have a limited on-site presence. Their responsibilities include:

- Complying with Al Jebrini's and Al Motawaset's E&S and OHS requirements when present on site (site induction, PPE, GM, ERP, etc.).
- Designating a contact person for E&S and OHS to liaise with the company's E&S focal points on any issues related to delivery, installation, testing and commissioning.
- Providing documentation and certificates demonstrating that supplied equipment complies with applicable local and international standards (e.g. PSI, IEC, ISO 9001 / 14001, relevant electrical and fire safety standards) as specified in procurement documents and the ESMP matrices.
- Providing clear manufacturer instructions on safe installation, operation, maintenance and end-of-life management, including any requirements for specialized disposal of hazardous components.
- Taking back or properly managing packaging materials and any hazardous wastes that their personnel generate on site, where agreed in contracts.

Suppliers are not expected to establish independent ESMSs for this project but must cooperate fully with Al Jebrini's and Al Motawaset's E&S focal points and comply with contractual provisions.

- **Government Authorities and Municipal Services**

Several public institutions have regulatory or service roles that interface with ESMP implementation, including:

- Environment Quality Authority (EQA): environmental approvals for subprojects, oversight of emissions and discharges, and review of environmental monitoring reports.
- Ministry of Labor (MoL): enforcement of the Palestinian Labor Law and OHS regulations, certification and oversight of OHS Supervisors under Law No.3 of 2019, and inspection of working conditions.
- Civil Defense: life and fire safety licensing, inspection and approval of emergency preparedness measures for industrial facilities and the PV system.
- Municipality and Joint Services Councils: provision of solid waste collection and disposal services, stormwater management interfaces, and building permits and infrastructure connections.
- Ministry of Health (MoH) and Ministry of Agriculture (MoA): supervision of worker health examinations, food safety and hygiene requirements for dairy processing, and animal health and veterinary waste management.

- PENRA and SELCO: licensing, grid-connection approvals and operational oversight for the PV system, in coordination with EQA and Civil Defense.

9.2. CAPACITY STRENGTHENING

The ESA concluded that Al Jebrini Co. has strong general management capacity but limited dedicated E&S staffing: one OHS Supervisor (not yet certified) and no formal E&S focal point at the time of the audit. To ensure effective ESMP and CAP implementation, the following capacity-strengthening measures will be implemented and monitored:

I. Formalize E&S governance:

- Assign the existing OHS Supervisor as corporate E&S Focal Point and obtain MoL certification.
- Designate additional OHS Supervisors / E&S focal points for each major facility (farms and biogas, plastic factory, artisanal dairy factory, main dairy plant, PV system) in line with Law No.3 of 2019 and CAP obligations.
- Establish OHS Committees where required and integrate ESMP topics into their agendas.

II. E&S capacity building:

- Organize induction and periodic refresher training for E&S focal points, facility managers and supervisors on ESF/ESS requirements, this ESIA and ESMPs, OHS, emergency response, GM and SEA/SH measures, with support from the F4J III E&S Specialist.
- Include contractors' and suppliers' key staff in relevant training sessions, especially on OHS and emergency preparedness.

III. Resourcing for monitoring and reporting:

- Allocate sufficient budget for monitoring activities specified in the ESMP matrices (e.g. wastewater and stormwater sampling, noise and air measurements, soil and groundwater checks where applicable).
- Maintain structured E&S documentation systems (checklists, logs, training records, incident reports, monitoring results) at facility and corporate levels.

10. STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE

10.1. IDENTIFICATION OF PROJECT-RELEVANT STAKEHOLDERS

Project stakeholders include (i) Project Affected Parties (PAPs), these include those likely to be affected by the project because of actual impacts or potential risks to their physical and social environments, health, security, cultural practices, well-being, or livelihoods. The second are (ii) Project Interested Parties (OIPs); who are individuals, groups, or organizations with an interest in the project, which may be the result of the project location, its characteristics, its impacts, or matters related to the public interest.

Table 13: Identification of Project Relevant Stakeholders

PAPs	OIPs	Vulnerable and Marginalized Groups and their representatives
Al Jebrini Co. Management	Ministry of Labor	SAWA
Al Jebrini Co. Workers	Ministry of Health	WCLAC
Neighboring houses	Environment Quality Authority	Juzoor Rural Development NGO
Neighboring Industries	Ministry of Agriculture	Dora Al Amal Al Khayriyah CBO

Al Thahreyeh Community	Ministry of National Economy	Dora Persons with Disability CBO
Dura Community	Ministry of Industry	Al Thahreyeh Women Charitable Organization
	Palestinian Energy and Natural Resources Authority	Al Thahreyeh Charitable Organization
	Civil Defense	Al Thahreyeh Rural Development Organization
	Dura Municipality	Al Thahreyeh Youth Association
	Al Thahreyeh Municipality	Juhood NGO
	Joint Services Council	
	Southern Electricity Company	
	Hebron Chamber of Commerce and Industry	
	Federation of Food Industries	

10.2. SUMMARY OF STAKEHOLDER ENGAGEMENT ACTIVITIES

Stakeholder engagement for the Al Jebrini expansion subprojects was carried out in line with ESS10 and the national consultation expectations, taking into account the evolving security context in the West Bank and the resulting movement restrictions and access constraints. Accordingly, the engagement approach combined targeted bilateral outreach (phone calls, emails and follow up communication) with an in person public consultation session and a virtual join-in option for who cannot attend. The session was conducted on the 14th of December 2025, at Al Jebrini Co. headquarters to ensure that key stakeholders and potentially affected parties were informed about the project scope, the ESIA process, the main E&S risks and proposed mitigation measures, and the available channels for submitting questions or grievances. Engagement activities also aimed to capture practical feedback related to permitting, utility capacity, life and fire safety requirements, environmental compliance, and community expectations, among others. Further details on the consultation session, including photos, attendance sheet, presentation, and detailed minutes of meeting is available in [Annex VI](#).

Table 14: Stakeholder Consultation Minutes of Meeting Summary

Stakeholder	Topic	Remarks / Answers	Follow Up Action / ESMP Measures
SELCO	Electricity demand, DISCO capacity, technical/load study, coordination for PV and connections	SELCO raised the need to confirm current and expansion electricity demand and coordinate with the DISCOs, noting DISCO capacity constraints. SELCO emphasized that PV installation and connection works should be based on a technical load study conducted in coordination with SELCO. Al Jebrini explained estimated needs and that required amperage is still under discussion, considering current and	Coordinate formally with SELCO and complete the load analysis. Integrate load study results into final design, procurement, commissioning, and operational arrangements. Track related approvals and actions in the permitting tracker and ESMP monitoring.

		future demand. SELCO requested Al Jebrini share future expansion plans/strategies to coordinate. SELCO advised sizing internal infrastructure for future expansion while requesting a load aligned with near-term known needs. SELCO confirmed it will conduct a load analysis for the expansion and rooftop PV to determine the required capacity.	
Ministry of Agriculture (MoA)	Cow farm licensing, competent authority pathway, coordination with MoLG/LGU	MoA asked about the licensing status of the cow farms. Al Jebrini stated licensing is in process. MoA clarified that since the farms are outside the masterplan borders, the licensing pathway is under the rural area framework and requires coordination with MoLG and the LGU. Dura Municipality encouraged coordination with all relevant official bodies.	Continue follow up with MoA, MoLG and the LGU to complete licensing. Maintain a permitting tracker and reflect licensing status and required actions in ESMP monitoring and reporting.
Municipality (Dura)	Coordination with official bodies for permits and compliance	Dura Municipality encouraged Al Jebrini to coordinate with all relevant official bodies as part of licensing and compliance steps.	Maintain structured coordination with competent authorities and keep records of communications and approvals. Reflect key permitting steps and responsibilities in ESMP monitoring and reporting.
Civil Defense (Hebron)	Civil Defense approval status and sequencing	Civil Defense asked about the status of Civil Defense approval, noting it should follow municipality approval and be processed directly with Civil Defense. The consultant stated that the company will initiate this soon and that the current gap for the expansion has been addressed under the ESA and CAP.	Initiate Civil Defense licensing and required site inspection(s) without delay. Ensure CAP and ESMP life and fire safety measures are implemented and no operation starts before required Civil Defense approvals are obtained.
Joint Services Council (JSC)	Future sessions, EQA and licensing status, complaints handling	JSC asked whether there will be future sessions and requested an update on EQA and licensing status, noting they may receive complaints directly. JSC emphasized that licensing should be obtained, including Civil Defense. Al Jebrini and the consultant responded during the session.	Keep the community GM active and communicated (including channels JSC can direct complainants to). Track EQA and Civil Defense licensing steps in the permitting tracker and include updates in ESMP reporting. Maintain periodic engagement as needed.
Neighbors and residents	Employment opportunities	Neighbors introduced themselves as nearby residents, commended	Strengthen disclosure and accessibility of the community

	(including women), mitigation commitments, grievances	the company for providing labor opportunities, and requested opportunities for female workers. They looked forward to finalizing the ESIA and emphasized commitment to mitigation measures to avoid negative impacts. They shared positive experiences related to grievances with the company. Al Jebrini and the consultant responded during the discussion.	GM (multiple channels, clear timelines, confidentiality where relevant). Maintain periodic engagement with neighbors and log issues and responses. Reinforce equal opportunity commitments in hiring and workplace practices.
South Hebron CCI	Energy efficiency, recycling, environmental practices	South Hebron CCI asked about measures for energy efficiency and recycling. Al Jebrini responded that they are working with PPU to recycle PET and other production waste and provided an overview of processes, energy-efficiency measures, and the biogas facility and its integration.	Reflect recycling arrangements and resource-efficiency measures in ESMP actions and monitoring (segregation, licensed recyclers, records of quantities and destinations, energy-efficiency measures and tracking).
Hebron CCI	Internal policies and procedures review; GBV, Code of Conduct, referral mechanisms	Hebron CCI asked whether the study examined internal company policies and procedures. They also asked whether GBV measures are in place, including a Code of Conduct and referral mechanisms (noting that general guidance can be generic). The consultant and Al Jebrini responded during the session.	Confirm and document applicable internal procedures (HR, OHS, ERP, GM) and ensure implementation. Ensure a Code of Conduct is adopted, signed and enforced. Ensure SEA/SH-sensitive GM procedures and referral pathways are in place, communicated, and reflected in ESMP actions and annexes.

10.3. INFORMATION DISCLOSURE

Information disclosure is an integral part of the implementation of this ESIA, the four subproject-specific ESMPs, and the ESA and CAP for the existing facilities. Al Jebrini Co. and Al Motawaset for Food Industries commit to provide clear, accessible and timely information to affected communities, workers, authorities and other stakeholders, in line with ESS10 and the F4J III SEP, so that they can understand the project, the associated risks and mitigation measures, and how to raise concerns.

The following E&S documents will be disclosed once cleared by the World Bank and the PIA, and whenever they are materially updated:

- The full ESIA for the expansion subprojects, including the ESMPs and ESMP matrices for the cow farm expansion, the artisanal dairy factory, the plastic factory and the rooftop solar PV system in English and Arabic.
- A non-technical summary of the ESIA and ESMPs in Arabic.

Information will be disclosed through multiple channels to reach different stakeholder groups:

- Electronic disclosure on the company's official communication platforms (website and active social media pages), where the ESIA, ESMPs, and summary will be uploaded as downloadable files. An

announcement post in Arabic will summarize the main points and will remain visible or pinned for a defined period around initial disclosure.

- Hard copies of the Arabic non-technical summary and the GM brochure made available free of charge at Al Jebrini's head office, at the management office of Al Thahreyeh farm complex, and at other locally relevant points such as the municipalities of Dura and Al Thahreyeh, subject to their agreement.
- On-site disclosure for workers and contracted workers through induction sessions, toolbox talks.

Disclosure will take place prior to the start of F4J-financed works or installation activities and will be updated throughout implementation when there are significant changes to project design, risks or mitigation measures. Any changes to the GM, contact persons or uptake channels will also be promptly communicated through the same disclosure means.

11. GRIEVANCE MECHANISM

The Grievance Mechanism (GM) is an integral component of the project's uptake mechanisms, structured on dual levels: the Project Level GM for the public and the Workers' GM for project employees.

- **Company Level GM:** This mechanism is designed to foster open communication between stakeholders and Al Jebrini management. Its primary objective is to swiftly and effectively address and resolve issues raised by stakeholders, ensuring that their concerns are heard and acted upon. The project-level GM of Al Jebrini will be connected with the F4J GM, which is managed by the PIA (DAI – F4J). The company will report received grievances in accordance with the reporting requirements. The Company's Project level GM will be based on the F4J GM.
- **Workers' GM:** This mechanism provides a structured avenue for all types of workers to voice their grievances, concerns, and feedback. During the finishing works and installation phase, and given the simple and short-term nature of activities, contracted workers will utilize Al Jebrini's workers' GM with resolution responsibility assigned to their employers.

To ensure maximum outreach and awareness, the GM, along with a concise project overview, will be disseminated through various media channels, including social media platforms and physical locations, among other channels. A user-friendly Arabic version, tailored for public accessibility, is provided in [Annex III](#).

12. ESMPs BUDGETERY REQUIREMENTS

The table below pertains to the two subprojects supported directly by the F4J III, which are the solar rooftop subproject and the plastic factory, where the other two subprojects' budgetery requirements are presented in [Annex VII](#). For the two F4JIII supported subprojects, most of the mitigation measures specified in the ESMPs are based on avoidance, and as such do not have any additional cost related to them. Nevertheless, several mitigation measures and monitoring activities are still associated with the cost to contractors and to the company that needs to be identified, these include;

Table 15: The rooftop solar energy and plastic factory ESMPs Implementation Budgetary Requirements

Subproject / Phase	Action	Cost (USD)	Frequency / QTY	Total Cost (USD)
1. Rooftop Solar Energy PV Subproject				
1.1. Planning and Procurement Phase	E&S Capacity Building for Contracted Workers	300	2	600

Subproject / Phase	Action	Cost (USD)	Frequency / QTY	Total Cost (USD)
1.2. Supply and Installation Phase	Noise measurement device	100		100
	Spill kit	100		100
	Project information board	250		250
	First aid kit	150	3	450
TOTAL FOR PHASE				1500
1.3. Operation and Maintenance Phase	Spill kit	100		100
	E&S Capacity Building	300	1	300
TOTAL FOR PHASE				400
Total for Rooftop Solar Energy PV Subproject				1900
2. Plastic Factory Subproject				
2.1. Finishing Works and Installation Phase	Spill kit	100	1	100
	Fire Extinguisher	150	4	600
	First aid kit	150	1	150
TOTAL FOR PHASE				850
2.2. Operation and Maintenance Phase	Ambient Air Quality tests	2000	1	2000
	Noise measurement device	150	1	150
	Spill kit	100	1	100
	submeters	1000	10	10000
	medical examinations	50	20	1000
	GBV and female workers training	600	1	600
	warning signs	200		200
	Information board	300		300
	Speed Bumps	750	2	1500
	PPEs	50	20	1000
	First aid kit	150	3	450
Plastic recycling shredder	7000	1	7000	
TOTAL FOR PHASE				24300
Total For Plastic Factory Subproject				25150
GRAND TOTAL (USD)				27,050

مدونة قواعد السلوك وأخلاقيات العمل

مقدمة

يأتي الاهتمام بمواثيق سلوك وأخلاقيات العمل والتشغيل كأحد مداخل تطوير الاداء للعاملين وأصحاب العمل. إن إعداد مدونة قواعد السلوك وأخلاقيات العمل من شأنه تعزيز قيم والممارسات الإيجابية في العمل، وتعد مدونة السلوك إطاراً عاماً يجب على العاملين في المشروع التقيد به والعمل بمقتضاه، فهي مدونة تلقي الضوء على المعايير والأخلاق والقيم التي يجب أن يتحلى بها العامل أثناء أداء واجباته، ومن ثم فهي قواعد ستسهم على نحو فاعل في الارتقاء بمستوى جودة الاداء والارتقاء به. إن هذه المدونة تشكل جزءاً من مقتضيات العمل في المشروع بالتركيز على اجراءات الوقاية والسلامة والصحة العامة، ويجب تطبيقها في كل اوقات العمل وطوال فترة التشغيل، وسوف يتم تزويد كل عامل بنسخة منها، ليقرأها ويعمل بموجبها.

تعريفات مهمة

• **العنف الجنسي والعنف القائم على النوع الاجتماعي:** مصطلح شامل لأي فعل ضار يُرتكب ضد إرادة الشخص ويستند إلى الفروق المنسوبة اجتماعياً بين الذكور والإناث (أي الجنس). ويشمل الأفعال التي تلحق الأذى، أو المعاناة الجسدية أو الجنسية أو العقلية، والتهديد بمثل هذه الأفعال، والإكراه، وغير ذلك من أشكال الحرمان من الحرية.

• **الاستغلال والاعتداء الجنسيان (SEA):** يُعرّف بأنه أي إساءة فعلية أو محاولة إساءة استغلال لموقف ضعف أو قوة نفاضلية أو ثقة لأغراض جنسية، بما في ذلك، على سبيل المثال لا الحصر، تحقيق الربح المادي أو الاجتماعي أو السياسي من الاستغلال الجنسي من جانب آخر.

• **الاعتداء الجنسي:** "التدخل الجسدي الفعلي أو المهذّب بطابع جنسي، سواء بالقوة أو في ظل ظروف غير متكافئة أو قسرية."

• **التحرش الجنسي (SH):** sexual harassment التحرش الجنسي غير المرغوب فيه، وطلب خدمات جنسية، وغير ذلك من السلوك اللفظي أو الجسدي ذي الطبيعة الجنسية.

• **التحرش الجنسي مقابل الاستغلال والانتهاك الجنسيين:** يحدث الاستغلال الجنسي ضد مستفيد أو فرد من المجتمع. ويحدث التحرش الجنسي بين أفراد / موظفي مؤسسة أو شركة وينطوي على أي تقدم جنسي غير مرغوب فيه أو سلوك لفظي أو جسدي غير مرغوب فيه ذي طبيعة جنسية. يعد التمييز بين الاثنين أمرًا مهمًا بحيث يمكن أن تتضمن في سياسات الوزارة وتدريب الموظفين على تعليمات محددة حول إجراءات الإبلاغ عن كل منهما.

• **الموافقة:** هي الاختيار الكامن وراء قرار الشخص الطوعي بفعل شيء ما. يجب منح الموافقة على أي نشاط جنسي بحرية، وموافقة على الانسحاب، وتتخذ مع أكبر قدر ممكن من المعرفة، ومحددة للموقف. إذا تم الحصول على اتفاق باستخدام التهديدات، أو الأكاذيب، أو الإكراه أو استغلال اختلال توازن القوى، فهذه لا تعتبر موافقة.

أولاً: المبادئ الأساسية لمدونة السلوك وأخلاقيات العمل

إن جودة الاداء ونجاح العمل تتوقف على الالتزام بقواعد السوك العامة وأخلاقيات العمل، والتصرف بطريقة عادلة وصادقة كأفراد مسئولين اجتماعياً انطلاقاً من ايماننا الراسخ بمسؤوليتنا الاجتماعية التي لها أثراً إيجابياً كبيراً على المشاريع التي نعمل بها. ولتحقيق هذا، يجب علينا احترام هذه المبادئ الأساسية:

• **النزاهة والامانة:** الأيمان بتعزيز التصرف بأمانة في جميع العلاقات مع التقيد الصارم بجميع القوانين المعمول بها، احترام كرامة كل شخص والحفاظ على سلامتهم.

• **الشفافية:** الاحترام المتبادل والحوار والشفافية هي أساس العلاقة مع اصحاب العمل والسلطات ذات العلاقة، والتي تتوافق مع مبادئ التعاون والصدق والانفتاح.

• **الموضوعية والاستقلالية:** العمل بموضوعية واستقلالية وتجنب أي نوع من أنواع الفساد أو تضارب المصالح الذي قد يؤثر على اتخاذ القرارات المتعلقة بالعمل.

• **المسؤولية:** توفير بيئة عمل آمنة وصحية للعمال، واحترام الحقوق والتقيد بالواجبات من مقتضى المسؤولية، واحترام المجتمعات التي نعمل فيها.

ثانياً: قواعد السلوك واخلاقيات العمل

القسم الاول: الحقوق العامة

- يلتزم العامل بتأدية عمله بإخلاص وأمانة وبالمحافظة على أسرار العمل وأدواته، ويعتبر مسؤولاً عن الأدوات التي في عهده وعلية الحفاظ عليها، وفي حالة وجود ظرف خارج عن إرادته او قوة قاهرة، فان العامل لا يعتبر مسؤولاً عن خلل الأدوات أو ضياعها.
- على العامل أن يلتزم بأخلاقيات العمل والحفاظ على خصوصية السكان والعمال في منطقة العمل، دون الاشتباك معهم أو التسبب بأي أذى لهم بأي شكل كان. ويجب الامتناع عن المشاركة في أي عنف بدني او لفظي لأي من العاملين أو السكان.
- على العامل التقيد بساعات العمل المطلوبة، وكذلك التقيد والامتنال بالمهام المكلف بها من قبل صاحب العمل.
- على العامل الالتزام بإجراءات السلامة المتبعة في الموقع، خاصة عند استخدام الآلات الخطرة، وأي إجراءات إضافية يتم طلبها من قبل اصحاب العمل.
- على العامل الالتزام باستخدام أدوات ومعدات الحماية المطلوبة وعلى صاحب العمل توفيرها لها.
- يجب على العامل الإبلاغ فوراً عن أي أمراض مزمنة يعاني منها أو عند الشعور بالإعياء، وعن أي عواقير يتلقاها العامل.
- الامتناع عن التسبب بأي نوع من المضايقات سواء اللفظية المباشرة او غير المباشرة لأي شخص أثناء فترة العمل، وخاصة من فئة النساء والأطفال وذوي الاحتياجات الخاصة.
- من حق العامل أن يوقع عقد عمل مع صاحب العمل على أن يكون باللغة العربية، وذلك لحفظ حقوق العامل، علماً بأن عقد العمل يجب أن يتضمن: الأجر، نوع العمل، مكانه ومدته، ساعات وأوقات العمل، كما ويجب ان يتضمن العقد الاجراءات الصحية وشروط الوقاية المتعلقة بالصحة والسلامة المهنية، ويجب أن يوقع العقد من قبل صاحب العمل والعامل بحيث يحتفظ العامل بنسخة أصلية من العقد.
- على صاحب العمل أن يلتزم بالتأمين على جميع عماله عن إصابات العمل لدي الجهات المرخصة في فلسطين.
- يجب أن تتخلل ساعات العمل اليومي فترة أو أكثر لراحة العامل لا تزيد في مجموعها عن ساعة مع مراعاة ألا يعمل العامل أكثر من خمس ساعات متصلة دون تخصيص وقت للراحة.
- التقيد بأوقات العمل وتكريس اوقات العمل للقيام بالمهام والواجبات المتعلقة بطبيعة العقد، كما نص عليها عقد العمل.
- ضمان حق العامل في التظلم او الشكوى من اي انتهاك لحقه او من اتخاذ قرار خاطئ بحقه.
- تعتبر مدونة السلوك هذه جزئاً لا يتجزأ من العقد والاتفاق القانوني المبرم م ما بين العامل وصاحب العمل.

القسم الثاني: حماية حقوق النساء

- معاملة النساء باحترام بغض النظر عن العرق، أو اللون، أو اللغة، أو الدين، أو الرأي السياسي، أو غير السياسي، أو الأصل، أو الإعاقة، أو أي وضع آخر.
- عندما يكون لدى المرأة العاملة مخاوف أو شكوك فيما يتعلق بأعمال العنف القائم على النوع الاجتماعي من قبل اصحاب العمل او اي طرف ذو علاقة بالعمل، يجب عليها الإبلاغ عن هذه المخاوف وفقاً لإجراءات الشكاوى المعتمدة في المشروع. على ان يتم التعامل مع هذه الشكاوى بخصوصية كبيرة للحفاظ على كرامة المشتكية.
- يجب توفير الحماية للنساء وتهئية أماكن امنة في العمل للنساء وخاصة الحوامل والتأكد من عدم نقل أي امرأة حامل بشكل غير صحيح، والعمل على ازالة او منع تعرض النساء الحوامل للمخاطر.
- يجب توفير أماكن للنظافة الشخصية لاستخدامها من قبل النساء العاملات بعد الانتهاء من العمل. وايضا توفير مرافق صحية) دورات مياه (خاصة بالنساء في اماكن العمل، ويجب أن يتم تعقيم هذه الأماكن بشكل يومي.
- يجب تنفيذ لقاءات توجيهية قبل بدء العمل في الموقع للتأكد من أن الجميع على دراية بقواعد السلوك الخاصة بالعنف القائم على النوع الاجتماعي.

القسم الثالث: حماية حقوق ذوي الاعاقات

- يلتزم اصحاب العمل بتهيئة البيئة الملائمة لاحتياجات ذوي الاحتياجات الخاصة وتوفير تسهيلات الحركة والتنقل في اماكن العمل.
- عدم التمييز بحق المعاقين والمعاقات في العمل، واحترام حقهم / هن في اختيار نوعية الاعمال التي تناسب قدراتهم /تهن، واهتماماتهم/هن واحتياجاتهم/هن.
- الالتزام بتوفير خدمات ومرافق صحية مواءمة لاستخدامات ذوي الاعاقة الحركية في مواقع العمل.

القسم الرابع: الصحة والسلامة المهنية

- على العامل التقيد بتطبيق شروط واجراءات الصحة والسلامة العامة الصادرة عن وزارة الصحة الفلسطينية، والالتزام بقواعد السلامة والصحة المهنية في العمل.
- على صاحب العمل تقديم الإسعافات الأولية اللازمة للعامل في حال الاصابة ونقله إلى أقرب مركز للعلاج
- الالتزام بإجراءات ومتطلبات السلامة والصحة المهنية بما في ذلك ارتداء واستخدام معدات الصحة والسلامة والالتزام بالتعليمات وحضور والالتزام بالتدريبات المتعلقة.

القسم الخامس: التبليغ:

إذا لاحظ أي شخص سلوكًا يعتقد أنه قد يمثل انتهاكًا لمدونة قواعد السلوك هذه، أو للتبليغ عن سلوك يتعلق بشخصه / شخصها ، فيجب عليه / عليها إثارة المشكلة على الفور إلى الإدارة التابع/ة لها.

سيتم الحفاظ على سرية هوية الشخص، ما لم يكن الإبلاغ عن الادعاءات مكلفًا بموجب قانون الدولة. يمكن أيضًا تقديم شكاوى أو ادعاءات مجهولة المصدر وشكاوى متعلقة بالعنف القائم على النوع الاجتماعي والتحرش الجنسي وسيتم أخذها في الاعتبار. نحن نتعامل بجدية مع جميع التقارير المتعلقة بسوء السلوك المحتمل وسنحقق ونتخذ الإجراء المناسب. سنقدم توصيات لمقدمي الخدمة الذين قد يساعدون في دعم الشخص الذي تعرض للحدث المزعوم، حسب الاقتضاء.

لن يكون هناك أي تبعات أو عواقب لأي شخص يثير مخاوف بحسن نية بشأن أي سلوك محظور بموجب مدونة قواعد السلوك هذه. مثل هذا الانتقام أو أي عواقب ستكون انتهاكًا لمدونة قواعد السلوك هذه.

القسم السادس: عواقب انتهاك مدونة السلوك

قد يؤدي أي انتهاك لقواعد السلوك هذه من قبل الموظفين والعمال إلى عواقب وخيمة ، بما في ذلك الإنهاء والإحالة المحتملة إلى السلطات القانونية.

استمارة استلام

لقد تلقيت نسخة من مدونة قواعد السلوك مكتوبة بلغة أفهمها. أفهم أنه إذا كان لدي أي أسئلة حول مدونة قواعد السلوك هذه، فيمكنني الاتصال بالشؤون الإدارية في الشركة التي أعمل لديها لمزيد من التوضيح

اسم الموظف \ العامل _____ :

التوقيع _____ :

التاريخ _____ :

التوقيع بالتصديق – مدير الشركة (اسم الشركة) _____ :

الاسم والتوقيع _____ :

التاريخ _____ :

المرفق 1: السلوكيات التي تشكل الاستغلال والاعتداء الجنسيين (SEA) والسلوكيات التي تشكل تحرشًا جنسيًا (SH)

المرفق 1 | لمدونة قواعد السلوك

السلوكيات التي تشكل الاستغلال والاعتداء الجنسيين (SEA) والسلوكيات التي تشكل تحرشًا جنسيًا

(SH)

تهدف القائمة غير الشاملة التالية إلى توضيح أنواع السلوكيات المحظورة، تشمل أمثلة الاستغلال والاعتداء الجنسيين، على سبيل المثال لا الحصر:

- يخبر عامل المشروع أحد أفراد المجتمع أنه يمكنه الحصول على وظائف متعلقة بموقع العمل (مثل الطهي والتنظيف) مقابل ممارسة الجنس.
- يقول أحد العاملين في المشروع أنه يمكنهم تقديم أجهزة أو خدمات أو تفضيلات للنساء مقابل ممارسة الجنس.
- يقوم أحد العاملين في المشروع باغتصاب أحد أفراد المجتمع أو الاعتداء عليه جنسيًا
- يمنع عامل المشروع أي شخص من الوصول إلى الموقع / الخدمات ما لم يقدم خدمة جنسية
- يخبر عامل المشروع الشخص الذي يتقدم للحصول على عمل بموجب العقد أنه لن يقوم بتوظيفه إلا إذا مارس الجنس معه.

أمثلة على التحرش الجنسي في سياق العمل

- تعليق عامل المشروع على مظهر عامل أو طاقم مشروع آخر (سواء كان إيجابياً أو سلبياً) والرغبة الجنسية.
- عندما يشكو عامل المشروع من التعليقات التي أدلى بها عامل آخر على مظهره / مظهرها ، يعلق العامل الآخر في المشروع بأنه "ي\تطلب ذلك" بسبب طريقة لبسه\ها.
- اللمس غير المرغوب فيه للعامل / الموظفين من قبل عامل آخر في المشروع
- يخبر عامل المشروع عامل آخر في المشروع أنه سيحصل له / لها على زيادة في الراتب ، أو ترقية إذا أرسل له / لها صورًا عارية لنفسه.

ANNEX II: OHS PLAN AND ERP

1. INTRODUCTION AND AL JEBRINI OHS FRAMEWORK

Al Jebrini Co. has established a company-wide Occupational Health and Safety (OHS) management system that includes an OHS Manual, an OHS Plan, an Environment, Health and Occupational Safety Policy, inspection checklists, maintenance guidelines, firefighting system procedures, fueling instructions, and incident reporting forms. These documents apply to all companies in the group, including the existing dairy plant, the cow farms and biogas station, and will be extended to cover Al Motawaset Co. as operator of the artisanal dairy factory and, where relevant, the plastic containers factory.

The purpose of this Annex is not to replace the corporate OHS system, but to:

- Summarize Al Jebrini's OHS commitments in the context of the F4J III expansion project.
- Highlight key OHS and ERP requirements for the four subprojects (cow farm expansion, artisanal dairy factory, plastic factory, and rooftop PV system), including finishing works and operation.
- Clarify roles and responsibilities for Al Jebrini, Al Motawaset, contractors, and workers.
- Provide project-specific guidance on emergency preparedness and response that complements Civil Defense requirements and the company's existing procedures.

This Annex should therefore be read together with the following corporate documents, which are provided in Arabic and remain the primary reference for day-to-day implementation:

[Environment, Health and Occupational Safety Policy \(سياسة البيئة والصحة والسلامة المهنية\) – Annex II-Section 2 below.](#)

[Corporate OHS Manual \(دليل الصحة والسلامة المهنية\).](#)

[Corporate OHS Plan \(خطة السلامة والصحة المهنية\).](#)

[OHS Inspection Checklists, Equipment and Fire System Checklists, and Incident/Accident Forms – Available in the sections below](#)

2. OCCUPATIONAL HEALTH AND SAFETY POLICY

تعد الإدارة العليا في شركة الجبريني أهمية المحافظة على البيئة وعلى صحة وسلامة موظفيها في ظل بيئة عمل صحية وآمنة، بحيث أصبح هذا الالتزام واحداً من أهم أولوياتها. لذا فقد التزمت شركة الجبريني بتنفيذ كافة الأنشطة ذات العلاقة بعمليةها بطريقة مسؤولة تجاه البيئة وسلامة وصحة عاملها، وذلك عن طريق:

- تخفيض المخاطر المحيطة بعمل موظفيها إلى أدنى حد ممكن مع تسيير الطاقات للعمل بشكل دؤوب لتلحق بيئة عمل صحية وآمنة وصحة وسلامة العاملين وبما يضمن المحافظة على أموال وممتلكات الشركة
- تحديد المظاهر البيئية الناتجة عن نشاطاتها أو خدماتها أو منتجاتها التي يمكن السيطرة عليها والتي من المتوقع أن يكون لها تأثير هام على البيئة مثل الغاز والانبعاث والضجيج وغيرها، كما تقوم الشركة عند إنشاء أي خط إنتاج جديد بدراسة الحاجة إلى تحديث تلك المظاهر البيئية باستمرار.
- التزام شركة الجبريني بتحديد المتطلبات القانونية والمتطلبات الأخرى التي تتبناها وتنطبق عليها والتي تنطبق بالمظاهر البيئية للأنشطة أو المنتجات أو الخدمات التي تقوم بها الشركة. كما تلتزم الشركة بالمتطلبات القانونية والمتطلبات الأخرى الخاصة بأنظمة إدارة السلامة والصحة المهنية بما يتناغم مع سياسة الشركة التي يبتليق عنها إطار العمل العام للشركة فيما يتعلق بإدارة المخاطر في بيئة العمل بما يشمل الحفاظ على الأرواح والممتلكات.
- تترك شركة الجبريني المخاطر المحيطة بطبيعة عملها بما يشمل التعامل مع المواد الكيميائية لأغراض التصنيع والرقابة النوعية وغيرها، وهي تعرض على تطبيق قواعد أنظمة إدارة البيئة والسلامة والصحة المهنية في التعامل مع تلك المواد حسب المعايير العالمية لتلك الأنظمة.
- تتخذ الإدارة العليا لشركة الجبريني بدعم الأنظمة والإجراءات اللازمة لمنع كافة أنواع الإصابات أو المشاكل الصحية، وكما تعمل الشركة على تبنى الاستراتيجيات التي من شأنها منع التلوث البيئي وتطوير أداء أنظمة إدارة البيئة والسلامة والصحة المهنية وفقاً للقواعد التحسين المستمر.
- التزم إدارة شركة الجبريني بالتشاور مع العاملين وإشراكهم في القضايا ذات العلاقة بالبيئة والسلامة والصحة المهنية، بحيث تقوم بزيادة وعي جميع العاملين لديها بسلوكياتهم الفردية تجاه البيئة والسلامة والصحة المهنية، ويكفي ذلك جنباً إلى جنب مع استمرار إدارة الشركة في دعم الثورات التدرجية المعتمنة لتلك الإنجازات والأقسام بما يساهم في الارتقاء بمستوى العاملين في مجال المعرفة بمتطلبات أنظمة البيئة والسلامة والصحة المهنية.
- تتبنى إدارة شركة الجبريني متابعة عمليات التخطيط التي تبدأ بتحديد المخاطر في كافة فروع وأقسام ودوائر الشركة، ومن ثم تقييمها وتحديد الضوابط حسب ما يقضيه نوع الخطر، هذا بالإضافة إلى السعي إلى التحكم في أي مخاطر تشكلت خارج مكان العمل والتي قد يكون لها أي تأثير عكسي أو سلبى على صحة الأشخاص الخاضعين لسيطرة الشركة.
- منهج الشركة في إدارة مخاطر بيئة العمل يعكس في تحديد المخاطر فيما يتعلق بنقلها وطبيعتها وتوقيت الخطر بما يضمن أن تكون عملية تحديد المخاطر استباقية بدلاً من أن تكون رد فعل بعد وقوع الضرر أو الأذى الذي قد يهدد بيئة العمل أو العاملين فيها.
- تراعى الشركة تطبيق أنظمة إدارة البيئة والسلامة والصحة المهنية وتنسيق أداء الأنظمة بشكل مستمر، وتكرار عملية تقييم متطلبات تلك الأنظمة في سبيل تحقيق تصنيفات الأداء الشامل والمستمر بما يتناسب مع المتطلبات العالمية لإدارة المخاطر في بيئة العمل.
- تتبنى شركة الجبريني المراجعة الدورية لسياساتها المتعلقة بالبيئة والصحة والسلامة المهنية بهدف المحافظة المستمرة على البيئة وتأمين أفضل سبل الحماية للعاملين بما يتماشى مع المستجدات على أنظمة البيئة والسلامة والصحة المهنية.

سوف تحقق شركة الجبريني هذه السياسة عن طريق ما يلي:

1. المحافظة على تبنى أهداف بيئية وأخرى خاصة بالسلامة والصحة المهنية لكل نشاط ومستوى داخل فروع ودوائر وأقسام شركة الجبريني وذلك اعتماداً على المظاهر البيئية الهامة الناتجة عن النشاطات أو الخدمات أو المنتجات التي تقوم بها الشركة أحياناً مع الاعتراف بالمتطلبات القانونية والمتطلبات الأخرى والبدائل التكنولوجية والمتطلبات المالية ومتطلبات التشغيل ورؤية جميعات المهنة بالبيئة
2. مسأل أنظمة إدارة البيئة والصحة والسلامة المهنية بما يتوافق مع كل من متطلبات إدارة البيئة (الأيزو 14001) ومتطلبات نظام إدارة السلامة والصحة المهنية (الأيزو 45001).
3. تعمل شركة الجبريني على توفير الموارد اللازمة سواء البشرية منها أو المالية لإدارة أنظمة البيئة والسلامة والصحة المهنية بهدف المحافظة على البيئة ومنع أي تأثير سلبى قد يفسد بسبب أنشطتها أو منتجاتها أو خدماتها والقضاء على المخاطر التي قد يتعرض لها موظفوها أو أي أفراد أو جهات مهنية مرتبطة بأنشطتها، مع الأخذ بعين الاعتبار تقليل المخاطر إلى الحدود الدنيا الآمنة في حال عدم القدرة على إزالة الأخطار بشكل نهائي.
4. مواكبة قوانين السلطات المحلية الخاصة بالبيئة والصحة والسلامة المهنية أو أي قوانين أو متطلبات أخرى ممكنة والعمل على تطبيقها.
5. التزام الشركة بالمحافظة على صحة وسلامة العاملين وسلامة البيئة في التخطيط الاستراتيجي أو القرارات المسماة عنها.
6. تتولى إدارة شركة الجبريني تصميم دوائرها وأقسامها ومراقبتها ومواقع العمل فيها والمعدات والآلات والمكينات والمعدات المتعلقة بإجراءات التشغيل والعمل واختيار المواد الأولية والمنتجات المصنعة، بحيث يتم الأخذ بعين الاعتبار أن تكون جميعها بما يتناغم مع المقدرات البشرية والقدرات التصنيعية وبما يضمن التوافق مع متطلبات أنظمة البيئة والصحة والسلامة المهنية العالمية.
7. التصرف بطريقة آمنة بكافة مخلفات الإنتاج ومعالجة أي انبعاثات بما يتناسب مع متطلبات أنظمة البيئة والصحة والسلامة المهنية.
8. التدريب المستمر للكادر الوظيفي ليكون منسجماً مع سياسات وأهداف الشركة للبيئة والصحة والسلامة المهنية.
9. تنفيذ التدقيق الداخلي المنتظم على نظام إدارة البيئة والصحة والسلامة المهنية في الشركة.
10. المراجعة الدورية لسياسة وأهداف البيئة والصحة والسلامة المهنية بصورة دورية من قبل الإدارة العليا للتأكد من حسن التطبيق في كافة فروع ودوائر وأقسام الشركة.

المدير العام / جهاد الجبريني

Figure 16: Al Jebirini OHS and Environmental Policy

3. KEY OHS RISKS DURING THE DIFFERENT PROJECT PHASES

A detailed risk assessment for each subproject and phase is provided in Chapter 7 and in the subproject ESMPs. In summary:

- Finishing works and equipment installation involve physical risks (work at height, lifting, machinery and tools, electrical works, slips and trips), chemical risks (paints, solvents, cleaning agents), and, in food and livestock areas, biological risks. Non-compliance with PPE requirements and unsafe work practices significantly increase these risks.
- Operational phases of the dairy facilities and farms include physical hazards from rotating equipment, hot and cold surfaces, manual handling and slippery floors; biological hazards from raw milk, manure and waste; and chemical hazards from detergents, disinfectants and other process chemicals.
- PV installation and operation introduce elevated work at height and electrical hazards, especially during installation, testing and maintenance.

These risks are managed through the measures set out in this Annex, the ESMP matrices and the corporate OHS Manual/Plan. Additionally, types of OHS risks and how to deal with them are presented in the company's OHS manual [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

4. KEY RESPONSIBILITIES, MONITORING AND REPORTING

- All project personnel shall be required to be familiar with the content of this OHS plan and shall participate in implementing, maintaining and improving the management system.
- The overall implementation and capacity building responsibility is of the **OHS Supervisor**.
- All new staff and staff who are given new responsibilities are to be inducted into the requirements set out in this plan in general and into their function and responsibilities in particular.

5. ALL EMPLOYEES RESPONSIBILITIES

- Take all reasonable and practical steps to care for their own health and safety and avoid affecting the health and safety of co-workers and the general public.
- Commit to the procedures and understand the risks and mitigation measures as stipulated in this plan and in the ESIA and ESMPs.
- Follow all instructions and use the equipment properly
- Not interfere with any safety arrangements.
- Report any circumstances which may not comply with the project's OHS management system.

6. COMPETENCY

All personnel required to operate or work with any equipment or machine must be competent, be tested for each equipment that he/she shall be operating. All personnel who as part of their profession require licensing or certification must obtain the necessary certification before he/she shall be allowed to work on the site.

7. FITNESS

All personnel working on site shall be required to be certified medically fit to do so by an approved medical facility or Medical Doctor (pre-employment medical examination). This is in line with the Ministerial Decisions on medical health checkups as denoted in decisions 22 and 24 of 2003.

8. PERSONAL CONDUCT WHILE ON DUTY

The use of alcohol during working hours, including lunch hour, is strictly prohibited. Any violation shall be considered sufficient cause for disciplinary action.

Any Workers/employee reporting for duty under the influence of liquor, illegal drugs, or illegal smoking materials will be dismissed. Any supervisor or other person in charge who permits such employee to work, will also be subject to disciplinary action. For more details, please, refer to the approved Code of Conduct.

9. OHS TRAINING

A. BASIC REQUIREMENTS FOR ALL PROJECT PHASES

All staff members encompassing management, supervisors, and workers, are mandated to undergo foundational OHS training provided by the OHS Supervisor. This ensures they are well-acquainted with both general and specific hazards associated with their individual roles, safeguarding not only their well-being but also that of the public and any visitors to the facility.

B. OHS MEETINGS

OHS management meetings shall be held once a month. The meeting is to help identify safety problems, develop solutions, review incident reports, provide training and evaluate the effectiveness of our safety program. Some of the meetings shall be:

- a. OHS committee meeting (Monthly).
- b. Toolbox talk meetings for all workforce (Weekly).
- c. Special situation meeting (As required).

C. INDUCTION/ORIENTATION

Every new or rehired employee must undergo mandatory OHS orientation / induction. The purpose of the Induction is to educate workers and make them aware of the major potential hazards he or she shall come into contact with while working on the site; also, it is one more opportunity to stress the importance of OHS being the first priority in the operations.

10. HAZARD IDENTIFICATION & OHS RISK ASSESSMENT

A. PROJECT OHS RISK ASSESSMENT

A comprehensive OHS risk assessment for all subprojects will be meticulously developed, documented, and maintained. This assessment will be spearheaded by the OHS supervisor, Food Safety and Hygiene Officer, technical managers, and relevant operational supervisors. The assessment's primary objective is to identify potential hazards, evaluate their impact, and devise mitigation strategies.

B. BIOLOGICAL HAZARDS

Exposure to biological and microbiological agents may be associated with handling raw produce and manufacturing processes or handling spoiled and returned products as well as cross-contamination. Specific OHS measures relevant to dairy production should be implemented such as;

- Provide workers with PPE that is appropriate for the process activity;
- Avoid direct contact with non-conforming products.

- Ensure regular cleaning and sanitization of the workplace. Provide handwashing facilities and encourage regular hand hygiene.
- Train workers on the importance of personal hygiene.
- Label allergen-containing areas, provide allergy awareness training, and establish clear protocols for allergen management.

C. CHEMICAL HAZARDS

Chemical hazards represent potential for illness or injury due to single acute exposure or chronic repetitive exposure to toxic, corrosive, sensitizing or oxidative substances. They also represent a risk of uncontrolled reaction, if incompatible chemicals are inadvertently mixed. Chemical hazards can most effectively be prevented through a hierarchical approach that includes: Replacement of the hazardous substance with a less hazardous substitute, Implementation of engineering and administrative control measures to avoid or minimize the release of hazardous substances into the work environment keeping the level of exposure below internationally established or recognized limits, Keeping the number of employees exposed, or likely to become exposed, to a minimum; and training workers in the use of the available information (such as MSDS), safe work practices, and appropriate use of PPE.

Prior to any potentially hazardous substances, being brought onto the site, the following precautions shall be taken:

- Information on the hazards of the materials – Material Safety Datasheet (MSDS) shall be obtained from the manufacturer or supplier and communicated to all users.
- Where the use of toxic solvents, certain thinners, certain paints or volatile chemical substances cannot be avoided, special precautions should be taken such as providing general and local exhaust ventilation, and, if this is not practicable or is inadequate, respiratory protective equipment should be used. Such measures should be applied more rigorously in situations when such chemicals are heated or used in confined spaces. Paints and adhesives which present health hazards should be replaced with water dispersed products.
- The following aspects shall be considered prior to purchasing and/or using hazardous substances:
 - o Identification of substance(s)
 - o Nature of hazards
 - o Degree of exposure
 - o Degree of risk
 - o Exposure of control measures
 - o Necessity for monitoring/health surveillance
 - o Induction/training requirements.
- Hazardous materials will be stored in separate location under supervision of the OHS supervisor and according to the approved safety data sheets instructions.
- Training and education procedures for the control of hazardous materials shall be provided for all personnel who may come in contact with or be affected by those materials.
- Those responsible for the introduction of a hazardous material(s) into the workplace shall ensure that appropriate training has been provided. Training shall include the requirements for safe handling, transport, storage, disposal and environmental protection. However, chemical hazards represent potential for illness or injury due to single acute exposure or chronic repetitive exposure to toxic materials including the risk explosion. Chemical hazards will be prevented through:
 - o If possible, replacement of the hazardous substance with a less hazardous substitute Keeping the number of employees exposed to a minimum and the level of exposure below internationally established limits.
 - o Corrosive, oxidizing, and reactive chemicals that can lead to the release of flammable or toxic materials and gases and may lead directly to fires and explosions should be stored in well-ventilated areas, handled with precautions and need to be segregated from flammable or

other chemical that can react (acids vs. bases, oxidizers vs. reducers, water sensitive vs. water based, etc.).

- Workers who are required to handle corrosive, oxidizing, or reactive chemicals should be provided with specialized training and provided with, and wear, appropriate PPE (gloves, apron, splash suits, face shield or goggles, etc.). Equipped first-aid stations should be easily accessible throughout the place of work, and eye-wash stations and/or emergency showers should be provided close to all workstations where the recommended first-aid response is immediate flushing with water.

Other details on chemical hazards are available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

D. PHYSICAL HAZARDS

Physical hazards represent potential for accident or injury or illness due to repetitive exposure to a mechanical action or work activity. Single exposure to physical hazards may result in a wide range of injuries, from minor and medical aid only, to disabling, catastrophic, and/or fatal. Multiple exposures over prolonged periods can result in disabling injuries of comparable significance and consequence.

Al Jebrini activities may include a variety of situations in which workers can be exposed to lifting, carrying, repetitive work, and work-posture injuries. Such injuries may result from heavy manual lifting and repetitive work, including the operation of slicing and vacuum-packing machines and poor working postures caused by inadequate workstation and process activity design. Recommended management approaches, including the use of mechanical equipment where to reduce these injuries should be assessed and implemented.

Other details on chemical hazards are available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

E. NOISE

The OHS Supervisor will ensure that no employee will be exposed to a noise level greater than 85 dB for a duration of more than 8 hours per day without hearing protection measured regularly.

- The OHS supervisor shall ensure that excessive noise generating equipment are maintained regularly according to the preventive maintenance schedule.
- The OHS supervisor shall promptly raise work orders to service and repair equipment that is generating abnormally excessive noise.

F. ELECTRICAL HAZARDS

All electrical equipment and installations should be constructed, installed and maintained by a competent person, and so used as to guard against danger. Before installation commenced and during the progress thereof, adequate steps should be taken to ascertain the presence of and to guard against danger to workers from any live electrical cable or apparatus which is under, over or on the site.

The laying and maintenance of electrical cables and apparatus shall be governed by national laws and regulations.

All parts of electrical installations shall be of adequate size and characteristics for the power requirements and work they may be called upon to do and in particular they should:

- Be of adequate mechanical strength to withstand working conditions in construction activities;
- Not be liable to damage by water, dust or electrical, thermal or chemical action to which they may be subjected in construction activities.

- The electrical distribution at each site should be via an isolator which cuts off current from all conductors, is readily accessible and can be locked in the "off" position but not locked in the "on" position.
- The power supply to all electrical equipment should be provided with means of cutting off current from all conductors in an emergency.
- All electrical appliances and outlets should be clearly marked to indicate their purpose and voltage.
- When the layout of an installation cannot be clearly recognized, the circuits and appliances should be identified by labels or other effective means.
- Circuits and appliances carrying different voltages in the same installation should be clearly distinguished by conspicuous means such as colored markings.
- Adequate precautions should be taken to prevent installations from receiving current at a higher voltage from other installations.
- Where necessary to prevent danger, installations should be protected against lightning. Lines for signaling and telecommunication systems should not be laid on the same supports as medium- and high-voltage lines.

To prevent exposure to electrical risks the followings need to be considered:

- Marking all energized electrical devices and lines with warning signs
- Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations.
- Double insulating / grounding all electrical equipment used in environments that are, or may become, wet.
- Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas.
- Appropriate labelling of service rooms housing high voltage equipment ('electrical hazard') and where entry is controlled or prohibited.

Other details on electrical hazards are available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

G. SLIP AND FALL FROM HIGHTS

Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at construction sites. Recommended methods for the prevention of slips and falls from, or on, the same elevation include implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths, cleaning up excessive waste debris and liquid spills regularly, locating electrical cords and ropes in common areas and marked corridors, and uses of slip retardant footwear

Falls from elevation associated with working with ladders, scaffolding, and partially built structures are among the most common cause of fatal or permanent disabling injury at construction sites. If fall hazards exist, a fall protection plan should be in place which includes one or more of the following aspects, depending on the nature of the fall hazard, including: training and use of personal fall arrest systems, as well as fall rescue procedures to deal with workers whose fall has been successfully arrested, the tie in point of the fall arresting system, use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labelling covers for openings in floors, roofs, or walking surfaces, workers wearing appropriate PPE (e.g., hard hats, safety boots), Proper Signs in Arabic.

H. FIRE RISK

A fire risk assessment shall be developed and recorded. A fire safety procedure shall be in place based on the Emergency Response procedures (ERP) available below.

- Set up a designated smoking area away from raw material and storage sites.
- Equip the facility with fire detectors, alarm systems and firefighting equipment

11. SAFETY SIGNAGE

Safety signs (machinery, electrical, noise, fall, and others) shall be available on site, visible, and in Arabic language. Signage should be in accordance with international standards and be well known to, and easily understood by workers, visitors and the general public as appropriate.

All vessels that may contain substances that are hazardous as a result of chemical or toxicological properties, or temperature or pressure, should be labeled as to the contents and hazard, or appropriately color coded. Similarly, piping systems that contain hazardous substances should be labeled with the direction of flow and contents of the pipe, or color coded whenever the pipe passing through a wall or floor is interrupted by a valve or junction device.

More information on safety signage is available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

12. PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE) provides additional protection to workers exposed to workplace hazards. During the finishing works and installation phase, the Contractor / Supplier is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates the need for using such equipment to reduce the hazards to the workers, employees and visitors. All personal protective equipment shall be of a safe design and construction for the work to be performed.

The operational phase has its own PPEs as well; PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection. In the operational phase, gowns, masks, gloves, non-slip shoes are essential and other PPEs are to be determined based on their roles and scope of work.

More information on PPEs and their signage is available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

13. VISITORS HEALTH AND SAFETY

visitors to the site can gain access to areas where hazardous conditions or substances may be present, a visitor orientation and control program should be established to ensure visitors do not enter hazard areas unescorted, or come into areas of food production compromising food safety and hygiene.

14. WORKERS' HEALTH AND FIRST AID

- WORKERS' HEALTH: conduct health checkups for workers in line with Decision of Council of Ministers No. (22) of 2003 on Initial medical examinations of workers and Decision of Council of Ministers No. (24) of 2003 on conducting periodic medical checkups for workers.
- FIRST AID: Provide first aid kits on the site, ensure that kits are provided in adequate number per workers and that they are always accessible, and in good condition at all times.
- Coordinate and locate the nearest medical facility and hospital to the site. Numbers of first aid response services shall be circulated to workers.

Following are nine general directions for first aid in an emergency, outlined by the American Red Cross.

- Keep the victim lying down.

- Examine the victim - look for serious bleeding, lack of breathing, and poisoning.
- Keep the victim warm.
- Send someone to call a physician or ambulance.
- Remain calm. Do not be rushed into moving the victim unless absolutely necessary.
- Never give an unconscious victim anything to eat or drink.
- Keep the crowd away from the victim.
- Ensure the victim is comfortable and cheerful.
- Don't allow the victim see his injury.

At least one employee/worker trained in first aid shall be present at all times during working hours. The trained person phone will be distributed to all the workers on the site at highlighted boards and listed in the contact number list.

All workers can access first aid kits in approximately 5 minutes. Kits must be available at all times. The first aid equipment may contain and not limited to the following:

- Plasters in a variety of different sizes and shapes
- Small, medium and large sterile gauze dressings
- Sterile eye dressings
- Triangular bandages
- crêpe rolled bandages
- Safety pins
- Disposable sterile gloves
- Tweezers
- Scissors
- Alcohol-free cleansing wipes
- Sticky tape
- Thermometer (preferably digital)
- Skin rash cream, such as hydrocortisone or calendula
- Cream or spray to relieve insect bites and stings
- Antiseptic cream
- Painkillers such as paracetamol
- Cough medicine
- Antihistamine cream or tablets
- Distilled water for cleaning wounds
- Eye wash

Knowing what not to do in an emergency is just as important as knowing what to do. The original injury may be magnified by the wrong kind of treatment or mishandling. If a victim must be transported, ensure that methods described in a standard first aid text are used. With neck or back injuries, particularly, serious damage may occur by improperly transporting the victim. If possible, the victim should remain at the site where the injury occurred until a physician arrives, rather than risk an increase to the injury through mishandling. Further information is expected to be received during the OHS training.

15. OHS CHECKLIST



OHS PLAN - THE FARM

شركة الجبريني لصناعة الالبان
والمواد الغذائية
Al-Jebrini For Dairy &
food industries

SN	TASK	Description	Responsible Person	Frequency	Month
1	Fire Extinguisher Test	Inspect & Test all Manual Fire Extinguishers	Safety Officer	Monthly	
2	FM200 System Checking	Inspect the FM200 Panel & Gas	Safety Officer	Monthly	
3	Fire Alarm System Checking	Inspect & Test the Fire alarm panels and sensors	Safety Officer	Monthly	
4	Electrical Boards Checking	check the integrity of the electrical boards / Ampere value for each board	Maintenance Team	Monthly	
5	Emergency Light / Exit Checking	Inspect & test the emergency lights / exit checking	Safety Officer	Weekly	
6	Earthing System / Lightning Rod checking	Inspect & Test the Earthing System & the lightning rods	Maintenance Team	Monthly	
7	First Aid Kit Inspection	Check & refill the first aid kits	Safety Officer	Weekly	
8	Emergency Signs / Labels Checking	check the integrity of the safety and emergency signs	Safety Officer	Weekly	
9	Safety Valves	Inspect & test the safety valves	Maintenance Team	Monthly	
10	Electrical / Manual Forklift Inspection	Inspect & test the electrical & manual forklift	Safety Officer	Monthly	
11	Cutting Tools Inspection	Inspect & test the cutting tools	Safety Officer	Monthly	
12	Ladders Inspection	Inspect & test the ladders	Safety Officer	Monthly	
13	Welding Machines Inspection	Inspect & test the welding machines	Safety Officer	Monthly	
14	Gas / Fuel System Checking	Checking the gas heater / gas pressure / underground tank housekeeping / gas sensors	Safety Officer	Daily	
15	Housekeeping	Housekeeping		Daily	
16	Pest & Rodents Control	checking the pest killers / rat traps / using the Insecticides	Safety Officer	Monthly	
17	Chemical Materials Stores Checking	Check the housekeeping / regulation/ lighting / ventilation / warning signs of the chemical materials stores	Safety Officer	Weekly	

16. EMERGENCY RESPONSE PROCEDURES

A. PURPOSE AND SCOPE

These ERP guidelines establish a common approach to preparing for and responding to emergencies at all facilities covered by this ESIA, including fires, explosions, chemical or biological releases, serious injuries, structural failures, extreme weather and other events that may threaten life, health, property or the environment. They complement the corporate ERP and Civil Defense instructions. Details on fire prevention and LFS at Al Jebirini facilities is available in [Corporate OHS Manual \(دليل الصحة والسلامة المهنية\)](#).

B. DEFINITIONS

Accident: means unexpected events that result in injury and loss of personnel and/or damage to properties and the environment

Emergency: is a situation that poses an immediate risk to health, life, property, or environment. It may be anthropogenic or natural occurrences.

Hazard: A hazard is a situation that poses a level of threat to life, health, property, or environment. Hazards can be dormant or potential, with only a theoretical risk of harm; however, once a hazard becomes "active", it can create an emergency. A hazardous situation that has come to pass is called an incident. Hazard and possibility interact together to create risk.

Risk: means the chance of a specific undesired event occurring within a specific period or in specified circumstances.

Risk Analysis: is the identification of undesired events that lead to the materialization of a hazard, the analysis of the mechanisms by which these undesired events could occur.

C. CONTACT DETAILS IN CASES OF EMERGENCY

EMERGENCY RESPONSE NUMBERS

- Police 100
- Ambulance 101
- Civil Defense 102
- Ministry of Health 103
- Ministry of Interior 109

D. ASSEMBLY AREA

Each facility shall designate at least one safe Assembly Area outside buildings, clearly signposted on the ground plan (e.g. "Factory main parking lot", "Farm staff parking area").

Evacuation routes and assembly points shall be included in induction training and posted on evacuation maps.

E. EMERGENCY PREPAREDNESS

I. TRAINING

The OHS Supervisor is responsible for ensuring that all workers, including contracted workers, are adequately trained. This training will proper evacuation procedures, the use of emergency response equipment, and the correct utilization of personal protective devices. Refresher courses will be conducted periodically or whenever deemed necessary by the OHS Supervisor, or the Factory Manager to ensure that all staff remain updated on best practices and safety protocols. Cooperation with the civil defense is advised and encouraged.

II. PRACTICE DRILLS

All employees are mandated to participate in drills organized by the Civil Defense. These drills aim to hone skills and assess the effectiveness of the established Emergency Response Plan.

The OHS Supervisor will be responsible for creating a comprehensive report post-drill. This report will evaluate the practicality of the drill in relation to the workforce's response, the efficiency of the emergency equipment, the effectiveness of first aid and rescue procedures, and the protocols followed during evacuation and personnel headcounts. Reviews concerning the adequacy of the facility, the availability and expiration dates of first aid kits, the condition of PPEs, and other relevant factors will be conducted on a semi-annual basis.

III. EMERGENCY EQUIPMENT

Al Jebri is equipped with essential emergency and first aid tools to ensure the safety of its workforce. The following equipment is readily available on-site:

- Fire extinguishers and other fire suppression tools.
- Fire alarms and central extinguishers
- Fire hoses
- Personal protective equipment.
- Comprehensive first aid kits.

It is imperative that these kits and equipment are maintained in optimal condition. Regular checks will be conducted, and any necessary renewals or replacements will be made in accordance with the manufacturer's guidelines.

IV. EMERGENCY CATEGORIZATION

According to this Emergency Response Procedures, emergencies are identified as the following:

Level I: Minor incidents requiring on-site workers to respond and take necessary collective actions that will not jeopardize individuals' safety, health, or result in exposure. Level I incidents are not likely to spread beyond the affected area.

Level II: Intermediate level incidents requiring a response by on-site or off-site trained staff but poses no danger to the public and surrounding communities.

Level III: A major incident beyond the resources of a single facility, and where the assistance of other local organizations may be required.

V. EVACUATION MEASURES

In the event of emergencies such as fires, chemical spills, or other situations necessitating evacuation, the following procedures are to be strictly adhered to:

- Upon recognizing an emergency, the fire alarm will be sounded. All personnel are expected to evacuate promptly, using the pre-designated escape routes. While evacuating, it's essential to vocally alert others by shouting warnings like "FIRE" to ensure everyone is aware of the situation.
- As personnel evacuate, a quick check into nearby rooms is advised to ensure no one is left behind. However, one's own safety should not be compromised, and delays in evacuation should be avoided.
- Once evacuated, all personnel must gather at the designated Assembly Area. It's crucial to remain at this location until further notice. Leaving the assembly point or failing to report can lead to unnecessary search efforts for individuals presumed missing.
- If any personnel are unaccounted for, it's imperative to inform the supervisor or the OHS Supervisor immediately.
- Everyone is advised to stay alert and await further instructions. Listening to the designated safety personnel or emergency services is essential during these times.
- Personnel should only disperse, re-enter the building, or undertake any other actions upon receiving clear instructions from the designated authority.
- In situations that do not necessitate evacuation, such as medical emergencies, the relevant emergency numbers (100/101/102) should be dialed immediately to alert the Police. Additionally, the OHS Supervisor should be informed without delay.

VI. CHEMICAL AND BIOLOGICAL INCIDENTS AND EXPOSURES

In the food production industry, the potential for chemical and biological incidents is a significant concern. The following procedures are established to address any chemical or biological incidents and exposures:

- **Immediate Response:** In the event of a chemical spill or biological exposure, the affected area should be immediately isolated. All personnel in the vicinity should evacuate to a safe distance.
- **Alert and Communication:** Activate the emergency alarm and inform the OHS Supervisor. If the incident poses a threat to a larger area or the community, local authorities should be notified immediately.
- **Containment:** Use spill kits or other containment measures to prevent the spread of the chemical or biological agent. Ensure that drains and water sources are protected from contamination.
- **Personal Protection:** All personnel dealing with the incident should wear appropriate personal protective equipment (PPE), including gloves, masks, and protective eyewear.
- **Clean-up:** Once the spill or exposure is contained, initiate the clean-up using appropriate agents. For chemicals, refer to the Material Safety Data Sheet (MSDS) for guidance on clean-up procedures. For biological exposures, ensure the area is disinfected thoroughly.
- **Medical Attention:** Any individual exposed to harmful chemicals or biological agents should seek immediate medical attention. It's essential to provide medical personnel with information about the specific chemical or biological agent involved.
- **Documentation and Reporting:** Document the incident, detailing the cause, response actions, and any injuries or exposures. This report should be submitted to the OHS Supervisor and kept for future reference.
- **Review and Preventive Measures:** Post-incident, a review should be conducted to understand the cause and prevent future occurrences. This might involve updating safety protocols, training sessions for staff, or changes in storage and handling procedures.
- **Waste Disposal:** Ensure that any waste generated from the clean-up, including used PPE, is disposed of following the guidelines for hazardous waste.

VII. PERSONAL INJURIES

In the event of personal injuries the following notification and response procedures shall be strictly adhered to:

- **Immediate Medical Attention:** If an injury occurs, the priority is to provide immediate medical assistance. If the injury is severe, an ambulance should be called without delay. Additionally, the company's insurance provider should be informed.

- Civil Defense Involvement: For major injuries, the Civil Defense will be alerted. They will provide necessary first aid and facilitate the transportation of the injured individual to the nearest and most appropriate medical facility.
- Accompanying the Injured: A designated emergency respondent or their appointed representative shall accompany the injured individual to the medical facility. They will provide the medical team with essential information about the injured person, the specifics of the incident, and any first aid measures that were administered.
- Incident Investigation: In the unfortunate event of multiple injuries or fatalities, it's imperative to secure the site immediately. A thorough and formal investigation will be conducted to understand the cause and prevent future occurrences.

F. GENERAL REPORTING REQUIREMENTS

- Call emergency response services based on the incidents on the numbers.
- Provide the emergency services with your name, location, phone number, where the call is being made from, location of emergency and any other useful details
- State type of emergency (fire, medical, spills, crime, etc.)
- State the number and condition of victims, extent and description of incidents, material involved.
- Do not hang up first, let the emergency services hang up when they have acquired all needed information.

I. MEDICAL EMERGENCIES

- Survey the scene, evaluate the personal safety issues.
- Request immediate assistance.
- Call emergency services
- Provide the needed information as described above.
- Alert trained first aid personnel to respond to the victim's location and bring the first aid kit.
- Do not move the victim unless the victim's location is unsafe.
- Take precautions to prevent contact with body fluids and exposure to pathogens
- Meet the ambulance at the nearest entrance or emergency access point, direct them to the victim's location.

G. INCIDENT DOCUMENTATION AND INVESTIGATION

Following any emergency situation, it is imperative to maintain a comprehensive record of the event. The OHS Supervisor shall be responsible for this documentation.

- Documentation: All reports, photographs, video recordings, and any form of communication during the crisis should be meticulously documented. These records serve as a crucial reference for understanding the event's specifics and for any subsequent investigations or reviews.
- Immediate Investigation: Once the immediate emergency has been addressed and the situation is stabilized, an in-depth investigation should commence. The primary objective of this investigation is to ascertain the root causes of the incident, draw conclusions, and implement measures to prevent similar occurrences in the future.
- Formation of Investigation Team: in coordination with relevant governmental bodies such as the Civil Defense, Ministry of Health, and Ministry of Justice, should form an investigation team. This team will be tasked with conducting a thorough review of the incident, gathering evidence, interviewing witnesses, and compiling a detailed report with recommendations.

H. INCIDENT REPORTING FORM

APPENDIX - INCIDENT REPORTING FORM

Report No: _____

Date of Report: _____

Injured Party: _____

Employer: _____

Site: _____

Site Location: _____

Report Prepared By: _____

Signature: _____

Title: _____

1. ACCIDENT/INCIDENT CATEGORY (check all that applies)

Injury Illness Near Miss Property Damage Fire Chemical Exposure On-site
Equipment Motor Vehicle Electrical Mechanical Spill Other
(Specify: _____)

2. DATE AND TIME OF ACCIDENT/INCIDENT: _____

Please identify the actions leading to or contributing to the accident/incident and the actions following the accident/incident.

3. WITNESS TO ACCIDENT/INCIDENT:

Name: _____

Company: _____

Address: _____

Phone No.: _____

Name: _____

Company: _____

Address: _____

Phone No.: _____

4. INJURED - ILL:

Name: _____

Address: _____

Age: _____

Length of Service: _____ Time on Present Job: _____

Time/Classification: _____

4. SEVERITY OF INJURY OR ILLNESS:

___ Disabling ___ non-disabling ___ Fatality ___ Medical Treatment ___ First Aid Only

5. ESTIMATED NUMBER OF DAYS AWAY FROM JOB: _____

6. NATURE OF INJURY OR ILLNESS: _____

7. CLASSIFICATION OF INJURY (Check all that apply):

___ Abrasions ___ Dislocations ___ Punctures ___ Bites ___ Faint/Dizziness ___ Burns ___ Blisters ___
Fractures ___ Respiratory Allergy ___ Bruises ___ Sprains ___ Chemical Burns ___ Heat Burns ___ Toxic
Resp. Exposure ___ Cold Exposure ___ Heat Exhaustion ___ Toxic Ingestion ___ Concussion ___ Heat Stroke
___ Dermal Allergy ___ Lacerations

• Part of Body Affected: _____

• Degree of Disability: _____

• Date Medical Care was received: _____

• Where Medical Care was received: _____

• Address (if off-site): _____

8. PROPERTY DAMAGE: Description of Damage:

Cost of Damage: \$ _____

10. ACCIDENT/INCIDENT ANALYSIS: Causative agent most directly related to accident/incident (Object, substance, material, machinery, equipment, conditions)

- Was weather a factor?
- Unsafe mechanical/physical/environmental condition at the time of accident/incident (Be specific):

11. ON-SITE ACCIDENTS/INCIDENTS:

- Was injured using the required equipment?

12. ACTION TAKEN TO PREVENT RECURRENCE: (Be specific. What has or will be done? When will it be done? Who is the responsible party to ensure that the correction is made?)

13. ACCIDENT/INCIDENT REPORT REVIEWED BY:

Name Printed: _____ Signature _____

14. OTHERS PARTICIPATING IN INVESTIGATION:

Signature _____ Title _____

Signature _____ Title _____

Signature _____ Title _____

I. SUGGESTED INCIDENT REPORTING LOG

No.	Injured Party	Site / Location	Reported By	Type of Incident	Date and Time of Incident	Severity of Incident / injury	Description of incident	Classification of injury (if any)	Medical treatment needed and received?	Estimated cost of damage	Analysis of cause of incident	Required mitigation measures to prevent reoccurrence

ANNEX III: GRIEVANCE MECHANISM

1. DEFINITIONS

- **The complaint:** A written, or electronic document submitted by the complainant or his agent that reports a wrong behavior or shortening to perform a service or taking an action that the company or one of its employees was supposed to do, or regarding any form of discrimination or violation of the legislation in force, and it shall be submitted to the E&S coordinator or management of the company.
- **The complainant:** any normal person, his agent, his guardian, and every legal person or agent who has submitted a complaint about damage or suffering as a result of the implementation of the project, its implementation mechanisms, or its results.
- **Project Workers:** These include the direct workers hired to work for Al Jebrini/ Al Motawaset in a direct way and the contracted workers who will be involved in Al Jebrini's new expansion through contractor firms, consultancy firms, or engineering firms.

2. PROJECT DEFINED GRIEVANCES CLASSIFICATION

- Expected impacts and their relevant mitigation measures are listed in the ESMP matrices for all subprojects, the received complaints and grievances shall be screened against the matrix in order to resolve the issues and determine the most appropriate resolution.

Received grievances can be categorized according to their frequency and severity into the following;

Category	Description	Severity	Resolution
A	Standard impacts and issues that are mostly, but not necessarily, included in the ESMP/ ESIA and an approved answers can be provided instantly	Low	Report to complainant, fill grievance form, and fill the grievance log.
B	Impacts that are not frequent or may have a one-time occurrence nature and are of a local nature	Medium	Consult the project management to draft an appropriate response.
C	Frequent, or potentially high impact or widespread that requires immediate attention.	Potentially High	Prioritize depending on severity and involve the project management to resolve and set a management strategy. Moreover, include impact in the updated ESMP and management plans.

3. PUBLIC GRIEVANCES UPTAKE CHANNELS

The E&S Focal Points in cooperation with the human resources department will be responsible for the overall management of the public's grievances, review, verification, preparation of response, and recommending mitigation measures to the management.

Uptake channels will be as follows;

- By Email: romel.gudemat@palgroup.ps
- By Phone: +9702259612
- By Personal Visit: Hebron, Al Shuba', Al Jebrini Headquarters/ or to the farm at Al Tahryeh site.

- By Facebook Page Messages: <https://www.facebook.com/aljebrini.dairy>
- Instagram: https://www.instagram.com/aljebrini_dairy/

4. DIRECT WORKERS' GRIEVANCES UPTAKE CHANNELS

Al Jebrini/ Motawaset will provide direct and contracted workers with appropriate uptake mechanisms to voice their concerns and grievances to the management, the E&S Focal Points will be responsible for direct liaison with the Human Resources. Employers (e.g., contractors or suppliers for contracted workers) and the company's management to resolve workers' complaints. The E&S Focal Points in turn, will voice their complaints directly to the company's management through the same process and timeline for resolution.

Additionally, the company will be responsible for allocating a complaints box that is easily accessible to all workers and at a location that is neutral, away from management offices, and not monitored by security cameras.

1. By Email: romel.gudemat@palgroup.ps
2. By Phone: : +9702259612
3. By filling the grievance form at the office of the E&S Focal Points

5. ANONYMOUS GRIEVANCES

The GM also includes an anonymous reporting process as some complainants may choose to file a complaint anonymously. Channels to accept and respond to anonymous grievances will be communicated to project affected parties throughout project implementation. Anonymous complaints should provide factual details and specific allegations of misconduct or serious wrongdoing related to any of the project activities. The E&S Focal Points shall ask the complainant about the preferable way to inform him/her of the solution.

Complainants can request that their personal identification information to be anonymized. Complainants are encouraged to maintain contact details in order to report back to them with resolution.

6. GBV (SEA / SH) GRIEVANCES UPTAKE CHANNELS

The GM system includes specific procedures for SEA/SH grievances including confidential reporting and ethical documentation of GBV cases. Channels to accept and respond to GBV grievances will be communicated to the public and project workers during stakeholder engagement activities, inductions, consultations and throughout project implementation. The GM will accept GBV related grievances through the available channels. Telephone information line, email address and procedures will be communicated to during consultations and induction sessions.

The GM will report any GBV grievances directly to the upper management and will be treated and resolved with uttermost confidentiality. In cases where survivors request legal actions and where physical abuse have occurred, the company will request the most appropriate referral channel through contacting SAWA organization at their hotline 121.

When reported through the GM, the following procedures will be followed;

- i- Accept the grievance/ complaint through the GM available channels.
- ii- Provide the complainant with the option of anonymity as described. And request their consent to be contacted by the GM focal point.
- iii- Notify company upper management and follow uttermost confidentiality.
- iv- Investigate internally and suggest the required resolution along with the survivor's consent.
- v- If the survivor decides to seek justice, under advice from SAWA and in cooperation with the Ministry of Women Affairs, the national referral system through the Ministry will be followed.

- vi- After referral, the GM focal point will follow up with the survivor to ensure proper care is provided to them, and to obtain feedback from the Ministry regarding the case for filing and closure.
- vii- Document the details and insert in the log.
- viii- Investigate the case and identify the source of issue to suggest preventive measures for such cases.

7. FILING GRIEVANCES

- The complainant fills in the designated form in writing and signs it including all personal information and details of the complaint. If they wish for anonymity, they can tick the anonymity box. Complainants have the right to also omit their personal identification information, but they need to understand and be made aware that this will not allow the ES coordinator to provide them with feedback regarding their grievance.
- The complainant encloses all copies of documents which may support the complaint.
- The E&S Focal Points will ensure that the form is filled in accurately. Once this is verified, an email/ SMS of acknowledgment with a reference number to track the complaint will be sent within 1 business day.
- If the complainant chooses to file his/her complaint verbally, the E&S Focal Points must register the complainant information and details of the complaint into the system. The complainant will receive a reference number to track his/her complaint.

8. REGISTERING GRIEVANCES

- The E&S Supervisor will enter the complaint into the GM Tracking Matrix/log.
- The GM Tracking log tracks the status of all complaints.
- The GM Tracking log records the following information:
 - Complaint Reference Number
 - Date of receipt of complaint
 - Name of complainant (Optional)
 - Gender (Optional)
 - Confirmation that a complaint is acknowledged
 - Brief description of Complaint
 - Details of internal and external communication / Attachments
 - Action taken: (Including remedies / determinations / result)
 - Date of finalization of complaint
 - Original documentation must be kept on file.

9. EXAMINATION AND RESOLUTION OF GRIEVANCES

Once the grievance has been verified as legitimate, the E&S Focal Points will inform the complainant that an investigation is underway within **three business days**. The complainant shall be informed of the estimated duration for resolving the complaint, which is no later **than two weeks** from the date of receipt of the complaint. Where the complaint is unlikely to be resolved within the estimated duration, the E&S Focal Points must promptly contact the complainant to request additional time and explain the delay. If the complaint is not resolved after the two-week period, the E&S Focal Points will refer the complaint to management to take the proper measures.

10. CLOSING GRIEVANCES

A complaint is closed in the following cases:

- Where the decision/solution of the complaint is accepted by the complainant, the E&S Focal Points shall close the complaint and sign the outcome and date in the Complaint Register.
- A Complaint that is not related to the project.

- A Complaint that is being heard by the judiciary.
- A malicious complaint.

11. REPORTING

The E&S Focal Points shall review the Complaints Register regularly for the purpose of supplying analysis and reports on complaints to management and to the F4J Project through progress and Monitoring and Evaluation reports. The reports shall include the number of complaints received, managed and closed. It shall also include analysis of systemic and recurring problems. This will aid the project management in determining the cause of complaints and whether remedial action is warranted.

Periodic Reporting shall be as following:

- A monthly report by the contractor's E&S focal point included in the progress report (Finishing Works and installation phase)
- A monthly internal report to Al Pinar management by the E&S Focal Points (operational phase)
- A quarterly summary and monitoring report by the F4J.

1. طلب تقديم شكوى

التاريخ:.....

رقم الشكوى:.....

القسم الأول: حول المشتكي/ة

اسم مقدم/ة الشكوى الرباعي (اختياري):

رقم الهوية:

لا مانع من الكشف عن هويتي (نعم \ لا) - (لا: سيتم احالة الشكوى للدوائر المختصة على انها من مجهول)

اسم المؤسسة مقدمة الشكوى:

الصفة: اعتباري شخصي وكيل وصي ولي

الجنس (للأفراد فقط): ذكر انثى

العمر (للأفراد فقط): تاريخ الميلاد: / /

رقم الهاتف:

البريد الالكتروني:

القسم الثاني: حول الشكوى

موضوع الشكوى:

.....

.....

الجهة المقدم بحقها الشكوى:

.....

.....

هل الشكوى منظورة أمام القضاء: نعم لا

هل تقدمت بشكوى في ذات الموضوع سابقا: نعم لا

- اسم الجهة المقدم بحقها الشكوى سابقا: تاريخ التقديم: /...../.....

- هل تلقيت ردا على الشكوى السابقة: نعم، تاريخ الرد:/...../..... لا

وقائع الشكوى:

.....

.....

القسم الثالث: مرفقات الشكوى (وثائق ومستندات)

- 1-
2-
3-

أقر وأصحح أنا مقدم/ة الشكوى..... بأن المعلومات والبيانات والمرفقات الواردة أعلاه هي معلومات وبيانات ومرفقات صحيحة وحقيقية والتزم واتعهد بتحمل كامل المسؤولية القانونية فيما لو تبين خلاف ذلك في أي وقت من الأوقات أو إذا تبين أن الشكوى المقدمة من قبلي كيدية.

وعليه أوقع

توقيع و/أو بصمة مقدم/ة الشكوى: تاريخ تقديم الشكوى: / /
توقيع و/أو بصمة الشخص الذي استعان به مقدم الشكوى في كتابة الشكوى:
اسم الموظف/ة مستلم/ة الشكوى:
توقيع الموظف/ة مستلم/ة الشكوى: تاريخ استلام الشكوى: / /

القسم الرابع: (خاص لاستخدام مسؤول الشكاوى)

التوصية حول الشكوى:
.....
.....

قبول الشكوى

رفض الشكوى

- مبررات رفض الشكوى:
.....
.....

التاريخ:

مسؤول لشكاوى

التوقيع:

2. ابلاغ رد لمقدم الشكوى

التاريخ:.....

الأخ / الأخت / السادة مؤسسة.....المحترم/ المحترمة/ المحترمين

الموضوع: ابلاغ رد حول الشكوى رقم ()

تحية طيبة وبعد،

تهديكم شركة الجبريني اطيب التحيات، وبناء على متابعة الشكوى رقم () المقدمة من طرفكم بتاريخ...../...../.....
وموضوعها، نود ابلاغكم بالرد الآتي:

مع فائق الاحترام والتقدير

مسؤول الشكاوى

3. سجل الشكاوى

الرقم	رقم الشكاوى كما في النظام	مقدم الشكاوى	مستلم الشكاوى	الجنس (M/F)	تاريخ تقديم الشكاوى	حالة الشكاوى	تفاصيل حالة الشكاوى	موضوع الشكاوى	جهة المتابعة	تاريخ اغلاق الشكاوى	طريقة الاستلام	جهة الاختصاص	طبيعة الرد	ملاحظات
1						مقبول	قيد المتابعة							
2						مرفوض	متعثرة							
3						مقبول	مرفوض							
4						مقبول	مغلق							
5														
6														
7														
8														

- SIMPLIFIED ARABIC BROCHURE

أنشطة المشروع

يهدف مشروع التوسعة التابع لشركة الجبريني إلى تطوير قدرات الشركة في إنتاج الألبان ومشتقاتها، وتحسين إدارة المزرعة، وتوطين تصنيع عبوات التعبئة البلاستيكية داخل مجموعة الجبريني، وذلك من خلال تنفيذ مجموعة من الأنشطة داخل مواقع الشركة القائمة في محافظة الخليل والظاهرية، وتشمل ما يلي: استكمال وتجهيز مبنى مصنع الألبان الجديد داخل موقع الشركة، بما في ذلك غرف الإنتاج، التبريد، التخزين، والمختبرات. إنشاء وتجهيز مصنع البلاستيك الجديد لإنتاج عبوات ومنتجات التعبئة الخاصة بمنتجات الألبان والعصائر، من خلال تركيب ماكينات القوالب بالحقن والنفخ وخطوط التبريد والمناولة. استكمال أعمال توسعة مزرعة الأبقار في الظاهرية من خلال إنشاء حظائر جديدة وتحسين مرافق العلف، مياه الشرب، إدارة الروث، والتهوية. استكمال وتجهيز مرافق الهاضم الحيوي والبنية التحتية المرتبطة به وربطه بمنشآت الشركة للاستفادة من الغاز الحيوي والكهرباء المنتجة في تشغيل المنشآت. التوظيف والتدريب للعاملين الجدد ورفع قدرات العاملين الحاليين على الجوانب الفنية، والسلامة الغذائية، والصحة والسلامة المهنية، والالتزام البيئي. أما مرحلة التشغيل فتتكون من تشغيل المزرعة والمصانع والمنشآت المساندة بشكل يومي لإنتاج منتجات الألبان ومشتقاتها وتصنيع العبوات البلاستيكية، مع الالتزام بتطبيق خطط السلامة الغذائية، والسلامة المهنية، وحماية البيئة.

الدية الشكاوى

بناء على قرار مجلس الوزراء رقم 8 للعام 2016 وبالتوافق مع السياسات الاجرائية للبنك الدولي، توفر هذه الالية الحق في تقديم أي شكاوى او استفسار او رأي لأي شخص طالما تتعلق بالمشروع او أحد مكوناته او انشطته.

الشكاوى غير المنظور اليها

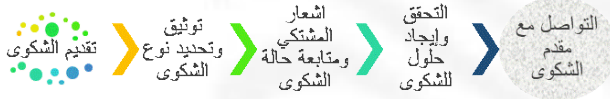
- الشكاوى الغير متعلقة بالمشروع او أحد مكوناته او انشطته
- الشكاوى المنظورة امام القضاء او المحاكم او هيئات التحكيم
- الشكاوى الخالية من الصحة

شكاوى العنف المبني على النوع الاجتماعي

يستقبل النظام أي شكاوى متعلقة بالعنف القائم على النوع الاجتماعي او العنف والتحرش او الاستغلال الجنسي. حيث يتم توفير السرية الكاملة للمشتكي ويتم تحويل الحالة لمؤسسات خاصة تعنى بحالات العنف المبني على النوع الاجتماعي.

سرية المعلومات

يحق للمشتكي/ة، كما ينص نموذج الشكاوى، بطلب عدم مشاركة هويته/ها، حيث يتم تحويل الشكاوى على انها من مجهول. ويحق أيضا للمشتكي/ة بعدم الادلاء بمعلوماته/ها، ولكن في هذه الحالة لن يكون من المستطاع الرد على المشتكي/ة بخصوص حالة او نتيجة شكواه/ها.





كيفية تقديم شكوى الى الشركة؟؟؟

- عن طريق الايميل: romel.qudemat@palgroup.ps
- عن طريق الحضور الشخصي الى الشركة:
مصنع شركة الجبريني الرئيسي، الخليل، الشعبة او في المزارع في الظاهرية.
- عن طريق الفيسبوك عبر الرابط التالي <https://www.facebook.com/aljebrini.dairy>
- عن طريق انستجرام: https://www.instagram.com/aljebrini_dairy/
- عبر الهاتف: 9702259612

ANNEX IV: FOOD SAFETY AND HYGIENE PLAN

1. PURPOSE AND SCOPE

This Food Safety and Hygiene Plan (FSHP) set out the minimum food-safety and hygiene requirements to be applied by Al Jebrini Co. and Al Motawaset Co. across:

- The existing main dairy factory in Hebron;
- The artisanal “Baladi” dairy factory in Al Thahreyeh;
- The cow farms and associated milking / raw-milk cooling facilities;
- The plastic factory producing primary and secondary food-contact packaging;
- Milk collection, internal transport, storage and dispatch.

The Plan operationalizes the risks, mitigation measures and ESMP requirements in Chapter 7 and Chapter 8 of this ESIA, and consolidates existing company procedures and ESA findings (quality department, MoH certificate, personal hygiene procedures, pest control, traceability system, cooling chain, etc.).

It applies to all workers and managers, as well as contractors, visitors, tanker drivers and any person who may enter food-handling or packaging areas.

2. FOOD SAFETY AND HYGIENE POLICY

Al Jebrini Co. and Al Motawaset Co. commit to:

1. Producing safe, legal and high-quality milk and dairy products that comply with Palestinian Public Health Law and all relevant PSI mandatory specifications and regulations for food safety, microbiological criteria and foods of animal origin.
2. Implementing and maintaining a Food Safety Management System (FSMS) based on Codex HACCP principles and aligned with ISO 22000:2018 requirements for organizations in the food chain.
3. Applying Good Hygiene Practices (GHP) and prerequisite programs (PRPs) in line with:
 - Codex General Principles of Food Hygiene (CXC 1-1969) and its HACCP annex – e.g. <https://www.fao.org/fao-who-codexalimentarius/en/>
 - Codex Code of Hygienic Practice for Milk and Milk Products (CXP 57) – <https://www.fao.org/3/j2308e/j2308e02.htm>
 - World Bank Group EHS Guidelines for Dairy Processing, section “Food Safety Impacts and Management”.
4. Protecting consumer health and preventing foodborne disease by implementing WHO’s “Five Keys to Safer Food” (keep clean; separate raw and cooked; cook / pasteurize thoroughly; keep food at safe temperatures; use safe water and raw materials) – <https://www.who.int/publications/i/item/9789241594639>.
5. Ensuring full traceability and effective recall for all products, and transparent communication with regulators and consumers if any food-safety concern arises.
6. Continual improvement of the FSMS through monitoring, internal audits, corrective actions and management review.

3. REFERENCE STANDARDS AND DOCUMENTS

The FSHP is implemented in compliance with:

- Palestinian Public Health Law and relevant regulations;
- PSI mandatory specifications on pollutants in food, food safety conditions, foods of animal origin, food additives and microbiological criteria;
- World Bank ESS1, ESS3 and ESS4;

- World Bank Group EHS Guidelines: General EHS and Dairy Processing (food safety section);

Existing company procedures (personal hygiene, pest and rodent control, medical examinations, staff illness, visiting control, waste management, etc.) are integral parts of this FSHP and shall be updated to align with it.

4. GOVERNANCE AND RESPONSIBILITIES

4.1 Company-level roles

- General Manager / Board
 - Approve the FSHP and allocate adequate resources (staff, training, laboratory capacity, equipment).
 - Review food-safety performance at least annually and after any serious incident.
- Quality & Food Safety Manager (existing Quality Department)
 - Overall FSMS owner and Food Safety Team Leader.
 - Ensure hazard analyses, HACCP plans and PRPs are developed, implemented and reviewed for each facility.
 - Liaise with MoH, PSI, EQA and other authorities on food-safety matters.
- E&S Focal Points and OHS Supervisors
 - Ensure alignment between FSHP and ESMP/OHS Plan (e.g. chemicals management, pest control, workers' health, emergency response).
- Plant Managers (Main Dairy Factory, Artisanal Dairy Factory, Plastic Factory)
 - Ensure local implementation of the FSHP, staff training and supervision.
 - Maintain daily records and ensure that deviations trigger timely corrective actions.
- Farm Manager and Veterinary Team (Cow Farms)
 - Implement farm-level food-safety controls, including animal health, veterinary treatments, milking hygiene, bulk tank cooling and raw-milk quality.
- Maintenance Manager
 - Ensure preventive maintenance and calibration of all equipment that can impact food safety (temperature, time, flow, pressure, weighing, metal detection, CIP systems, pasteurizers, chillers, compressors, generators).
- Warehouse and Logistics Manager
 - Control conditions for storage and transport of raw materials, packaging and finished products, including cold chain integrity and vehicle hygiene.

5. FOOD SAFETY MANAGEMENT SYSTEM BASED ON HACCP

The FSMS will follow Codex HACCP principles and the structure of ISO 22000:2018:

1. Hazard Analysis:
 - Identify biological, chemical and physical hazards from farm to finished product, including allergens and risks linked to raw milk, water, packaging and utilities.
2. Determine Critical Control Points (CCPs):
 - e.g. pasteurization, fermentation / incubation, metal detection, final product cooling, chemical residues, water treatment.
3. Establish Critical Limits:
 - Time–temperature combinations for pasteurization, minimum cooling temperature, maximum microbial counts, etc.
4. Monitoring:
 - Continuous or batch monitoring of CCPs with defined responsibilities, frequencies and records (e.g. charts, logs, SCADA).
5. Corrective Actions:
 - Procedures describing how to react when critical limits are exceeded (product segregation, rework or disposal; root-cause analysis; retraining).
6. Verification:

- Internal audits, independent laboratory tests, review of records, challenge tests where needed.
7. Documentation and Recordkeeping:
- HACCP plans, PRPs, procedures, work instructions, forms and logs retained for at least the shelf life plus a defined period.

HACCP plans shall be prepared and approved separately for:

- Artisanal dairy factory;
- Cow farms and raw-milk collection;
- Plastic packaging production where packaging is in direct contact with dairy products.

6. PREREQUISITE PROGRAMS AND GOOD HYGIENE PRACTICES

The following PRPs apply across all relevant facilities (farms, dairy factories, plastic factory). Many of these controls already exist and are reinforced here.

6.1 FACILITY LAYOUT, ZONING AND PRODUCT FLOW

- Maintain a clear separation between “dirty” and “clean” areas (e.g. raw-milk reception, pre-washing, packaging, finished product storage) to minimize cross-contamination, in line with Dairy EHS guidelines.
- Design and operate one-directional flows of products, packaging, people and waste wherever possible.
- Restrict access to food-handling areas to authorized personnel only, using access control, visitor badges and sign-in procedures.

6.2 CLEANING AND SANITATION (CIP AND MANUAL)

- Maintain written sanitation SOPs for all areas and equipment, with defined frequencies, detergents/disinfectants, contact times and verification methods.
 - Operate CIP systems (for tanks, pasteurizers, pipelines) according to validated programs; record each CIP cycle (time, temperature, concentration).
 - Use only approved food-grade cleaning and disinfection chemicals, stored and dosed safely and under the hazardous-materials procedures in the ESMP.
- 6.3 Personal hygiene and worker enforce personal hygiene procedures already in place (handwashing, protective clothing, and phone restrictions, illness reporting).ting).
- Provide adequate handwashing stations with soap, disposable towels and posters using WHO “Five Keys to Safer Food” messages.
 - Ensure medical examinations and “fit for work” documentation are implemented as per national regulations and company procedures.

6.4 RAW MATERIALS, WATER AND UTILITIES

- Implement strict procedures for receiving and inspecting raw milk, other ingredients and auxiliaries (e.g. salt, cultures, stabilizers): temperature checks, sensory examination, documentation and sampling as per product specification.
- Use only **safe water** for product formulation, ice and final rinses, complying with potable water standards. Monitor water quality microbiologically and chemically at defined intervals, with corrective action in case of deviation.
- Ensure steam or compressed air that may contact food or food-contact surfaces is of suitable quality (e.g. food-grade lubricants, oil-free air where required).

6.5 PEST AND VECTOR MANAGEMENT

- Maintain and periodically review the Pest and Rodent Control Procedure already implemented at farms and factories, with mapped bait / trap locations and records of inspections and treatments.
- Prioritize physical and housekeeping measures (screens, door seals, vegetation control, waste management) before chemical control.

6.6 TEMPERATURE CONTROL AND COLD CHAIN

- Maintain uninterrupted cold chain from farm bulk tanks through transport, intermediate storage and final product distribution, as required by dairy EHS guidance.
- Install calibrated thermometers / data loggers in chillers, freezers, cold rooms and vehicles; keep temperature logs and review them daily.
- Define time-temperature limits for holding of raw milk, intermediate products and finished products, and procedures for product disposition in case of excursions.

6.7 PACKAGING AND PLASTIC FACTORY CONTROLS

- Use only food-grade resins, colorants and additives for primary packaging in contact with dairy products, compliant with recognized food-contact standards (e.g. EU Regulation 10/2011 or equivalent) or customer specifications.
- Maintain segregation between food-grade raw materials and any non-food-grade materials; label all silos, containers and storage areas clearly.
- Control regrind and recycled materials: do not use recycled plastics in direct contact with dairy products unless approved under relevant food-contact regulations.
- Keep packaging production, storage and conveying areas clean and free of oil, grease and foreign matter; cover packaging to avoid dust or pest contamination.

6.8 WASTE, BY-PRODUCTS AND NON-CONFORMING PRODUCTS

- Implement waste and by-products management procedures in the ESMP to avoid re-entry of contaminated waste into the food chain (e.g. non-conforming milk, whey, returned products).
- Maintain documented procedures for handling, segregation, evaluation and disposal of non-conforming products, including clear labelling (“HOLD”, “REJECT”, “REWORK”).

6.9 TRACEABILITY, LABELLING AND RECALL

- Maintain traceability from raw materials and packaging through production batch and distribution to customers, in line with EHS guidance.
- Ensure labels comply with Palestinian and importing-country requirements for product name, ingredients, allergens, shelf life, storage conditions, batch number, production date and company contacts.
- Develop and test a Product Recall and Withdrawal Procedure at least annually, simulating recall of a defined batch and documenting lessons learned.

6.10 TRAINING, AWARENESS AND CULTURE

- Provide induction and annual refresher training on hygiene, food safety, HACCP roles and FSHP requirements to all food-handlers, farm workers and relevant contractors.
- Keep detailed records of training content, trainers and attendance, as already reflected in the ESMP matrix.
- Use toolbox talks, posters and visual aids in Arabic to reinforce key messages (e.g. Five Keys to Safer Food).

6.11 DOCUMENTATION, AUDITS AND CONTINUOUS IMPROVEMENT

- Maintain an integrated FSMS manual, procedures and records (physical or electronic) under document-control rules.
- Conduct internal food-safety audits at least twice per year at each facility; track non-conformities and corrective actions.
- Use results of monitoring, customer complaints, inspections and audits as inputs to management review and improvement plans.

7. SUBPROJECT-SPECIFIC FOOD SAFETY CONTROLS

7.1 COW FARMS AND RAW-MILK PRODUCTION

In addition to farm-level measures already described in the ESA and ESMP (veterinary inspection, animal health, waste management, traceability, cooling), the FSHP requires:

- Application of FAO/IDF Guide to Good Dairy Farming Practice for animal health, milking hygiene, feed and water quality and environmental management.
- Written milking SOPs covering udder preparation (pre-dipping, wiping), use of single-use towels, cluster disinfection, post-dipping and teat condition monitoring.
- Immediate cooling of milk to defined temperatures and time limits; prohibition of mixing milk from sick or treated animals before withdrawal periods.
- Recording of all veterinary treatments with product name, dosage, animal ID and withdrawal time; withholding of milk until withdrawal has elapsed.

7.2 ARTISANAL DAIRY FACTORY (“BALADI FACTORY”)

- Full integration into the corporate FSMS, with a dedicated HACCP study for Baladi products (e.g. jammed, Baladi cheeses and yoghurts), focusing on fermentation, salting, drying, mold prevention and pathogen control.
- Strict control of starter cultures, brine management and drying/aging conditions to meet microbiological criteria.
- Segregation from farm activities and non-food operations, with appropriate zoning and utilities control as described above.

7.3 PLASTIC FACTORY

- FSHP measures in Section 6.7 apply, plus integration into HACCP as an upstream food contact packaging supplier to the dairy factories.
- Routine migration and organoleptic testing of representative packaging, based on customer or market requirements.
- Cleaning and maintenance SOPs to prevent contamination from oils, greases and metallic particles in preforms and bottles.

8. MONITORING, VERIFICATION AND REPORTING

Monitoring requirements in the ESMP matrix for “Food Safety and Hygiene” remain applicable and are complemented as follows:

- Raw milk: routine testing for fat, protein, acidity, antibiotic residues and microbiological indicators (e.g. total plate count, coliforms, somatic cells) as per PSI and MoH requirements.

- Water: periodic testing for microbiological parameters (total coliforms, E. coli) and key chemicals (nitrates, hardness, residual chlorine where used).
- In-process and final products: scheduled microbiological and physical-chemical testing according to product risk and shelf life, aligned with PSI mandatory microbiological specifications and Codex milk standards.
- Environmental hygiene: surface and equipment swabbing (ATP or microbiological) at defined frequencies in high-risk areas.
- Temperature and critical parameters: continuous / batch recording of pasteurization, fermentation, cooling, freezing and storage temperatures; verification of calibration status of instruments.
- Audits and inspections: internal FSMS audits, pest-control inspections, MoH / PSI inspections and external certification audits (where applicable).

9. INCIDENT MANAGEMENT AND COMMUNICATION

- Any suspected or confirmed food-safety incident (e.g. detection of pathogens or foreign bodies, out-of-specification laboratory result, consumer complaint indicating illness) shall trigger:
 - Immediate product segregation and hold;
 - Investigation by the Food Safety Team;
 - Risk assessment and decision on rework, recall or destruction;
 - Notification of MoH and other authorities where required by law;
 - Corrective and preventive actions.
- Procedures for customer complaint management, including logging, investigation and feedback, are part of the FSMS and are aligned with EHS recommendation

ANNEX V: PALESTINIAN CIVIL DEFENCE REQUIREMENTS FOR PV SYSTEMS:

attached the specifications for Civil Defense in Palestine regarding the installation of PV systems (above 250 kWp). It outlines necessary permits, design and safety prerequisites, including the technical elements to be implemented.

1/13 ملحق رقم (1) :

اشتراطات الوقاية والسلامة الواجب توفرها لأنظمة الطاقة الشمسية بمختلف أحجامها .
1/13 أولاً :- محطات الطاقة الشمسية المتوسطة والكبيرة بقدرة تتجاوز 250 كيلو. واط :

2/1/13 المتطلبات من الناحية المعمارية والإنشائية:

١. يجب إحضار الموافقات المطلوبة من الجهات الرسمية ذات العلاقة في المنطقة المراد تركيب نظام الطاقة الشمسية فيها. (البلديات والمجالس القروية وشركات نقل وتوزيع الطاقة) من أجل البدء في إجراءات الحصول على عدم ممانعة من الدفاع المدني. مع التأكيد على ضرورة وجود ترخيص من سلطة الطاقة للمشاريع التجارية المقامة بغرض بيع الطاقة الكهربائية المنتجة لشركات التوزيع (أو الموزعين)، أو للشركة الفلسطينية لنقل الكهرباء.
٢. يجب تركيب وحدات الخلايا الشمسية بطريقة محكمة، وأن يتم مراعاة تأثير الرياح والثلوج.
٣. يجب الحصول على تقرير إنشائي من مكتب هندسي معتمد ومختص في تصميم الهياكل المعدنية، يفيد بأن الهيكل المعدني المستخدم في تثبيت الخلايا يتحمل سرعة رياح لا تقل عن 130 كم / ساعة، و وزن الثلوج حسب المنطقة و وزن الخلايا .
٤. عدم تغطية المناور أو إغلاق الممرات .
٥. يجب أن لا يزيد ارتفاع الهيكل المعدني الأمامي للنظام عن 150سم من أدنى نقطة للألواح عن السطح إن (وجدت)، أو أن لا يزيد الارتفاع عن 270 سم من أعلى نقطة للألواح الشمسية.
٦. ترك مسافة لا تقل عن 70سم عن طرف السور أو السياج (حدود الملكية) من جميع الجهات لتسهيل عملية التنظيف والصيانة .
٧. فصل منطقة الخلايا و ترك مسافات كافية للصيانة بين ألواح الخلايا الشمسية ومعالجة النهايات المسدودة وجوياً .
٨. يمنع وصول غير المشرفين على أعمال الصيانة مع الالتزام بارتداء معدات الوقاية الشخصية.
٩. يجب عدم استغلال المساحات تحت هيكل الخلايا الشمسية المركبة على الأسطح لأغراض أخرى إضافة إلى منع التخزين لأي مواد بالقرب من موقع الخلايا والانيقيرترات.
١٠. يجب أن تكون إطارات ألواح الخلايا الشمسية ملساء، أو غير حادة لمنع احتكاك عمال الصيانة مع الخلايا أثناء الحركة. و أن يكون الهيكل المعدني الحامل للألواح الشمسية أملس وغير حاد .
١١. يجب توفير إشارات إرشادية واضحة الرؤيا (توضح المسارات وأقطاب الكهرباء)، و تحذيرية (خطر الاقتراب).
١٢. توفير تقرير فني بالنظام الإنشائي لنظام الخلايا الشمسية، مع مخطط توضيحي لطريقة تركيب الألواح وعددها.

3/1/13 المتطلبات من الناحية الكهربائية والميكانيكية :

١. يجب عزل جميع التمديدات الرئيسة بممرات معدنية مغلقة مع فتحات للتهوية.
٢. يجب توفير نظام التأريض وهو خاص بنظام التيار المستمر للخلايا والممر المعدني، ويجب أن يكون مستقلاً عن نظام تأريض المنشأة وأن لا تزيد مقاومته عن 3 أوم في أجواء الصيف مع ربط جميع الأجزاء المعدنية بالنظام. (عادة يخضع نظام التأريض لمواصفات شركات التوزيع والبلديات) .
٣. يجب حماية جميع التمديدات الفرعية (أسلاك dc) داخل أنابيب بلاستيكية، وتثبيتها مع الالتزام بالألوان، حسب الأصول (القطب السالب أخضر أو أزرق) والقطب الموجب (أحمر أو بني).
٤. يجب توفير لوحات لقواطع التيار المستمر أو (الفوزات)، وتكون معزولة إضافة إلى ربطها بنظام التأريض للخلايا الشمسية مع توفير إشارات تحذيرية بخنجر الكهرباء.
٥. توفير قاطع حماية وأمان لمس، وممانعة صواعق (AC) داخلية .
٦. ربط نظام التيار المتناوب والانفريترات مع نظام التأريض للمنشأة مع توفير التقارير اللازمة حسب الأصول.
٧. توفير نظام إطفاء تلقائي للوحدات الكهربائية التي تساوي أو يزيد حملها عن 100 أمبير .
٨. توفير نظام ممانعة صواعقاً حسب الأصول للأنظمة غير المنزلية .
٩. في حال وجود محطة تحويل لشبكة الضغط العالي، يجب توفير غرفة خاصة، وبأبعاد مناسبة تحوي جميع المعدات اللازمة للمحطة مع توفير جميع قواطع الحماية .
١٠. يجب توفير اشتراطات الوقاية والسلامة بما في ذلك الطفايات اليدوية في مبنى المحطة، حسب الأصول و رؤية جهة الاختصاص.
١١. يجب فصل نظام التيار المتردد (AC) عن نظام التيار المستمر (DC) ، من حيث القواطع والتمديدات.

ANNEX VI: MINUTES OF MEETING OF PUBLIC HEARING SESSION

On Sunday, 14 December 2025 at 11:00, Al Jebrini Co. and the ESIA consultant conducted an in-person public hearing / stakeholder consultation session to disclose the draft ESIA findings for the Al Thahreyeh expansion subprojects and receive feedback from relevant stakeholders. The session was held at the meeting hall in the company's main headquarters in Hebron, and included a presentation followed by an open discussion. A total of 31 stakeholders were invited (neighbors/residents, wider community, municipalities, relevant authorities, NGOs/CBOs, federations and private sector bodies), and 13 participants attended in person, representing Hebron CCI, South Hebron CCI, MoA (Hebron), Civil Defense (Hebron), JSC, SELCO, neighbors/residents, Al Jebrini management, and municipalities.

MINUTES OF MEETING

1. Meeting details

Date: Sunday, 14 December 2025

Time: 11:00

Format: In-person consultation session, with an online participation option (Zoom) provided upon request

Venue: Meeting hall, Al Jebrini main headquarters, Hebron

Facilitators: The ESIA Consultant and Al Jebrini Management

2. Purpose of the session

The session was conducted as part of the ESIA preparation process to disclose information on the planned expansion activities, present the key environmental and social risks and proposed mitigation measures (including CAP actions), and collect stakeholder feedback and recommendations to be integrated into the ESIA and ESMP in line with ESS10.

3. Invitations and attendance

Invitees: A total of 31 stakeholders were identified and invited (including neighbors and residents, local communities, municipalities and LGUs, line ministries and regulators, service providers, chambers and federations, and relevant NGOs and CBO representatives). Invitees were contacted by phone, and invitations were also sent by email, with a Zoom participation option provided upon request.

Attendees: 13 participants attended in person, representing: Hebron Chamber of Commerce and Industry, South Hebron Chamber of Commerce and Industry, Ministry of Agriculture (Hebron), Civil Defense (Hebron), Joint Services Council, SELCO, neighbors and residents, municipalities, and Al Jebrini Management.

4. Agenda

- Opening and welcome
- Presentation by the Consultant and Al Jebrini Management
- Open discussion, questions and answers
- Closing and next steps

5. Summary of the presentation

- The Consultant and Al Jebrini Management delivered a presentation covering:
- Overview of Al Jebrini expansion activities and subprojects, and rationale for the expansion
- Summary of baseline conditions and key sensitivities
- Main anticipated positive impacts (economic and social benefits)
- Key E&S risks across the subprojects and the proposed mitigation and management measures (ESMP and CAP actions), including OHS, community health and safety, waste and wastewater management, traffic and logistics management, and life and fire safety
- Overview of the grievance mechanisms and how stakeholders can submit concerns and complaints
- Regulatory and permitting pathway and the next steps for completing the ESIA and ESMP and finalizing disclosure

6. Discussion highlights and responses (Q&A)

6.1 SELCO (Baha' Qaisiye, SELCO)

Key points raised:

- Clarification on the company's current and expected electricity needs, and coordination with the DISCOs regarding their ability to supply the additional load.
- Emphasis that the PV installation and load planning should be based on a technical study conducted in coordination with SELCO.
- Noted that DISCOs often have limited capacity to supply new projects, and load requirements must be assessed and planned carefully.

Responses and clarifications:

- Al Jebrini Management explained that the estimated needs and required amperage are still under discussion and are being considered for both current and future requirements.
- Agreed follow-up actions / ESMP linkages:
- Coordinate with SELCO to conduct a load analysis for the expansion and rooftop PV system and confirm the required capacity.
- Coordinate early with relevant DISCO(s) on the confirmed load request and practical options to avoid delays to commissioning.
- Reflect the electricity supply and load management arrangements in the project implementation planning and monitoring actions.

6.2 Ministry of Agriculture (MoA) and Dura Municipality

Key points raised:

- Status of licensing for the cow farms and clarification on the responsible authorities given the location relative to the masterplan boundary.
- Encouragement to coordinate with all relevant official bodies to avoid delays and ensure full compliance.

Responses and clarifications:

- Al Jebrini stated that the licensing process is ongoing.
- MoA clarified that, as the activity is outside the masterplan borders, it is treated under the rural area framework and requires coordination with MoLG and the relevant LGU.

Agreed follow-up actions / ESMP linkages:

- Continue and document coordination with MoA, MoLG and LGU for farm-related licensing.
- Maintain a consolidated permits and approvals tracker, and reflect permitting commitments and timing in implementation arrangements.

6.3 Civil Defense (Eng. Jalal Manasara)

Key points raised:

- Status of Civil Defense approvals, noting that Civil Defense approval should follow municipal approval and be coordinated directly with Civil Defense.

Responses and clarifications:

- The Consultant clarified that Civil Defense approval for the expansion has not yet been obtained, and that this has been covered in the ESA findings and CAP actions, with the company planning to initiate the process.

Agreed follow-up actions / ESMP linkages:

- Initiate the Civil Defense licensing and inspection process as early as possible, aligned with municipal requirements.
- Ensure life and fire safety measures, emergency preparedness, and compliance actions are implemented as per the CAP and ESMP, with evidence maintained (inspections, drills, equipment checks).

6.4 Joint Services Council (JSC)

Key points raised:

- Inquiry on whether future consultation sessions will take place and the current status of EQA and licensing processes.
- Noted that JSC may receive complaints directly and emphasized the need for proper licensing, including Civil Defense aspects.

Responses and clarifications:

- The Consultant and Al Jebrini confirmed that the ESIA process includes disclosure and ongoing engagement, and that licensing and approvals are being progressed as part of the corrective actions and implementation planning.
- Agreed follow-up actions / ESMP linkages:
- Maintain coordination with JSC on environmental compliance matters and community complaints management.
- Ensure the community grievance mechanism is operational, documented, and responsive, with clear referral and escalation to relevant authorities where needed.

6.5 Neighbors and residents (Mohammad Wleيدات)

Key points raised:

- Positive feedback on local employment opportunities provided by the company, with interest in additional opportunities for women workers.

- Expectation that the company will commit to mitigation measures and minimize any negative impacts.
- Shared experiences related to raising grievances with the company and stressed the importance of effective follow-up.

Responses and clarifications:

- The Consultant and Al Jebrini acknowledged the feedback and reiterated that mitigation measures and grievance channels are part of the ESIA and ESMP framework.
- Agreed follow-up actions / ESMP linkages:
 - Strengthen communication on the community grievance mechanism and response timelines.
 - Reflect inclusive employment considerations in implementation, where feasible, and ensure non-discrimination and safe working conditions.

6.6 South Hebron CCI

Key points raised:

- Questions on measures for energy efficiency, recycling, and related resource-efficiency actions.

Responses and clarifications:

- Al Jebrini stated that they are working with PPU on recycling PET and other production waste, and provided an overview of processes, energy efficiency measures, and the biogas facility and its integration.
- Agreed follow-up actions / ESMP linkages:
 - Maintain documentation of recycling arrangements and resource-efficiency measures (waste streams, recyclers, volumes where feasible).
 - Integrate resource-efficiency actions into monitoring and reporting (energy, waste, and circularity measures).

6.7 Hisham Al Jebrini (Al Jebrini Management)

Key points shared:

- Separation of CIP and process wastewater pipes from brown wastewater, with intent to reuse treated streams for gardening and other uses where feasible.
- Rationale for site selection (Al Thahreyyeh) and a brief reference to alternatives and no-project scenario considerations.

Agreed follow-up actions / ESMP linkages:

- Confirm the wastewater segregation, reuse approach, and operational controls through the ESMP measures and monitoring requirements.

6.8 Hebron CCI

Key points raised:

- Whether the ESIA examined internal company policies and procedures.
- Comment that World Bank GBV guidance can feel generic, and questions on whether Codes of Conduct and referral mechanisms are in place.

Responses and clarifications:

- The Consultant and Al Jebrini confirmed that internal procedures and management measures are considered within the ESIA framework, and that Codes of Conduct and referral mechanisms are addressed within the ESIA and ESMP instruments.

Agreed follow-up actions / ESMP linkages:

- Ensure CoC rollout, worker and community GM accessibility, and SEA/SH-sensitive uptake and referral pathways are clearly described and implemented, with training and records maintained.

7. Closing and next steps

The Consultant thanked participants for their contributions and confirmed that the feedback will be reflected, as applicable, in the ESIA and ESMP finalization and implementation planning. Stakeholders were reminded of the available channels for submitting additional comments and grievances and of the continued engagement approach during implementation.





Figure 17: Stakeholder Engagement Photos

ورشة مشاركة مجتمعية

AI-JEBRINI

شركة الجبريني لصناعة الألبان والمواد الغذائية

كانون أول 2025

عن المشروع

كجزء من خطة التوسع الاستراتيجية للشركة؛ تم شراء قطع أراضي جديدة في منطقة المزرعة الحالية في الظاهرية وذلك لتنفيذ 4 مشاريع جديدة:

- توسعة مزرعة الأبقار وبناء بركسات بسعة 400 رأس أبقار لزيادة كمية الحليب الخام لتلبية احتياجات السوق المحلي من منتجات الألبان
- إنشاء مصنع ألبان بلدية تحت اسم شركة "المتوسط" لتوفير منتجات ألبان بلدية تقليدية مثل أنواع من اللبنة والجبن البلدية والجميد البلدي
- إنشاء مصنع بلاستيك لتغطية حاجة الشركة من المواد البلاستيكية المستخدمة في التعبئة والتغليف
- إنشاء نظام طاقة شمسية بسعة 500 كيلو واط على أسطح المنشآت الجديدة في الظاهرية

إجراءات التخفيف: توسعة مزرعة الأبقار

- تأكيد عزل بركة تجميع الروث والقنوات الناقلة لفضلات الأبقار
- زيادة قدرة نقل السماد إلى الهاضم الحيوي
- تحسين الصرف وقص مياه الأمطار
- تنفيذ خطة معالجة السماد وتطبيقه على الأرض
- تعزيز نظافة المزرعة ومكافحة الذباب
- تعزيز إجراءات الصحة والسلامة المهنية في المزرعة والالتزام بمعدات الوقاية الشخصية
- تعزيز التدريب والجاهزية لحالات الطوارئ

Parameters and Impacts	Mitigation Measures	Monitoring Measures	Implement (SOP) Responsibility	Monitoring Responsibility Frequency	Success Indicators	Residualy Requirements
Supply and Installation Phase (PV System)						
Accessibility	<ul style="list-style-type: none"> 1. The government planning for the supply and installation phase of the PV system should be taken into account in the planning and design of the farm and related activities, such as the access roads. 2. The access roads should be planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The access roads should be planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 	<ul style="list-style-type: none"> 1. Verify the planning of the access roads. 2. Verify the construction of the access roads. 3. Verify the maintenance of the access roads. 	<ul style="list-style-type: none"> 1. The farm manager. 2. The contractor. 3. The government. 	<ul style="list-style-type: none"> 1. At least once a month. 2. At least once a month. 3. At least once a month. 	<ul style="list-style-type: none"> 1. The access roads are planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 2. The access roads are planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The access roads are planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 	<ul style="list-style-type: none"> 1. No obstacles in the access roads. 2. The access roads are planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The access roads are planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development.
Water	<ul style="list-style-type: none"> 1. Check the water supply system and the water supply network. 2. Check the water supply system and the water supply network. 3. Check the water supply system and the water supply network. 	<ul style="list-style-type: none"> 1. Monitor the water supply system. 2. Monitor the water supply system. 3. Monitor the water supply system. 	<ul style="list-style-type: none"> 1. The farm manager. 2. The contractor. 3. The government. 	<ul style="list-style-type: none"> 1. At least once a month. 2. At least once a month. 3. At least once a month. 	<ul style="list-style-type: none"> 1. The water supply system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 2. The water supply system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The water supply system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 	<ul style="list-style-type: none"> 1. No obstacles in the water supply system. 2. The water supply system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The water supply system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development.
Red Waste	<ul style="list-style-type: none"> 1. Check the red waste management system and the red waste management network. 2. Check the red waste management system and the red waste management network. 3. Check the red waste management system and the red waste management network. 	<ul style="list-style-type: none"> 1. Monitor the red waste management system. 2. Monitor the red waste management system. 3. Monitor the red waste management system. 	<ul style="list-style-type: none"> 1. The farm manager. 2. The contractor. 3. The government. 	<ul style="list-style-type: none"> 1. At least once a month. 2. At least once a month. 3. At least once a month. 	<ul style="list-style-type: none"> 1. The red waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 2. The red waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The red waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 	<ul style="list-style-type: none"> 1. No obstacles in the red waste management system. 2. The red waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The red waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development.
Health, Safety and Waste	<ul style="list-style-type: none"> 1. Check the health, safety and waste management system and the health, safety and waste management network. 2. Check the health, safety and waste management system and the health, safety and waste management network. 3. Check the health, safety and waste management system and the health, safety and waste management network. 	<ul style="list-style-type: none"> 1. Monitor the health, safety and waste management system. 2. Monitor the health, safety and waste management system. 3. Monitor the health, safety and waste management system. 	<ul style="list-style-type: none"> 1. The farm manager. 2. The contractor. 3. The government. 	<ul style="list-style-type: none"> 1. At least once a month. 2. At least once a month. 3. At least once a month. 	<ul style="list-style-type: none"> 1. The health, safety and waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 2. The health, safety and waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The health, safety and waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 	<ul style="list-style-type: none"> 1. No obstacles in the health, safety and waste management system. 2. The health, safety and waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development. 3. The health, safety and waste management system is planned and constructed according to the requirements of the Ministry of Agriculture and Rural Extension, and the Ministry of Planning and Economic Development.

Figure 18: Stakeholder Consultation Presentation

NAME / الاسم	ORGANIZATION / المؤسسة	TITLE / المنصب	PHONE NUMBER / رقم الهاتف	EMAIL / البريد الإلكتروني	SIGNATURE / التوقيع
1	بناد مسك	مديرة بنوع الكافيه	055 555 5555		
2	مدرسة رين				
3	سول فرعا ح	متركة بظهوره مدير الفوج			
4	مباؤ ابو علي بن	اتحاد الضمان مع الامانة			
5	صنادم الظير بن	المستشار المدير الفني			
6	فهد الكباري	مستشار مدير فني			
7					
8					
9					

Figure 19: Stakeholder Consultation Attendance Sheet

ANNEX VII: GOOD E&S PRACTICES FOR THE COW FARMS EXPANSION AND DAIRY FACTORY

A. E&S RISKS AND MITIGATION MEASURES

This Annex presents Good Environmental and Social (E&S) Practice measures for the cow farms expansion and the artisanal dairy factory, which form part of Al Jebrini's wider expansion at Al Thahreyeh but are not directly co-financed under the F4J III ICF support package (which focuses on the plastic factory equipment and the rooftop solar PV system). These two subprojects are included here to clearly separate the F4J III-supported components addressed in the main ESIA chapters from the additional expansion elements, while still documenting the practical measures needed to manage their E&S risks in line with GIIP, applicable Palestinian requirements, and the World Bank ESF.

Although not directly supported under F4J III, the cow farms and artisanal dairy factory interact operationally and cumulatively with the supported investments through shared utilities and site systems (notably energy, wastewater, manure management, traffic movements, OHS and emergency preparedness). Presenting these measures as "good practice" in a dedicated annex ensures the ESIA remains coherent at the level of the overall site, and provides Al Jebrini with a clear set of recommended actions, monitoring measures, responsibilities, and indicative budgets to prevent risk transfer between subprojects and to strengthen overall environmental and social performance for the expanded complex.

I. COW FARM EXPANSION

As described in [Section 2.3.1](#), the cow farm expansion consists of a newly constructed steel-frame livestock shed on about 5 donums of land adjacent to the existing farms at Al Thahreyeh, designed to accommodate around 400 additional heifers and young cows and to operate mainly as a replacement-rearing and early-lactation unit supplying raw milk to Al Jebrini's processing facilities. The expansion will increase the share of milk sourced from the company's own herd, improve security and predictability of milk supply, and make fuller use of the existing biogas digestion, manure-handling and feed-storage infrastructure.

At the same time, the expanded herd is expected to increase the environmental and social footprint of the livestock complex, particularly in relation to manure and wastewater generation and their management, potential effects on groundwater and surface water quality, odors and flies, animal health and welfare, use of veterinary drugs and chemicals, feed and water consumption, traffic associated with animals, feed and inputs, occupational health and safety for farm workers, and community health and safety for nearby land users. These risks and impacts, including their cumulative interaction with the existing farms and biogas facility, are assessed below using the methodology in Section 7.1.

■ SUBPROJECT ANTICIPATED POSITIVE IMPACTS

- **Environmental impacts**
 - Opportunity to improve manure collection, storage and treatment, including enhanced feeding of the existing biogas digestion facility, thereby reducing uncontrolled emissions and supporting cleaner energy generation.
 - Improved design of animal housing, ventilation and drainage can enhance animal health and welfare and reduce localized odor and vector problems compared to a business-as-usual scattered supply chain.
- **Economic impacts**
 - Enhance the company's own milk supply and support the increased demand anticipated from its expanded processing operations.
 - Ensure a more uninterrupted and sustainable flow of raw milk, reducing exposure to external supply disruptions and price volatility.

- Stimulate the local economy during different subproject phases through demand for construction, feed, veterinary and transport services.
- **Social impacts**
 - Additional employment opportunities, directly through the company (farm workers, technicians, drivers) and indirectly through the company's supply and marketing chains.
 - Support more stable availability of locally produced dairy products, contributing to local food security and consumer confidence in product quality.

■ OPERATION AND MAINTENANCE PHASE

Given that the expansion cow farms subproject has been established and the construction phase has been completed as evidenced in the ESA. This section focuses on the O&M relevant E&S risks, potential impacts, and mitigation measures.

II. Impact On Air Quality:

❖ Risks:

- Air emissions and greenhouse gases (GHG): Air emissions include ammonia, hydrogen sulfide, bioaerosols and dust, as well as greenhouse gases such as methane and nitrous oxide from enteric fermentation and manure management, which affect local air quality and contribute to the project's overall GHG footprint.
- Manure storage and handling: Emissions of ammonia, hydrogen sulfide and odor from manure collection areas, slurry pits / channels, and manure stockpiles, especially during agitation or spreading.
- Livestock production efficiency: low efficient nutrition and diet may increase methane emissions.
- Dust generation: Dust can reduce visibility and cause respiratory problems and facilitate the transport of odors and diseases. It could be generated from daily activities inside the farm. In addition, not all of the internal roads leading to the farm are paved and dust emissions will be generated during daily delivery of the feed to the farm from the feeding facility.
- Ventilation system efficiency: low efficiency of the ventilation system could pose air quality risks.
- Dead animals: inappropriate handling of dead cattle can spread airborne diseases and pose health risks in addition to odor increasing.
- Combustion sources on the farm: Exhaust emissions (NOx, PM, CO, SO₂) and odors from diesel generators, tractors, loaders and feed-handling machinery used in daily operation.
- Odor nuisance beyond the farm boundary: Off-site odor impacts on neighboring receptors, especially under unfavorable wind conditions or during manure spreading.
- Cumulative contribution to GHG emissions: The expanded herd increases Scope 1 emissions from livestock and manure relative to the existing farms; these are considered in the project-wide GHG screening and mitigation measures presented in Section 7.4.3.

❖ Significance:

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Manure storage and handling: Control the temperature, humidity and other environmental factors of manure storage (scraped manure areas, slurry channels and pits) to reduce emissions of ammonia, methane and hydrogen sulfide (e.g. frequent removal, covered storage where feasible,

maintaining crust on lagoons). Detailed provisions on manure collection, storage and transfer are presented under the Solid Waste and Manure Management section.

- **Biogas digestion and manure utilization:** Ensure continuous and efficient operation of the biogas digestion facility to capture methane from manure and reduce uncontrolled emissions; use the resulting digestate only in accordance with nutrient management procedures and at agronomic application rates.
- **Balanced feeding and herd productivity:** Maintain and periodically review feeding regimes to match nutritional requirements of different animal groups, improve feed conversion efficiency, and increase the carbon-to-nitrogen ratio in rations, thereby reducing enteric methane and nitrous oxide emissions per unit of milk produced.
- **Dust control on internal roads and yards:** Maintain all internal access roads to the farm in paved or well-stabilized condition as committed in the CAP; where unpaved stretches remain or during dry, windy periods, implement dust suppression (periodic wetting, speed limits of max. 20 km/h, good housekeeping of feed and bedding).
- **Ventilation system operation and maintenance:** Operate and maintain the barn ventilation system to ensure adequate air changes and uniform distribution of fresh air; implement a preventive maintenance schedule (fans, louvers, inlets, control systems) and promptly repair malfunctions that could increase indoor concentrations of ammonia, dust and bioaerosols.
- **Barn hygiene and floor cleaning:** Implement regular scraping and washing of floors, feed alleys and holding areas to prevent manure build-up and reduce odor and dust; ensure proper drainage to the manure / wastewater system so that wash water does not stagnate.
- **Dead animal management:** Handle and dispose of dead cattle in line with national regulations, MoA instructions and in coordination with local authorities, municipality, and JSC, and the carcass management measures in the Waste section; open burning or uncontrolled burial shall be prohibited.
- **Combustion sources on the farm:** Operate diesel generators, tractors, loaders and other mobile equipment in accordance with manufacturers' instructions; apply preventive maintenance (filters, injectors, exhaust systems), avoid unnecessary idling, consistent with the General EHS Guidelines for small combustion sources. Position stationary exhaust outlets to promote effective dispersion away from workers.
- **Odor management beyond farm boundaries:** Minimize off-site odor impacts by (i) avoiding land application of manure or digestate during unfavorable meteorological conditions (e.g. strong winds toward neighboring receptors), (ii) using incorporation / injection methods where feasible rather than surface spreading, and (iii) maintaining adequate storage capacity to avoid emergency spreading. Maintain a simple odor/complaints log and adjust practices where repeated complaints arise.
- **Worker protection:** Provide workers with appropriate PPE such as dust masks/respirators, gloves and eye protection when working in high-exposure areas (e.g. manure pits, during agitation or land application, or dusty operations), and include air-quality hazards (ammonia, H₂S, dust, odors) in OHS training and toolbox talks.
- **Energy efficiency and renewable energy:** Optimize the operation of the biogas digester and associated energy use and explore expanding solar PV generation, to reduce fossil fuel consumption and CO₂ emissions per liter of milk produced.

III. Noise:

- ❖ **Risks:** as the farm is surrounded by a green fence and cement wall, it is not expected to have noise risks except the noise generated from trucks and vehicles which associated with transportation of manure to the biogas digestion facility, feeding trucks and cows transportation between the site facilities.

❖ **Significance:**

The spatial influence is low (1), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is low (1), and the occurrence is possible (1). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- Minimize unnecessary idling of trucks during loading and unloading to reduce noise emissions. Also, optimize logistical planning and delivery schedules.

IV. Solid Waste:

❖ **Risks:**

- Generation and management of solid waste: solid waste generated includes waste feed, manure, and dead cows which pose risks on health and the environment if managed inappropriately.
- Feed waste: Feed can become unusable waste material if spilled during storage, loading, and unloading or during animal feeding. Waste feed, including additives, may contribute to the contamination of stormwater runoff, primarily because of its organic matter content.
- Improper manure handling and management: Manure contains nitrogen, phosphorus, and other excreted substances which may result in air emissions of ammonia and other gases and may pose a potential risk of contamination to groundwater resources through leaching and runoff. In addition, manure contains disease-causing agents such as bacteria, pathogens, viruses, parasites, and prions which may affect soil, water, and plant resources (for human, livestock, or wildlife consumption) if collected, stored and transported inappropriately.
- Dead cows (Animal Carcasses): dead cows should be properly managed and quickly disposed of to prevent the spread of disease and odors, and to avoid the attraction of vectors in line with local regulations.
- General farm solid waste: Packaging, plastics (e.g. silage wrap, feed bags, chemical containers once emptied and rinsed), bedding materials, scrap metal, domestic waste from staff facilities.
- Vectors and scavengers attracted by waste and carcasses: Flies, rodents, stray dogs, birds etc. drawn to feed waste, manure piles and carcasses.

❖ **Significance:**

The spatial influence is substantial (3), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Substantial**.

❖ **Mitigation Measures:**

- Manure collection and transfer: Ensure all manure is collected frequently from barns and alleys and transferred through the dedicated channels to the constructed lagoon, and from there on a regular schedule to the biogas facility. Maintain adequate lagoon freeboard and routinely inspect embankments for cracking, seepage, or overtopping.
- Manure storage and runoff control: Keep manure storage areas compacted and properly graded so that clean stormwater is diverted away and contaminated runoff is captured and directed to the lagoon or biogas system. Prohibit any direct discharge of manure or slurry to wadis, open drains, or neighboring lands.
- Feed management and waste minimization: Maintain calculated feed delivery in line with herd size and production stage to reduce feed waste. Match feed content to the specific nutritional requirements of the animals at different growth and lactation stages and, where appropriate, use

low-protein, amino-acid-supplemented diets to reduce nutrient excretion. Promptly clean up spilled feed in storage, loading/unloading and feeding areas.

- **Use of the biogas facility:** Operate the biogas digestion facility continuously and maintain it in good working order so that manure and other suitable organic wastes are treated and methane emissions are captured and used, rather than vented or flared unnecessarily.
- **Carcass (dead cow) management:** Maintain mortality reduction through proper animal care and disease prevention. Where deaths occur, remove carcasses from animal areas immediately, store them in a designated, covered and vector-protected area, and dispose of them promptly in coordination with MoA and local authorities (for example, through approved rendering, licensed disposal facilities, or sanitary burial / incineration in line with national requirements). Prohibit dumping of carcasses in open areas or wadis.
- **General farm solid waste management:** Maintain the company's Waste Management Procedure and forms that document waste type, quantities, disposal plan and disposal frequency. Segregate waste at source into at least: organic/agricultural waste (feed residues, bedding), recyclables (plastics, paper/cardboard, metals) and residual waste. Provide clearly labelled bins or collection points and contract the municipality / JSC or licensed collectors for regular off-site transport and disposal at approved facilities.
- **Housekeeping:** Maintain regular housekeeping across the farm, keeping feed storage, feeding areas and manure/waste storage areas clean and orderly. Cover or frequently turn manure and organic waste piles to discourage flies and odors, remove standing water, and implement basic rodent and stray animal control measures (traps, fencing, controlled access) in line with veterinary advice.
- **Training and awareness:** Provide periodic training for farm workers on the Waste Management Procedure, manure and carcass handling, and housekeeping requirements, and document attendance and topics covered.

V. Soil and Groundwater

❖ Risks:

- **Leakage and seepage from manure and wastewater infrastructure:** Cracks, inadequate lining or poor maintenance of manure channels, lagoons and holding structures may lead to seepage of nutrient-rich, saline and microbiologically contaminated liquids into underlying soils and the sensitive carbonate aquifer beneath the site, as well as lateral movement to nearby wadis and drainage lines.
- **Overflow of lagoons and contaminated runoff:** Insufficient storage capacity or inadequate freeboard in the lagoon, combined with intense rainfall events, may cause overtopping and contaminated runoff to adjacent lands and wadis.
- **Land application of manure and digestate:** Over-application of raw manure or biogas digestate on surrounding agricultural lands, application on steep slopes or close to wadis and wells, or spreading during heavy rainfall can result in leaching of nitrates, phosphates, salts, pathogens and veterinary residues to soil and groundwater, and eutrophication of surface waters.
- **Runoff from barns, yards and feed / silage storage areas:** Poor drainage and lack of separation between clean stormwater and contaminated yard runoff can transport suspended solids, nutrients and organic matter to nearby soils and wadis.
- **Spills of fuels, oils and chemicals:** Localized spills and leaks from fuel tanks, generators, vehicles, lubricants, disinfectants or veterinary chemicals, if not promptly contained and cleaned, may contaminate soil and, over time, percolate to groundwater.
- **Improper carcass disposal:** Any uncontrolled burial or dumping of dead animals may lead to local contamination "hot spots" with organic matter and pathogens that can migrate to soil and groundwater.

❖ **Significance:**

The spatial influence is substantial (3), given the potential to affect groundwater and downstream receptors; the duration extends over the entire O&M phase and may lead to long-term effects (3); the intensity of potential negative impacts is substantial (3); and the occurrence is possible (2). Consequently, the risk is therefore rated as **Substantial**.

❖ **Mitigation Measures:**

- Engineering of manure and wastewater structures:
 - Ensure the manure lagoon, channels and collection pits are constructed and maintained with low-permeability lining (e.g. reinforced concrete or suitable geomembrane) and adequate freeboard.
 - Inspect these structures regularly for cracks, corrosion, erosion, seepage stains or animal burrows, and repair defects immediately.
 - Maintain fencing around the lagoon to prevent damage by animals or unauthorized vehicles.
- Separation of clean and contaminated water:
 - Install and maintain roof gutters and surface water diversion channels to keep clean stormwater away from manure and waste-handling areas.
 - Ensure that contaminated runoff from barns, yards, manure storage and feed / silage areas is collected and directed to the lagoon or biogas / pre-treatment system, not to open ground or wadis.
- Nutrient management and land application plan:
 - Develop and implement a written nutrient management plan for land application of manure and digestate, in line with GIIP and FAO guidance.
 - Analyze manure / digestate at least every 2-3 years (or when feed regimes change) to estimate nutrient content and calculate agronomic application rates based on crop needs, soil capacity and groundwater vulnerability.
 - Maintain minimum buffer distances from flood-prone areas and property boundaries, and avoid spreading on steep slopes, saturated soils or before heavy rainfall.
 - Keep detailed records of application dates, fields, quantities and any complaints or incidents.
- Good practice in feed and silage management:
 - Store silage and feed on hard standing with controlled drainage to the manure/wastewater system.
 - Promptly clean up spilled feed and silage leachate to avoid infiltration and runoff contamination.
- Spill prevention and response for fuels and chemicals:
 - Store fuels and lubricants in tanks equipped with secondary containment (bunds or drip trays) on impermeable surfaces; prohibit refueling or oil changes on bare soil.
 - Store chemicals (disinfectants, veterinary drugs) in dedicated, bunded rooms with impermeable flooring.
 - Maintain spill-response kits near storage and handling areas and train workers in their use; record and investigate all spill incidents and corrective actions.
- Carcass management: Apply the carcass management measures already described under Solid Waste; avoid burial on site. Where exceptionally required and approved by the authorities, ensure burial only in designated zones with low-permeability soils, well above groundwater and away from watercourses.
- Engineering of Manure and Wastewater Structures:
 - Liner performance standard: Ensure the manure lagoon (and any associated collection pits/channels where applicable) is constructed with a low-permeability lining system achieving

hydraulic conductivity $\leq 1 \times 10^{-9}$ m/s, using either engineered compacted clay liner and/or a geomembrane-composite system (or equivalent GIIP design) suited to site conditions.

- Implement a liner QA/QC covering material specifications, subgrade preparation, installation procedures, and acceptance criteria.
- Inspection logs and maintenance: Maintain monthly inspection logs to check for cracks, settlement, erosion, seepage indicators (wet spots, staining), animal burrows, damage to inlet/outlet structures, and any abnormal odors. Record findings, corrective actions, and dates, and repair defects immediately.
- **Groundwater and surface-water monitoring:**
 - Monitoring network design: Establish a small monitoring network that includes: (i) one up-gradient/background point (if feasible), and (ii) one to two down-gradient points in the likely groundwater flow direction from manure and wastewater handling areas (lagoon, channels, storage and loading areas). If feasible, install dedicated monitoring wells/piezometers subject to permitting and land access.
 - Baseline monitoring: Establish baseline groundwater quality as early as feasible. Where practicable, conduct two baseline rounds representing seasonal conditions (wet season and dry season).
 - Parameters: Test baseline and routine samples for parameters relevant to manure and wastewater impacts, including at minimum: nitrate, nitrite, ammonia, electrical conductivity, TDS, chloride, sulfate, pH, COD (or TOC where applicable), and microbiological indicators (total coliform and E. coli). Add parameters as required by EQA and based on site conditions (for example phosphorus, sodium, fecal streptococci).
 - Sampling frequency: During the first year of full operation, carry out groundwater sampling semi-annually (wet and dry season). Thereafter, sample annually. Increase frequency following any incident (for example lagoon overtopping, significant spill, observed seepage) or if monitoring indicates deterioration or rising trends. Confirm with the requirements of EQA, change sampling frequency per EQA and national requirements.
 - Operational monitoring and early warning: Maintain routine inspection logs for lagoon freeboard, integrity of liners and concrete structures, signs of seepage or staining, wet spots around manure and wastewater infrastructure, and drainage performance. Maintain records of manure/digestate volumes and land application locations/dates to support traceability and investigation if monitoring results indicate impacts.
 - Thresholds and response measures: Define alert and action thresholds based on Palestinian standards and/or WHO drinking-water guidelines. If thresholds are exceeded or trends indicate deterioration, implement corrective actions, including: (i) inspection and repair of manure and wastewater infrastructure, (ii) review and adjustment of nutrient management and land application practices (rates, timing, buffers), (iii) review of lagoon capacity, freeboard and stormwater segregation, and (iv) additional engineering controls where needed (for example improved containment, additional pre-treatment or operational controls).
 - Quality assurance and reporting: Use a competent laboratory and apply basic QA/QC measures (field notes, chain-of-custody and repeat samples where feasible). Record results in a groundwater monitoring log and include findings and corrective actions in periodic ESMP monitoring reports, with notification to EQA where required.

VI. Surface Runoff and Stormwater

❖ Risks:

- **Runoff from barns, yards and manure-handling areas:** Intense rainfall on roofs, open yards, feed and manure-handling areas may generate contaminated runoff carrying suspended solids, nutrients, salts, pathogens and organic matter to adjacent land and wadis if not properly collected and managed.

- Erosion and gully formation: Concentrated surface flows from unlined channels, steep tracks or discharge points may cause localized erosion, gully formation and damage to access roads, embankments and neighboring plots.
- Flooding of animal housing and infrastructure: Inadequate storm water drainage capacity or blocked drains can lead to ponding and flooding in barns, access roads, manure storage areas and around the lagoon, affecting animal welfare, structural integrity and farm operations.
- Overloading of manure lagoon and wastewater systems: Heavy rainfall entering manure storage structures and wastewater channels may reduce effective storage capacity, dilute manure and increase the risk of lagoon overtopping and uncontrolled discharge.
- Uncontrolled discharge to wadis and downstream receptors: If storm water is discharged without adequate control or buffering, contaminated flows may enter natural drainage lines and contribute to cumulative pollution in the Hebron–Besor–Wadi Gaza system.

❖ **Significance:**

The spatial influence is substantial (3), due to the potential to affect downstream receptors; the duration is long-term over the O&M phase (3); the intensity of foreseen negative impacts is moderate (2); and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate to Substantial**.

❖ **Mitigation Measures:**

- Storm water management plan and drainage layout:
 - Maintain and update a farm storm water and drainage plan showing roofs, paved and unpaved areas, channels, drains, collection pits, lagoon inlets and emergency spillways.
 - Design and maintain the system to separate clean storm water from contaminated runoff as far as practicable.
- Separation of clean and contaminated flows:
 - Collect roof water from barns and sheds via gutters and downpipes and divert it away from manure-handling areas, lagoon embankments and carcass storage zones.
 - Grade yards and traffic areas so that runoff from manure, feed and silage areas drains to the manure / wastewater system, not to open ground or wadis.
- Sizing and protection of drainage structures:
 - Ensure drains, channels, culverts and collection pits are sized for local design storm events and kept free of blockages.
 - Line key channels or use hard standing where high velocities may cause erosion; stabilize outlet points with rip-rap or vegetated buffers.
- Lagoon and storage protection:
 - Prevent direct inflow of storm water to the lagoon and manure storage structures by using diversion berms or channels and by maintaining adequate freeboard.
 - Inspect lagoon embankments before and after major storms and repair any erosion, scouring or signs of overtopping.
- Erosion and sediment control:
 - Maintain vegetation cover on non-operational slopes, embankments and buffer strips; reseed bare areas promptly.
 - Where runoff discharge is unavoidable, route it through vegetated swales, filter strips or small sediment traps before it reaches natural drainage lines.
- Housekeeping and maintenance:
 - Keep drains, gutters, channels and grates free of manure, feed residues and debris through routine cleaning and preventive maintenance.

- Record drainage inspections and any corrective actions taken, particularly after heavy rainfall events.

VII. Hazardous Materials and Waste

❖ Risks:

- Use and storage of hazardous materials: Hazardous materials are used throughout the production cycle and includes disinfecting agents, antibiotics and other medications, vaccination and hormonal products. Potential risks are associated with the use and storage of hazardous substances.
- Generation and Disposal of Hazardous Waste: Risks related to the generation of hazardous waste such as antibiotic and hormonal products containers and residues, and improper disposal of hazardous waste.
- Veterinary sharps and clinical waste: Used needles, syringes, scalpels and other sharp instruments generated during treatment and vaccination of cattle may cause needle-stick injuries, infection risks, and unsafe reuse or open dumping if not properly collected and disposed of.
- Expired or unused pharmaceuticals and chemicals: Out-of-date or unused antibiotics, hormones, vaccines, disinfectants and other agro-chemicals may be discarded to drains, manure systems or open areas, contributing to antimicrobial resistance and contamination of soil, water and manure/digestate streams if not managed as hazardous waste.

❖ Significance:

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Hazardous materials storage and handling: Maintain all disinfectants, antibiotics, vaccines, hormones and other chemicals in a dedicated, lockable store with restricted access. Store products in their original, clearly labelled containers, on shelves or spill-containing trays, away from feed and out of direct sunlight, and keep Safety Data Sheets (SDS) available for all hazardous substances.
- Inventory control and record keeping: Maintain and periodically update an inventory and logbook for all veterinary medicines and chemicals, recording product name, batch, quantity received, person in charge, and expiry dates. Apply a “first-expire, first-out” system to minimize accumulation of expired products and avoid over-purchasing.
- Worker protection and procedures: Provide workers handling hazardous materials with adequate PPE (gloves, goggles, masks or respirators as needed, safety shoes and protective clothing) and written procedures covering safe preparation of doses, injection techniques, dilution of disinfectants and emergency actions in case of accidental exposure or spills.
- Veterinary sharps and clinical waste: Collect used needles, syringes, blades and other sharps immediately after use in rigid, puncture-resistant, clearly labelled sharps containers located at treatment areas. Prohibit recapping or reuse of needles. Arrange for sharps and other veterinary clinical waste to be treated and disposed of through licensed medical waste or hazardous waste service providers, in coordination with MOA, MoH and EQA, and keep disposal records.
- Company procedures and training: Maintain and periodically update the company procedures for procurement, storage and use of veterinary medicines and chemicals, and for management of hazardous waste and pollution sources. Provide regular training and toolbox talks for farm workers and veterinary staff on these procedures, SDS information, spill response, sharps handling and correct segregation of hazardous waste, and document attendance and topics covered.

- **Hazardous waste segregation and storage:** Maintain the storage of hazardous waste in dedicated, clearly labelled containers separate from general solid waste and manure streams. Use secondary containment (bunds or trays) for liquid wastes to prevent leaks and spills, and keep storage areas covered and ventilated.
- **Hazardous Waste Disposal:** Ensure and maintain the disposal of hazardous waste in coordination with MoH and EQA. In line with the Palestinian hazardous waste management system No. 6 of 2021. Use licensed haulers for transporting hazardous waste to ensure safe and compliant transportation. Treat all expired, damaged or unused antibiotics, hormones, vaccines and disinfectants as hazardous waste. Prohibit disposal of these materials into drains, manure channels, open ground or general waste bins.

VIII. Labor Rights and Working Conditions:

❖ Risks:

- **Noncompliance To Labor Rights:** The Palestinian Labor Law (PLL) clearly defines working hours, leaves, wages, and benefits as well as Act No.4 of 2021 which is the latest decree setting the minimum wage limits in the Palestinian Territories. Nevertheless, the PLL and its suit of supporting decrees face enforcement challenges.
- **Insurance:** a potential risk is that workers are not covered by valid injury insurance policy in accordance with the PLL.
- **Child Labor:** Livestock activities are classified as hazardous work and children under the age of 18 are not permitted to perform such work under the PLL.
- **Grievances:** concerns, complaints, and grievances are expected to arise among workers. Such grievances are relevant to their labor rights and working conditions. The lack of an effective and transparent mechanism to voice such grievances and guarantee their review for resolution is an associated risk. Additional risks entailed include coercion and risks of retribution towards workers when they voice their grievances.
- **Workers' E&S Capacity:** The lack of knowledge among workers of their duties, responsibilities, rights, and ability to report grievances can lead to issues unresolved and workers with poor knowledge of the mitigation measures that protect their labor rights, environment, and workplace.
- **Medical Examination of Workers:** In line with Cabinet Decisions No.22 & 24 of 2003, workers must undergo an initial medical examination and regular follow-up medical examinations should be conducted.

❖ Significance:

The spatial influence is moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- **Clear Employment Contracts:** Ensure that every worker, regardless of their position, is provided with a clear and comprehensive employment contract that outlines their rights, duties, compensation, working hours, and other essential terms in line with the PLL.
- **Code of Conduct:** Implement and adopt the Code of Conduct (CoC). The CoC shall contain a demarcation of labor rights, responsibilities and GBV related measures that are further discussed below. The code of conduct to be used for this project is the one recommended by the F4JII, available in [Annex I](#).
- **Prohibition of Child:** Explicitly prohibit child labor and forced labor in company policies and internal procedures. Maintain a workers' register with names, ID numbers and dates of birth and verify that no worker under 18 is employed in farm operations.

- **Training:** The Project Workers shall receive an E&S orientation training prior to the commencement of the operations phase, covering the CoC, GM, OHS, ERP, Waste management, and the ESMP overall.
- **Adherence to Minimum Wage Act:** regular monitoring shall be conducted to review the wages being paid to ensure they meet the minimum wage requirements set by the Palestinian Authority.
- **Mandatory insurance:** All workers must be provided with contractual documentation and are to be covered by a valid injury insurance policy.
- **Workers' Grievance Mechanism (GM):** A workers' Grievance Mechanism shall be established with anonymity and GBV referral pathways in accordance with [Annex III](#). Uptake channels shall be disseminated to workers and should be effective and accessible.
- **Recruitment and Employment:** Recruitment shall be conducted in a transparent manner including issuing announcements for vacancies, reviewing applications based on merit and qualifications, and documenting scores provided for each applicant for later review shall audits be required or if grievances were received through the company's GM.
- **Conduct Medical Examinations for Workers:** In line with Cabinet Decisions No.22 & 24 of 2003, with follow-up medical examinations.

IX. Occupational Health and Safety

❖ Risks:

- **Physical hazards:** workers are at risk of the incidence of bites and kicks during activities that require contact with the livestock. In addition, injuries associated with vehicle operation and repair, and slip and trip hazards from accumulation of animal waste on farm floor may occur, as well as machinery injuries, ergonomics, manual handling, and thermal stress and weather exposure.
- **Chemical hazards:** use of chemical materials could expose workers health hazards related to the inhalation and dermal contact with such chemicals.
- **Biological hazards:** Workers may be exposed to disease-agents such as bacteria, fungi, mites, and viruses transmitted from live animals, manure, animal carcasses, and parasites. Workers may also be exposed to skin sensitizers such as animal proteins from urine that can cause an allergic reaction. Because of the use of antibiotics in feed, antibiotic-resistant microorganisms might develop in the gastrointestinal tract of animals. Resistant bacteria can potentially infect humans on or in the vicinity of the farm.
- **Exposure to dust:** workers are at risk of exposure to dust when handling of feed containing particles from fungi and bacteria, and from animal waste.

❖ Significance:

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- **OHS Plan:** Adhere to the expansion project's OHS plan as available in [Annex II](#). And in cases of emergencies implement the ERP that is available within it.
- **OHS Capacity and Training:** Appoint additional OHS Supervisors as needed per Law No.3 of 2019 that is based on employee's numbers, establish OHS committees in line with the ESA, and provide annual training refreshers on OHS and onboarding OHS trainings, as well as toolbox OHS talks.
- **Livestock handling and facility design:** Instruct workers in correct livestock care and low-stress animal handling techniques to reduce the incidence of bites and kicks. Maintain and use appropriate handling facilities (races, chutes, gates) and non-slip floor surfaces.

- **Vehicle and machinery safety:** Limit operation of tractors, loaders, feed mixers and other mobile equipment to trained and authorized workers only. Keep guards on all moving parts, apply clear internal traffic routes and speed limits inside the farm, and perform regular maintenance and pre-use checks.
- **Manual handling, ergonomics, and thermal stress:** Provide training on safe lifting and manual handling techniques, use trolleys and other mechanical aids for heavy loads where feasible, and rotate tasks to reduce repetitive strain. Provide appropriate work clothing and PPE for hot and cold conditions, shaded rest areas and drinking water, and adapt work schedules during periods of extreme heat or adverse weather.
- **Chemical hazard control:** Prevent and control chemical exposures by keeping an up-to-date inventory of chemicals, ensuring all containers are clearly labelled, and storing disinfectants, detergents, pesticides, and other hazardous products in a locked, ventilated area. Train workers in the safe use of these materials in line with Material Safety Data Sheets (MSDSs), including mixing, application, and disposal, and ensure appropriate PPE (gloves, goggles, masks, aprons, safety shoes) is available and used. Prohibit eating, drinking, and smoking in chemical handling and animal treatment areas.
- **Biological hazard control:** Inform workers of potential risks of exposure to biological agents and provide training on zoonoses recognition and prevention. Enforce strict personal hygiene measures, including hand-washing facilities at strategic points, changing / cleaning of work clothes and boots, and safe handling of manure and carcasses. Provide appropriate PPE (gloves, overalls, boots, eye and respiratory protection as needed) to reduce contact with materials potentially containing pathogens and ensure that workers who develop allergic reactions or medically confirmed sensitivities are reassigned away from high-exposure tasks.
- **Dust exposure prevention:** Reduce dust generation when handling feed and animal waste by keeping feed storage covered, minimizing free-fall distances during loading/unloading, and maintaining good barn ventilation. Provide workers with suitable respiratory protective equipment when working in dusty areas or during tasks such as feed mixing and dry manure handling.
- **First aid and medical arrangements:** Provide first aid kits on site in adequate numbers relative to workers, ensure they are always accessible, regularly checked and replenished, and designate trained first-aiders per shift. Coordinate with and locate the nearest medical facility / hospital to the site and circulate emergency contact numbers and procedures for first-aid response to all workers.

X. Community Health and Safety

❖ Risks:

- **Potential spread of animal diseases:** Risk of zoonotic diseases spreading to neighboring communities due to improper manure management, inadequate treatment or disposal of dead animals, vectors (flies, rodents, stray dogs), or uncontrolled public access to farm areas.
- **Food safety and antimicrobial resistance:** Routine or improper treatment of animals with antibiotics may result in antibiotic-resistant microorganisms in the intestinal tract of treated animals and in manure. Failure to respect withdrawal periods may also lead to antibiotic residues in raw milk or meat that could affect consumers.
- **Odor, dust, and vectors affecting neighboring receptors:** Off-site nuisance from odors, dust, flies and other vectors associated with manure storage and spreading, feed handling and carcass management, especially under unfavorable wind or weather conditions, potentially leading to complaints and reduced quality of life for nearby residents and businesses.
- **Inadequate Stakeholder Engagement:** Potential risk arising from insufficient or discontinued communication and ineffective stakeholder engagement.

❖ **Significance:**

The spatial influence is Moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- **Disease control and biosecurity:** Implement the manure, carcass and solid waste management measures described in the relevant subsections of this ESIA, as these directly reduce the risk of disease transmission to the community. Maintain a veterinary health program including regular vaccination, deworming and prompt isolation and treatment of sick animals, with veterinary supervision. Restrict public access to barns, manure storage areas and carcass holding areas, and maintain fencing and controlled gates around the farm. Avoid application of solid or liquid manure directly onto grazing areas or edible crops.
- **Food safety and prudent use of antibiotics:** Use veterinary medicines, including antibiotics and hormones, only under the prescription and supervision of a licensed veterinarian and in line with national regulations. Maintain detailed records of all treatments, including product, dose, date and treated animals. Strictly respect withdrawal periods for milk and meat before products enter the food chain and implement routine quality control testing in line with Palestinian food safety requirements. Prohibit the use of any substances banned for food-producing animals by national regulations or recognized international standards.
- **Odor, dust, and vector management:** Operate the manure, lagoon and biogas systems in a manner that minimizes odor and dust, including regular removal of manure from barns, maintaining lagoon freeboard, and avoiding agitation or spreading of manure during periods of high winds or when receptors are most sensitive. Implement vector control measures such as good housekeeping, removal of standing water, covered storage of waste and feed, and, where needed, targeted pest control under veterinary guidance. Maintain internal roads and, where not fully paved, apply appropriate dust suppression during dry periods, especially when heavy traffic is expected.
- **Stakeholder engagement and grievance management:** Maintain regular communication with neighboring communities, local authorities, and other interested stakeholders throughout the O&M phase, including information on farm operations that may affect them (for example manure spreading periods, traffic patterns, odor control measures). Disclose key E&S information and mitigation measures in Arabic through accessible channels. Ensure that the company's grievance mechanism is available to external stakeholders, with clear uptake channels, timely response, and documentation of complaints and actions taken.

XI. Biodiversity and Ecosystem Services

❖ **Risks:**

- **Degradation of downstream habitats:** If manure, digestate or contaminated runoff reach nearby wadis or drainage lines, they may cause eutrophication, algal growth, changes in vegetation and loss of habitat quality for aquatic and riparian fauna.
- **Incremental land-use intensification and vegetation removal:** Further intensification of livestock operations, if not properly managed, may lead to loss of remaining trees, hedgerows or field margins that provide habitat and corridors for birds, small mammals, and pollinators.
- **Disturbance from noise, traffic, and lighting:** Increased traffic, machinery operation and night-time lighting may disturb common wildlife and reduce use of the area by some species.
- **Non-target impacts of pest and vector control:** Use of rodenticides, insecticides, or other pest-control agents to manage vectors (flies, rodents, stray dogs) may inadvertently affect non-target wildlife if poorly controlled or applied in excess.

❖ **Significance:**

The spatial influence is moderate (2) given the linkage to wadis and surrounding agricultural land; the duration is long-term over the O&M phase (3); the intensity of foreseen negative impacts is moderate (2) in a landscape that is already largely transformed; and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Limit vegetation clearance and enhance habitat features:
 - Restrict any further land clearing to the minimum area needed for safe operation; maintain existing trees, hedgerows, and shelterbelts as far as possible.
 - Where feasible, plant additional native trees and shrubs along farm boundaries and around the lagoon / biogas facility to provide visual screening and habitat for birds and beneficial insects.
- Control pollution pathways affecting habitats:
 - Implement the soil, groundwater and manure-management measures described above to avoid discharge of nutrients, organic matter and pathogens to wadis and natural drainage lines.
 - Maintain buffer strips of vegetation along any natural drainage or terraces where runoff may occur.
- Wildlife-friendly lighting and operations:
 - Use downward-directed, shielded exterior lighting with timers or motion sensors to avoid unnecessary night-time illumination, particularly towards open fields and wadis.
 - Avoid high-noise activities at night where feasible.
- Integrated pest and vector management (IPM):
 - Prioritize housekeeping, waste minimization and physical measures (screens, traps, fencing) to control vectors before resorting to chemical pesticides.
 - When rodenticides or insecticides are necessary, select products with lower persistence and toxicity, apply them in a targeted manner under the guidance of veterinary or pest-control professionals, and prevent access by non-target animals (e.g. using covered bait stations).
 - Keep records of the type and quantities of pesticides used, locations and any observed non-target impacts.
- Monitoring and stakeholder feedback:
 - Include biodiversity-related observations (e.g. visible eutrophication in wadis, dead fish or birds, unusual vegetation die-off) in periodic site walk-throughs and inspections.
 - Record and respond to any biodiversity-related concerns or complaints raised by neighboring land users through the project grievance mechanism.

II. ARTISANAL DAIRY FACTORY SUBPROJECT

As described in [Section 2.3.3](#), the artisanal dairy factory is a new production facility within Al Thahreyeh expansion, dedicated to “artisanal / Baladi” and other traditional dairy products that are not produced on the main industrial lines. It will receive and test raw milk and then process it through dedicated reception, cooling and pasteurization units into products such as labneh, fermented milks, a range of white cheeses and jammed, using batch-style processes that preserve traditional characteristics while meeting modern food safety standards. The factory is designed mainly to supply higher-value specialty products for the domestic market, using integrated utilities including a CIP system, chillers, boilers and water treatment, and drawing electricity from the grid, the biogas plant and the rooftop solar PV system described in this ESIA.

The artisanal dairy factory will be located on already-developed industrial land within the expansion area and does not involve any additional land acquisition, but its construction and operation introduce specific environmental and social risks and impacts. These relate in particular to energy and water demand for milk

reception, thermal treatment and cooling; generation and management of high-strength dairy effluents and cleaning-in-place (CIP) wastewater; handling and storage of chemicals and boiler fuel; management of whey, sludge and other solid by-products; noise and heat from pasteurizers, compressors and refrigeration units; occupational health and safety and food-safety risks for workers; and traffic and community health and safety issues associated with milk tankers and distribution vehicles using the shared access roads. These risks and potential impacts are assessed below using the methodology outlined in Section 7.1.

12.1.1.1. SUBPROJECT ANTICIPATED POSITIVE IMPACTS

- **Economic impacts**
 - o Additional employment opportunities, directly through the company (production workers, technicians, quality control staff, maintenance, warehousing and logistics) and indirectly through the company's supply and marketing chains.
 - o Adding value to raw milk produced by Al Jebrini's own farms and external suppliers, helping to stabilize demand and prices for local dairy farmers and supporting the development of higher-value product lines.
 - o Meeting a larger share of local market demand for locally processed dairy products, improving the company's resilience to border closures, import disruptions and price volatility for processed products from outside the West Bank.
 - o Strengthening linkages across the dairy value chain, including input suppliers, transporters, packaging providers and retailers, in a mutually beneficial way.
- **Social impacts**
 - o Enhancing local employment opportunities for women and youth, particularly in processing, packaging, quality control and administrative functions, in line with the company's commitment to inclusive hiring.
 - o Supporting the continued availability of safe, locally produced traditional dairy products (such as labneh, cheese and other artisanal items), reinforcing cultural heritage while contributing to local food security and consumer confidence in product quality.

12.1.1.2. FINISHING WORKS AND INSTALLATION PHASE

The E&S risks, potential impacts and mitigation measures during the finishing works and installation phase of the artisanal dairy factory are similar in nature and magnitude to those identified for the plastic factory ([section 7.3.3.2](#)), as they relate primarily to generic construction and installation activities (minor civil works, equipment installation, use of paints and solvents, temporary solid waste generation, OHS and labor issues). Accordingly, the risks and mitigation measures described equally to this subproject for this phase, and should be referred to for the purposes of impact assessment and ESMP implementation.

12.1.1.3. OPERATION AND MAINTENANCE PHASE

I. Impacts on Air Quality:

❖ Risks:

- **Odor emissions from dairy processing and wastewater handling:** Odors may be generated from receiving and handling raw milk and cream, cooking and mixing operations, storage of by-products (for example whey), floor drains and fat traps, and any on-site wastewater collection or pre-treatment units. If housekeeping and waste / wastewater management are not properly maintained, these odors can cause nuisance or discomfort to workers and, in a worst-case scenario, near the plant boundary.

- Exhaust gases from boilers and other thermal utilities: Combustion of fuel in small boilers, hot water generators, steam producers and any standby generators emits exhaust gases (such as NO_x, CO and CO₂), which may locally deteriorate air quality around stacks and service areas.
- Emissions from cleaning and sanitation chemicals: Intensive cleaning and disinfection of process areas and equipment (including CIP systems), using detergents, disinfectants and sanitizers, can release vapors and aerosols (including VOCs and oxidizing agents) that may irritate the respiratory system and eyes and contribute to poor indoor air quality if not adequately ventilated.
- Ventilation and refrigeration system performance: Inefficient or poorly maintained HVAC and refrigeration systems may fail to control humidity, heat and odors inside production areas, and leaks of refrigerants could pose localized air-quality and occupational exposure risks.
- Vehicle exhaust and internal logistics: The regular movement of milk tankers, refrigerated distribution trucks, and forklifts or other internal transport vehicles generates exhaust emissions (for example NO_x, CO and particulate matter) in loading bays, internal roads and access routes, with potential exposure of workers and, to a lesser extent, nearby receptors.

❖ **Significance:**

The spatial influence is Low (1), the duration is within works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Safe Materials for Maintenance: Use of low-VOC solvents and adhesives in maintenance work, executed in well-ventilated spaces or with specialized exhaust systems to capture emissions.
- Odor emissions from artisanal dairy processing operations:
 - Maintain strict housekeeping and hygiene standards in all production areas, including prompt cleaning of milk and product spills, regular washing and sanitizing of floors, drains, equipment and work surfaces.
 - Implement and regularly update a documented sanitation and CIP program so that residues of milk, whey, brine and other organic materials are minimized on equipment and within drainage systems.
 - Provide adequate general and local exhaust ventilation in production, cooking and packaging areas, including extraction hoods over vats, pasteurizers, open kettles and filling lines, with discharge points located away from air intakes and workstations.
 - Store organic by-products and solid wastes (for example whey, curd fines, off-spec products) in closed, clearly labelled containers or covered bins in cooled or shaded areas and remove them frequently to prevent odor build-up.
- Refrigeration and cold-storage systems:
 - Select and use refrigerants with low ozone-depleting and low global-warming potential, in line with national regulations, and phase out any remaining CFC/HCFC-based systems.
 - Establish regular inspection for refrigeration piping, compressors, valves and fittings; repair leaks without delay and keep records of refrigerant charging and recovery.
 - Ensure refrigeration machinery rooms are mechanically ventilated and, where required by design, equipped with appropriate gas-detection and alarm systems, with clear procedures for emergency response in case of leaks.
- Indoor air quality, steam and humidity in production areas:
 - Design and operate HVAC and make-up air systems to provide sufficient fresh-air exchange, maintain appropriate temperature and humidity levels, and prevent condensation on ceilings, walls, and equipment.

- Provide local exhaust ventilation for high steam-release operations (for example pasteurization, cooking, hot-water washing) and, as far as practicable, separate hot/wet areas from cold/dry and packaging areas.
- Implement a preventive maintenance schedule for air-handling units, fans, filters and ducting, including regular cleaning and replacement of filters, and keep a ventilation maintenance log.
- Vehicle exhaust emissions from milk collection and product distribution:
 - Implement a preventive maintenance program for all trucks and refrigerated vans, including engine tuning, exhaust and emission-control systems, tire pressure and refrigeration units.
 - Optimize route planning, loading schedules and delivery runs to reduce unnecessary trips and empty returns, and prohibit prolonged idling of vehicles in loading bays and yard areas.
- Emissions from maintenance and repair activities (VOCs, dust and particulates):
 - Give preference to low-VOC paints, solvents, lubricants and adhesives where technically feasible, and avoid use of high-volatility products when alternatives exist.
 - Carry out painting, solvent use, grinding, cutting and similar maintenance activities in well-ventilated areas or outdoors where practicable, and use local exhaust or portable extraction units when such work must be done indoors.
 - Provide maintenance staff with appropriate PPE (for example gloves, eye and face protection, and respiratory protection where indicated in the SDS) and training on safe handling, storage and disposal of chemicals.

II. Noise

❖ Risks:

- High noise levels from operations: Continuous operation of pasteurizers, homogenizers, pumps, refrigeration units, compressors and packaging lines may generate elevated noise levels in production areas. If not properly controlled, these may exceed national and GIIIP occupational noise exposure limits and could also be perceptible at the site boundary, although nearby community receptors are limited.
- Production line noise peaks: Compressed-air systems, CIP cycles, bottle and crate handling, metal racks and trolleys, and occasional steam release can result in intermittent high noise peaks and vibration, increasing the risk of hearing damage and communication difficulties for workers.
- Vehicular noise: The movement of milk collection tankers, delivery trucks, forklifts and other internal transport vehicles may generate noise, particularly if vehicles are unmaintained, overloaded or operated at inappropriate speeds within the yard and loading areas.

❖ Significance:

The spatial influence is Moderate (2), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Noise Level Management: Implement administrative and engineering controls to reduce noise at the source within the factory. This includes routine maintenance of current machinery to prevent excessive noise and the installation of noise dampening materials around high-noise areas.
- Noise Level Optimization: Ensure all machinery, including the production line, is fitted with noise-dampening materials and silencers where feasible. Regular maintenance should be performed to reduce noise emissions from machinery. Locate stationary high-noise equipment away from offices, control rooms and rest areas and restrict access of non-essential staff to high-noise zones.

- Worker Protection: Provide personal protective equipment (PPE), such as earplugs or earmuffs, to workers in high-noise areas and enforce usage protocols in line with MoL instructions No. of 2005.
- Monitoring And Training: Conduct noise level monitoring, weekly noise measurements for the first 3 months, shifting to monthly afterward if within permissible limits, or as directed by EQA and MoL. and provide training for workers on the risks of noise exposure and the importance of hearing conservation practices.
- Adherence to National Noise Regulations: The factory shall adhere to the Palestinian Standard on Ambient Noise Levels (PS 840- 2005).
- Use Optimization: Optimize the use of machinery that generate noise (e.g., turn off when idle).
- Maintenance: Continuous maintenance of vehicles and equipment in accordance with the manufacturer's recommendations.
- Vehicular Movements: Limit the movement of vehicles to daytime only. Avoid roads that are adjacent to Noise Sensitive Receptors through logistics planning.

III. Solid Waste

❖ Risks:

- Organic process waste and non-conforming products: Artisanal dairy processing will generate organic solid waste such as product losses from spillages, curd fines, grid and filter residues, non-conforming or off-spec batches, and small quantities of cheese trimmings and other by-products. If not promptly collected, stored and removed under hygienic conditions, these can cause odors and attract pests.
- Spoilage, returns and rejected materials: The subproject may generate spoiled or expired finished products, returned products from the market, and rejected raw materials or ingredients that do not meet quality specifications. If these are not managed separately from routine waste and handled under appropriate hygienic controls, they may pose microbiological risks and increase the volume of organic solid waste requiring disposal.
- Packaging and ancillary solid waste: Operations will generate packaging waste (for example cardboard boxes, plastic films and liners, ripening bags, labels), as well as pallets, damaged containers and maintenance waste. Poor storage or irregular collection of these materials may lead to littering, visual impacts and increased fire risk in storage and yard areas.
- Segregation and management of process versus municipal waste: The company is expected to segregate process waste (organic solids and non-conforming products, packaging materials) from municipal / domestic waste generated in offices and staff facilities. If segregation is not consistently applied, different waste streams may be mixed, reducing opportunities for reuse or recycling and increasing the likelihood that recyclable materials or organic waste are disposed of as mixed solid waste or sent to uncontrolled dumpsites.
- Waste storage and collection practices: Inadequate provision of covered, clearly labeled containers and delays in removing waste from production and storage areas may result in the accumulation of mixed organic and packaging waste, with associated risks of odors, attraction of vermin and stray animals, and nuisance for workers.

❖ Significance:

The spatial influence is Moderate (2), the duration is through to works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Solid waste management planning and hierarchy: Prepare and implement a solid waste management procedure for the artisanal dairy factory that follows the waste hierarchy (prevention, reduction, reuse, recycling, safe disposal) and is integrated with the factory's food safety and hygiene systems (for example GMP / HACCP).
- Management of process organic waste and by-products (whey, curd fines, sludge, filter residues):
 - Minimize generation of organic waste through good process control, accurate dosing, and careful handling of raw materials and product.
 - Collect organic process waste in closed, clearly labelled, leak-proof containers or covered bins; store in cooled or shaded areas, separate from production and traffic routes, and remove at least daily, with increased frequency during hot weather to prevent odors and attraction of pests.
 - Prohibit disposal of solid organic waste into surface drains or the external environment; dispose of through licensed service providers or other methods approved by the competent authorities.
- Spoiled, expired and returned products:
 - Develop and apply procedures, in line with Ministry of Health and food-safety requirements, for segregation, recording, secure storage and final disposal of spoiled, expired or returned products and rejected raw materials.
 - Continuous coordination should be ensured on the requirements for the disposal of spoiled or returned products, including the potential need for new locked containers, and other MoH requirements.
 - Arrange for destruction or disposal only through MoH, and maintain records of quantities, dates and means of disposal.
- Segregation of waste streams and packaging materials:
 - Provide clearly labelled and, where useful, color-coded containers for the main waste streams: organic process waste, recyclable packaging (cartons, plastics, metals), general municipal waste, and any hazardous waste (for example waste oils, chemical containers, fluorescent lamps).
 - Place bins at the main points of waste generation (production halls, packaging lines, warehouse, offices) and train workers and cleaners on correct segregation practices.
 - Establish, where feasible, contracts with licensed recyclers for clean cardboard, plastic film and other recyclable packaging, and keep records of quantities sent for recycling.
- On-site storage, housekeeping and pest control:
 - Maintain a designated central waste storage area that is paved, well drained, easy to clean, and protected from rain and wind to avoid litter, odors and leachate.
 - Implement daily housekeeping rounds to empty internal bins into the central storage area, clean up any spilled waste, and check the condition and cleanliness of containers.
 - Keep all waste containers closed when not in use and integrate waste storage practices with the facility pest management program to avoid attracting insects, birds and rodents.
- Off-site transport and final disposal:
 - Maintain written arrangements with Municipality, JSC, and MoH that define container types, collection frequency and approved disposal sites.
 - As far as practicable, verify that collected waste is transported only to authorized disposal facilities, and retain collection receipts or other documentation where available.
- Training, awareness and record-keeping:
 - Provide regular training to production workers, warehouse staff and cleaners on waste minimization, segregation, food-safety implications of poor waste handling, use of bins and emergency response in case of spills.

IV. Hazardous Material and Waste

❖ Risks:

- Use and storage of cleaning and disinfection chemicals: Regular use of concentrated detergents, caustic and acidic CIP solutions, sanitizers and other cleaning agents in production, CIP and utility areas may pose risks of skin and eye burns, respiratory irritation, and chemical incompatibilities if products are not properly labelled, stored, handled or dosed.
- Chemicals for utilities and maintenance: Use of refrigerants, boiler and water treatment chemicals, lubricants, fuels, and small quantities of maintenance chemicals (for example paints, solvents and adhesives) may create risks of worker exposure, corrosion, fire or toxic releases if containers are damaged or poorly maintained.
- Generation of hazardous waste: Operation and maintenance activities will generate hazardous waste streams such as used oils and lubricants, oily rags, contaminated PPE, spent filters and cartridges, obsolete or off-spec chemicals, and chemically contaminated packaging, which can pose risks to workers and the environment if not segregated and disposed of through authorized channels.
- Spills and leaks: Spills or leaks of cleaning chemicals, lubricants, fuels from storage areas, dosing systems, piping or equipment may result in acute exposure of workers, corrosion of equipment, and contamination of floors, drains, on-site wastewater systems and, if not contained, soil or off-site receptors.
- Improper management of empty containers and maintenance waste: Empty drums, IBCs and smaller containers, as well as replaced parts and spent filters that still contain residues, may be left uncapped or stored in unsuitable locations, increasing risks of accidental releases, incompatible mixing and unsafe re-use of containers.

❖ Significance:

The spatial influence is Moderate (2), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is low (1). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- Hazardous materials inventory, labeling and SDS management: Maintain an up-to-date register of all hazardous materials used on site (detergents, caustic and acidic CIP solutions, sanitizers, lubricants, refrigerants, boiler and water-treatment chemicals, paints, solvents and adhesives). Ensure that all containers are clearly labelled in Arabic and English with product name, main hazards and handling instructions, and that Safety Data Sheets (SDS) are available at points of use and in the chemical storage areas. Provide induction and periodic training to all relevant workers on chemical hazards, SDS use and safe handling procedures, in line with ESS3 requirements on chemicals and hazardous materials.
- Storage and segregation of chemicals: Store hazardous chemicals only in designated, ventilated storage rooms or cabinets with impermeable floors, secondary containment (bunds or trays) and suitable shelving. Segregate incompatible substances (for example acids and alkalis, oxidizers and organics, chlorine-based products and acids) and store flammables away from ignition sources. Keep storage areas locked and accessible only to trained personnel, with clear warning signs and emergency contact numbers posted at the entrance.
- Safe handling, dosing and worker protection: Develop and implement written procedures for the safe preparation, dosing and transfer of chemicals (including CIP solutions), specifying required PPE, dilution steps and emergency actions. Provide appropriate PPE free of charge such as chemical-resistant gloves and aprons, eye and face protection and respiratory protection were indicated in SDS, and enforce proper use and replacement. Install eye-wash stations and

emergency showers near main chemical use and storage areas and maintain them in ready-to-use condition.

- **Spill prevention and response:** Equip all chemical storage and main use areas with spill kits and absorbent materials suitable for the substances present. Train workers on immediate spill response, including stopping the source where safe to do so, containing the spill, protecting drains, using appropriate PPE and notifying supervisors. Prohibit hosing down spills into floor drains. Integrate chemical spill scenarios into the facility Emergency Response Plan and incident reporting system.
- **Management of hazardous waste and residues:** Classify and segregate hazardous waste streams such as used oils and lubricants, oily rags and absorbents, contaminated PPE, spent filters and cartridges, obsolete chemicals and chemically contaminated packaging. Collect each stream in closed, clearly labelled containers placed on impermeable surfaces with secondary containment, separate from non-hazardous waste. Maintain a log of quantities generated, stored on site and transferred off site. Ensure storage periods are minimized and, in all cases, comply with national requirements, including the Palestinian Hazardous Waste Management System No. 6 of 2021.
- **Empty containers and maintenance waste:** After ensuring that they are fully drained and, where recommended in the SDS, triple-rinsed, store empty chemical drums, IBCs and smaller containers in a designated, secure area pending removal by an approved handler. Prevent any re-use of containers for food, water or other incompatible materials. Store used filters, replaced parts and other maintenance waste that may contain hazardous residues in sealed, labelled containers and manage them as hazardous waste.
- **Off-site transport and final disposal:** Arrange for collection, transport and final treatment or disposal of hazardous waste only through authorized service providers licensed by the competent authorities (MoH, EQA and, where relevant, the municipality). Obtain and retain manifests, receipts or certificates that specify the quantities, dates and destinations of hazardous waste removed from the site.
- **Training, supervision and continual improvement:** Provide targeted training at least annually to cleaning, production, utilities and maintenance staff on chemical and hazardous waste management, spill response and use of PPE. Supervisors will conduct routine checks on chemical storage areas and use practices, record any non-compliances and ensure timely corrective actions. Review incidents, near misses and hazardous waste records regularly to identify trends and update procedures, training and storage arrangements as needed.
- **PPEs:** Workers shall be provided with full protection PPEs, including gowns, industrial gloves, industrial scale masks, goggles, and other as appropriate according to manufacturer specifications.

V. Wastewater

❖ Risks:

- **High-strength process wastewater:** Effluents from milk reception, pasteurization, cheese and jammed production, CIP cycles and floor washing contain high levels of BOD, COD, fats/oils/grease (FOG), suspended solids, nutrients and salts from brines and detergents. If not adequately treated, these can cause odor, oxygen depletion and eutrophication in receiving environments and may compromise compliance with Palestinian industrial wastewater standards and EQA approval conditions.
- **Overloading of biogas unit and inadequate treatment:** Industrial wastewater is intended to be directed as feed to the existing biogas unit, which was originally designed mainly for manure and farm wastewater. Excess organic loading, hydraulic overloading or shock inputs of CIP chemicals may reduce biogas performance, cause foaming and odors, and result in partially treated effluent or the need to bypass treatment.
- **Inappropriate segregation of streams:** Lack of clear segregation between process wastewater, relatively clean water (e.g. cooling water, condensate), rainwater and sanitary sewage may dilute high-strength

streams, increase volumes requiring treatment, or allow industrial wastewater to enter storm drains or septic systems.

- Uncontrolled management of sludges and screenings: Solids removed from screens, grease traps or balance tanks may be mismanaged, causing odors, vector attraction and secondary pollution.

❖ **Significance:**

The spatial influence is substantial (3), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Substantial**.

❖ **Mitigation Measures:**

- Source reduction in processes and cleaning: Minimize milk and product losses through good housekeeping, preventive maintenance and operator training (e.g. closing valves before changeovers, avoiding overfills, prompt repair of leaks).
- Segregation and collection of wastewater streams:
 - Maintain physically separate networks for: (i) industrial/process wastewater (including CIP), (ii) sanitary sewage, and (iii) stormwater. Clearly mark inspection chambers and manholes.
 - Install coarse screens and grease traps on production drains to remove curd fines, solids and FOG before wastewater enters the collection system or balance tank.
 - Segregate and separately collect high-strength streams (whey and product losses, first rinses) from lower-strength wash waters, to reduce hydraulic load and stabilize treatment performance.
 - Segregate CIP return streams (including alkaline/acid cycles and brine shocks) and discharge them in a controlled manner to equalization with pH control, avoiding shock loading to downstream units.
 - Keep cooling water and condensate in closed circuits where feasible; reuse relatively clean streams for low-risk cleaning tasks (e.g. pre-rinsing, yard washing) through the recovery tank already envisaged, to reduce fresh-water demand.
- On-site wastewater treatment (OWTS):
 - Establish and operate an on-site wastewater treatment unit (OWTS) dedicated to the artisanal dairy factory's operational wastewater as per the ESA and CAP, sized for the expected hydraulic and organic loads and designed to consistently meet applicable Palestinian industrial effluent standards and EQA approval conditions.
 - The on-site system shall, at minimum, include pre-treatment (screening and FOG removal), plus equalization with mixing and pH control, followed by DAF as primary treatment (for FOG and suspended solids removal), then biological treatment (anaerobic and/or aerobic as appropriate) with polishing (clarification/filtration) and disinfection where required based on reuse targets.
 - Treated effluent shall be stored in a dedicated tank and reused, to the extent feasible and subject to EQA approval, for landscaping and gardening/irrigation within the Al Jebrini site, using controlled application methods that avoid ponding, runoff and contact with workers or the public.
 - Maintain separation of reuse lines from potable and process water lines, install basic backflow prevention, and post clear signage (for example "treated wastewater for irrigation only") to prevent misuse.
 - Manage treatment residuals (screenings, grease, sludge) as controlled waste streams under the relevant solid and hazardous waste procedures, and ensure routine O&M by trained personnel, with records kept for inspections and reporting.
- Integration with biogas unit and treatment performance:

- Confirm through engineering design that the biogas unit has adequate hydraulic and organic capacity for the additional dairy effluents, and implement phased loading and monitoring during start-up.
- Install an equalization/balance tank with mixing and pH control upstream of the biogas feed point to smooth out flow and load variations and to prevent shock loads from CIP chemicals and brines.
- Where monitoring shows that biogas treatment alone is insufficient to meet Palestinian industrial effluent standards or EQA conditions, provide and operate appropriate polishing steps (for example aerobic treatment, settling/clarification or filtration) before any discharge or reuse.
- Develop and implement an O&M manual for the integrated wastewater/biogas system, including procedures for start-up, routine operation, upset conditions and emergency shutdowns.
- Effluent quality and standards:
 - The OWTS shall be designed and operated to meet EQA permit conditions and applicable Palestinian requirements, and at minimum achieve the WBG Dairy Processing EHS effluent guideline values for direct discharge (BOD, COD, TSS, oil and grease, TN, TP, pH).
 - Where treated effluent is reused for landscaping/irrigation, reuse will be subject to EQA approval and applicable Palestinian treated wastewater reuse standards (for example PSI standards referenced for treated wastewater reuse in irrigation).
- Monitoring and compliance with EQA approval:
 - Install flow meters on the main industrial wastewater line from the artisanal dairy factory and on the treated effluent from the biogas/associated treatment system, and record readings at least daily.
 - Monitoring in Year 1 (influent and effluent): During the first year of operation, perform monthly laboratory testing of influent and treated effluent for at minimum: BOD, COD, TSS, TN, TP, FOG, pH, and electrical conductivity (EC), plus any additional parameters required by EQA; maintain a monitoring log and investigate any exceedances or upward trends with corrective actions documented.
 - If test results show exceedances or trends toward non-compliance, investigate causes (e.g. increased product losses, CIP changes, biogas performance) and implement corrective actions, documenting all steps taken.
- Commissioning and clearance condition: No reuse (and no discharge, if ever applicable) shall occur until the OWTS is commissioned and demonstrates compliant performance based on the agreed monitoring program, and EQA clearance/approval for the intended reuse/disposal route is obtained.

VI. Surface Runoff and Stormwater

❖ Risks:

- Contamination of storm water by process materials: Rainwater falling on loading bays, outdoor raw-milk reception, chemical storage, waste skips and vehicle circulation areas can mobilize milk residues, whey, oils, detergents, CIP chemicals and sediments and carry them to soil, storm drains or wadis if not controlled.
- Mixing of storm water with process wastewater: Poor separation between process drains and storm water drains may lead to unnecessary loading of the biogas system, reduced performance, or, conversely, discharge of contaminated flows through storm water outlets without treatment.
- Flooding and ponding: Insufficient storm water capacity or blocked drains and roof gutters may result in ponding around building entrances, in internal yards and near access points, increasing slip risks, affecting operations and potentially infiltrating into foundations.

❖ **Significance:**

The spatial influence is moderate (2), the duration is long-term across the O&M phase (3), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Storm water and drainage design:
 - Prepare and maintain a drainage plan for the factory, clearly distinguishing storm water drains from process and sanitary wastewater lines.
 - Ensure roof runoff is collected by gutters and downpipes and discharged away from process areas, chemical storage, and foundations.
- Segregation of streams:
 - Maintain complete physical separation between storm water drainage and process / sanitary wastewater collection.
 - Mark drain inlets (e.g. “storm water only”) and prohibit discharge of process effluents, CIP solutions, chemicals or floor washings into storm drains.
- Control of contaminated runoff:
 - Grade outdoor areas so that runoff from raw-milk reception, loading bays, waste storage and chemical storage flows to contained collection points connected to the biogas system, not to open ground or wadis.
 - Use curbs, sumps or grated trenches at loading bays and waste areas to capture potentially contaminated runoff.
- Flood-risk reduction and maintenance:
 - Size storm water drains, gutters and downpipes for local design storms; check and clean them periodically, and after heavy rains, to prevent blockages.
 - Avoid storing pallets, waste containers or materials on top of drains or in a way that obstructs flow.
- Inspection and record-keeping:
 - Include storm water management in routine E&S inspections (e.g. before rainy season), using a simple checklist covering cleanliness of drains, evidence of standing water, erosion and any visible contamination.
 - Record findings, corrective actions and any complaints related to runoff or storm water in the E&S monitoring log.

VII. Energy, Water, and Utilities Use

❖ **Risks:**

- High water consumption in processes and cleaning: Pasteurization, product preparation, CIP, floor washing and cooling can result in high water use if not efficiently managed, increasing pressure on the farm wells and local water resources.
- High energy demand for heating and cooling: Boilers, pasteurizers, incubators, turbo dryers, chillers, compressors, CIP and refrigeration systems require substantial electricity and thermal energy. Inefficient operation increases operating costs and GHG emissions and may overload the site’s electrical infrastructure.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (3) because of local water scarcity and energy/GHG relevance, and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate to Substantial**.

❖ **Mitigation Measures:**

- **Resource-efficiency planning and monitoring:**
 - Develop a simple resource-efficiency plan for the artisanal dairy factory covering water, electricity and thermal energy, with clear responsibilities and annual targets (e.g. water and energy use per liter of milk processed).
 - Install or confirm the availability of water and energy meters at factory inlet points and, where practical, for major uses (boiler, CIP, chillers, production areas); review consumption trends monthly and investigate significant deviations.
- **Water-use efficiency:**
 - Implement water-saving measures in line with dairy-processing GIIP, including optimized CIP programs, use of high-pressure/low-volume cleaning nozzles, and reuse of relatively clean final-rinse water for pre-rinsing or yard washing through the recovery tank system.
 - Conduct regular leak detection rounds (taps, hoses, pipes, valves, tanks) and promptly repair identified leaks; record findings and corrective actions.
 - Coordinate abstraction from farm wells with overall site water-resource management to ensure withdrawals remain within permitted volumes and do not adversely affect neighboring users.
- **Energy-efficiency measures:**
 - Use high-efficiency motors and pumps for major drives (CIP pumps, chilled-water pumps, compressors, fans), with variable-frequency drives where appropriate to match load to demand.
 - Ensure good thermal insulation of boilers, steam and hot-water lines, pasteurization equipment and hot product tanks; maintain door seals and insulation on refrigeration and cold-storage equipment.
 - Optimize boiler and burner operation (combustion tuning, blowdown control, condensate recovery where feasible) and maintain appropriate setpoints for pasteurization and hot-water systems, avoiding excessive temperatures and run-times.
 - Implement heat-recovery opportunities where practicable (for example using hot water from pasteurization or CIP for pre-heating incoming water).

VIII. Labor Rights and Working Conditions

❖ **Risks:**

- **Non-compliance with national labor legislation and ESS2:** There is a risk that terms and conditions of employment (contracts, working hours, overtime, rest breaks, paid leave, termination practices) for direct and contracted workers are not fully aligned with applicable Palestinian labor laws and the objectives of ESS2, particularly during peak production periods when overtime demands increase.
- **Insurance and social security coverage:** Some workers, including temporary, seasonal or contracted workers, may lack full registration in health and social insurance schemes or may not be adequately covered for work-related injuries and illnesses.
- **Grievances and worker voice:** If the workers' grievance mechanism is not well publicized, trusted and responsive, workers may refrain from reporting concerns related to wages, discrimination, harassment, SEA/SH, OHS incidents or other labor issues, leading to unresolved tensions and a higher likelihood of escalation.
- **Risk of wages below minimum requirements and unfair employment practices:** There is a risk that some workers, especially new hires, young workers, women, seasonal or contracted workers, could receive wages below the applicable minimum wage, experience delays in wage payment, or face unequal treatment in remuneration, promotion and access to benefits.
- **Workers' E&S and labor-rights capacity:** Limited awareness among workers and supervisors of their roles, responsibilities, rights and obligations, including freedom of association, non-discrimination,

anti-harassment and OHS requirements, may result in weak implementation of mitigation measures, unsafe behaviors and under-reporting of grievances.

- **Medical examination and fitness for work:** In line with Cabinet Decisions No. 22 and 24 of 2003, workers are required to undergo initial and periodic medical examinations. If these examinations are not carried out, documented and followed up, fitness-for-work issues or occupational diseases may go undetected, particularly for workers exposed to cold rooms, wet floors, repetitive tasks or night shifts.
- **Quality of welfare facilities and amenities:** Risk that resting areas, canteens, changing rooms, sanitary facilities and drinking water points are insufficient, not segregated by gender where appropriate, or not maintained to acceptable hygiene standards, which can negatively affect workers' well-being and dignity.

❖ **Significance:**

The spatial influence is low (1), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is low (1). Consequently, the risk is therefore rated as **Low**.

❖ **Mitigation Measures:**

- **Fair and lawful employment terms:** Ensure that all direct and contracted workers receive written employment contracts, in Arabic, that clearly describe job title, duties, working hours, overtime arrangements, wages and benefits, probation, leave entitlements and conditions for termination. Contracts will comply with the Palestinian Labor Law and the objectives of ESS2 on working conditions, protection of the workforce and fair treatment.
- **Minimum wage, working hours and benefits:** Maintain procedures to verify that wages (including overtime and allowances) for all categories of workers meet or exceed the applicable minimum wage and are paid regularly and in full. Keep timesheets and payroll records, including overtime, and ensure compliance with legal limits on working hours, rest breaks and weekly days of rest, including for shift and night work.
- **Insurance:** Ensure that all eligible workers, including temporary and seasonal workers, are registered in the applicable health and injury insurance. Maintain up-to-date records of workers' coverage and premium payments, and include verification of coverage in internal audits and during recruitment.
- **Code of Conduct (CoC):** Roll out and enforce a CoC for all categories of workers (including contractors and drivers) that sets out expected standards of behavior, respect for co-workers and community members, zero tolerance for SEA/SH, child labor and forced labor, and compliance with OHS requirements. The CoC to be used is the one recommended under the F4JIII Project ESMF and annexed to this ESIA ([Annex I](#)). Require signing of the CoC on hiring and provide regular refresher briefings.
- **Workers' grievance mechanism (GM) and worker voice:** Maintain and publicize a dedicated workers' GM that is confidential, accessible to all workers (including women, young and contracted workers) and allows anonymous complaints. Provide multiple channels (verbal, written, phone, suggestion boxes) and ensure that grievances are registered, acknowledged, assessed and closed within defined timeframes, with no retaliation. Integrate SEA/SH-sensitive procedures and referral pathways as described in [Annex III](#). Facilitate regular meetings between management and worker representatives to discuss working conditions and follow up on GM trends.
- **Training and awareness on labor rights and E&S responsibilities:** Provide induction and periodic training for all workers and supervisors on the CoC, labor rights and obligations, non-discrimination and harassment, OHS and ERP, GM access, and key ESMP requirements relevant to their tasks.

Keep attendance logs and training materials on file and include targeted sessions for women workers and shift workers as needed.

- Medical examinations and fitness for work: Implement initial medical examinations for all new workers and periodic examinations at least every two years, in line with Cabinet Decisions No. 22 and 24 of 2003 for this type of industry.
- Working conditions and welfare facilities: Provide and maintain adequate welfare and sanitary facilities, including clean gender-segregated toilets and changing rooms, handwashing points, rest and prayer areas, and safe drinking water. Ensure these facilities are accessible for women and persons with disabilities as far as practicable, and that cleaning and maintenance schedules are implemented and documented.
- Recruitment and employment practices: Conduct recruitment in a transparent, documented and merit-based manner, including public vacancy announcements where appropriate, objective selection criteria and documented scoring. Prohibit the use of child labor. Keep personnel files that include proof of age, contracts, job descriptions and records of disciplinary measures, ensuring that any disciplinary action is proportionate, lawful and documented.

IX. Gender-Based Violence:

❖ Risks:

- Sexual Exploitation, Abuse and Harassment (SEA/SH): Women workers and other workers may be exposed to sexual harassment, coercion or other forms of SEA/SH by supervisors, co-workers, or external parties.
- Discrimination and unequal treatment: Female workers may face discriminatory practices in recruitment, job assignment, remuneration, access to training, career progression and allocation of overtime or benefits, including being paid less than male counterparts for equal work or being channeled into lower paid and less secure positions.
- Exclusion from leadership and decision-making: There is a risk that women are under-represented in supervisory, technical and decision-making roles, and that their views are not adequately considered in consultations on working conditions, OHS and facility improvements.
- Under-reporting, retaliation and stigma: Social norms, fear of job loss, retaliation or victim-blaming, and lack of a confidential, trusted grievance mechanism may result in under-reporting of GBV/SEA/SH incidents, leaving survivors without support and allowing perpetrators to continue harmful behavior.

❖ Significance:

The spatial influence is low (1), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence possibility is low (1). Consequently, the risk is therefore rated as **Moderate**.

❖ Mitigation Measures:

- SEA/ SH Responsibility: Designate a senior manager as GBV/SEA/SH focal point, supported by at least one female focal point at factory level.
- Code of Conduct (CoC)
 - Adopt and apply the CoC for all categories of workers (direct, contracted, third party), including explicit prohibitions on SEA/SH, discrimination, harassment, bullying and retaliation, and clear disciplinary sanctions up to and including dismissal.
 - Require all workers to sign the CoC before starting work and re-confirm annually; keep signed copies in personnel files.
- GBV-sensitive workers' grievance mechanism and referral pathways

- Integrate specific GBV and SEA/SH provisions in the workers' GM, with multiple confidential uptake channels (for example sealed boxes, hotline, verbal reporting to trained male and female focal points) that do not require the survivor to confront the alleged perpetrator.
- Establish and disseminate a written, survivor-centered referral pathway for SEA/SH cases, including available local services for health care, psychosocial support, legal aid and protection, in line with World Bank GBV good practice.
- Include explicit guarantees of non-retaliation and confidentiality in the GM procedures and train all supervisors and focal points on their implementation.
- **Capacity building and training**
 - Provide mandatory induction and regular refresher training for all workers, supervisors and managers on CoC provisions, GBV and SEA/SH definitions, unacceptable behaviors, by-stander responsibilities, use of the GM, confidentiality and non-retaliation.
 - Provide dedicated sessions for women workers on their labor rights, equal opportunity provisions, the workers' GM and the SEA/SH referral options inside and outside the company.
- **Gender-responsive HR management and equal opportunity**
 - Adopt and enforce a non-discrimination and equal opportunity policy covering recruitment, job assignment, access to training, promotion, pay and benefits, in line with ESS2.
 - Ensure that employment, promotions, salary increases and access to overtime are based on transparent, documented merit and performance criteria, not on gender or other personal characteristics.
 - Where feasible, set progressive targets for increasing women's representation in supervisory, technical and decision-making roles.
- **Safe and respectful workplace and facilities:** Ensure adequate, clean and secure welfare facilities, including segregated and lockable toilets and changing rooms where appropriate, safe and well-lit access routes, and safe break areas for women and men.

X. Life and Fire Safety Hazards and Risks:

❖ Risks:

- **Machinery overheating and malfunctioning:** Inadequate preventive maintenance, operating equipment outside the manufacturer's specifications (temperature, duty cycle, loading) or bypassing safety interlocks can lead to overheating of motors, bearings and electrical components, increasing the risk of fire in production and utility areas.
- **Electrical faults in production and utility systems:** Defective wiring, overloaded circuits, damaged insulation, poorly protected distribution boards and unsafe use of extension leads or temporary connections may cause short circuits, arcing and potential ignition of surrounding combustible materials.
- **Smoking and ignition sources near storage and waste collection areas:** Smoking, use of lighters or other open flames in or near storage areas, waste collection points and outdoor yards containing cardboard, plastic crates and shrink-wrap can ignite accumulated combustible materials.
- **Accumulation and storage of combustible packaging and waste:** Poor housekeeping and infrequent removal of cardboard, plastic film, wooden pallets and other packaging, especially if stored outdoors in direct sun or near buildings, can create significant fire load and facilitate rapid fire spread.
- **Inadequate operation and maintenance of life and fire safety systems:** If fire alarm, detection, emergency lighting, extinguishers and, where present, hose reels or hydrants are not properly

installed, inspected and maintained, early detection and effective response to a fire may be compromised.

- Obstructed emergency exits and evacuation routes: Storage of materials, parked equipment or poorly placed pallets in corridors, near exit doors or staircases may obstruct escape routes, delay evacuation and increase life-safety risks in case of fire or other emergencies.

❖ **Significance:**

The spatial influence is moderate (2), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence possibility is low (1). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- Machinery and electrical fire prevention
 - Implement a preventive maintenance program for all production lines, compressors, refrigeration units, boilers and electrical installations, including regular inspection for overheating, abnormal vibration, damaged insulation and loose connections.
 - Keep machinery within manufacturer operating limits, including load, temperature and duty cycle; install automatic cut-out or interlock protection were provided by the manufacturer.
 - Prohibit use of improvised electrical connections, overloading of sockets and use of non-industrial extension cords in production and storage areas.
- Control of ignition sources, smoking and hot work
 - Enforce a strict no-smoking policy inside buildings, in packaging and waste storage areas, and near fuel or chemical storage. Provide a clearly marked, safe smoking area outside the production buildings, equipped with metal ashtrays and sand buckets.
 - Apply a hot-work permit system for welding, cutting and grinding, including pre-work area inspection, provision of fire watch during and after work, and confirmation that suitable extinguishers are available.
- Management of combustible materials and waste
 - Store cartons, plastic film, pallets and other combustible packaging in designated, well-ventilated areas away from heat sources, electrical panels and exits, with clear separation distances and maximum stack heights.
 - Implement daily housekeeping to prevent accumulation of dust, packaging and process waste in production areas, corridors and around electrical equipment.
 - Collect combustible waste (cartons, plastics, off-spec packaging) in closed, labelled containers and transfer at least daily to a designated external waste area with adequate separation from buildings and boundary walls.
- Fire detection, alarm and suppression systems
 - Install and maintain appropriate fire detection and alarm systems (manual call points, sirens and, where feasible, smoke or heat detectors) so that alarms are audible throughout production, storage, office and welfare areas.
 - Provide an adequate number and type of portable fire extinguishers and, where required by the Civil Defense, hose reels or hydrants; ensure they are clearly marked, unobstructed and inspected at least monthly, with annual servicing by a certified company.
 - Maintain a register of all fire protection equipment, including inspection dates, defects identified and corrective actions taken.
- Emergency evacuation

- Ensure that emergency exits, stairways and escape routes are sufficient in number, clearly marked with illuminated signage, equipped with emergency lighting and kept free of obstructions at all times.
- Post simple evacuation maps in production, storage and office areas, indicating escape routes, assembly points and locations of fire equipment.
- Training and awareness
 - Provide induction and periodic refresher training for all workers, including contracted staff, on fire prevention, safe use of electrical equipment, housekeeping requirements, no-smoking rules, emergency alarms, evacuation procedures and use of portable extinguishers by designated staff.
 - Record all training sessions, participants and topics covered, and include fire safety in routine toolbox talks and supervision checks.

XI. Community Health and Safety:

❖ Risks:

- Inadequate Stakeholder Engagement: Potential risk arising from insufficient communication or ineffective stakeholder consultation throughout the Operational phase.
- Risks from Potential Fires and Emergency Situations: Inadequate preparedness for fire safety and other emergencies could impact community safety.

❖ Significance:

The spatial influence is low (1), the duration is through works carried during the O&M phase (2), the intensity of foreseen negative impacts is low (1), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Low**.

❖ Mitigation Measures:

- Stakeholder Engagement and Information Disclosure:
 - Maintain regular stakeholder engagement with nearby residents, local authorities and other interested parties, in line with ESS10 and the F4J III SEP.
 - Maintain records and logs of stakeholder engagement activities, documenting participants, issues raised, and responses and follow-up actions.
 - Disclose project information, including key E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in Arabic, using accessible formats and channels (for example notice boards at the site entrance, municipal announcements or social media).
 - Ensure communities are aware of the company's external grievance mechanism, including uptake channels and response timelines.
- Fire and Emergency Preparedness:
 - Implement the measures in point VII.
- Signage: Ensure adequate and marked emergency exits throughout the facilities, with regular inspections and maintenance, and a clear project information board.

XII. Occupational Health and Safety:

❖ Risks:

- Physical hazards in production, packaging and utilities: Workers are exposed to a range of physical hazards during operation and maintenance, including same-level slips and falls on wet or greasy floors, cuts and crush injuries from moving parts of mixers, pumps, pasteurizers, filling and packaging lines, falling objects from racking, and collisions with forklifts and internal transport equipment, in line with typical dairy-processing hazards identified in GIIP.

- Lifting, repetitive work and ergonomic strain: Manual handling of raw materials, milk cans, racks, crates and finished products, as well as repetitive tasks on slicing, packing and labelling lines, can lead to musculoskeletal disorders, back injuries and work-posture problems if workstations and processes are not ergonomically designed.
- Thermal stress, heat and cold exposure: Workers may experience heat stress when working near pasteurizers, boilers, hot-water systems and steam lines, and cold stress when working in cold rooms, freezers and refrigerated loading areas, particularly during extended shifts or without appropriate clothing.
- Biological and chemical exposure related to dairy processing: Handling of raw milk, whey, brines and non-conforming products, as well as aerosols and dust generated during cleaning and product handling, may result in dermal irritation, allergic reactions or other biological risks. These risks are compounded by the routine use of detergents, caustic and acidic CIP solutions and sanitizers if safe handling procedures and PPE are not consistently applied.
- Traffic and workplace organization risks: Poorly segregated pedestrian and vehicle routes, congested aisles, and inadequate demarcation of transport corridors increase the likelihood of collisions between workers, forklifts and pallet movers, and of accidents on stairs, platforms and ladders.
- OHS management capacity and compliance with national legislation: If the factory's OHS management system is not fully implemented and updated in line with the ESA and CAP to cover the artisanal dairy factory, there is a risk of incomplete hazard identification, outdated procedures, insufficient training, weak incident reporting and investigation, and limited worker participation through the OHS Committee and OHS Supervisor. This may result in non-compliance with Palestinian OHS legislation (including Law No. 3 of 2019 and related MoL regulations) and with ESS2 / General EHS requirements on occupational health and safety.

❖ **Significance:**

The spatial influence is moderate (2), the duration is limited to works carried during the operation phase (2), the intensity of foreseen negative impacts is moderate (2), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Moderate**.

❖ **Mitigation Measures:**

- OHS Plan and legal compliance: Implement the company OHS Plan and CAP measures for the artisanal dairy factory, aligning with Palestinian OHS legislation (including Law No. 3 of 2019 and related MoL decisions), ESS2, and the General and Dairy Processing EHS Guidelines.
- Periodic E&S and OHS reporting and incident monitoring: Include artisanal dairy OHS aspects (inspections, trainings, incidents, corrective actions) in periodic E&S reports; maintain a register of near misses, injuries and occupational illnesses and investigate all lost-time incidents and significant near misses with documented preventive actions.
- OHS Capacity Building: The OHS supervisor shall conduct continuous OHS trainings and awareness to workers, which is part of the role of the OHS supervisors in line with Law. No 3 of 2019. This includes regular OHS training sessions, drills, and awareness campaigns to maintain high safety standards.
- OHS Risk Assessment: Implement a thorough risk assessment process to identify potential hazards associated with loading/unloading, machinery operation, and chemical handling and other operational processes.
- OHS Control Measures: Ensure effective control measures are in place, such as engineering controls, administrative controls, and the use of personal protective equipment (PPE).

- **Medical Examinations:** in line with Decision of Council of Ministers No. (22) of 2003 on Initial medical examinations of workers and Decision of Council of Ministers No. (24) of 2003 on conducting periodic medical checkups for workers, workers in the dairy industry, as it is categorized in relevance to medical checkups a non-hazardous industry, are to undergo medical checkups every two years.
- **Physical hazard control, guarding and maintenance:** Ensure all mixers, pumps, pasteurizers, filling and packaging equipment, conveyors and utilities have appropriate fixed guards, interlocks and emergency stop buttons; prohibit bypassing of safeguards; require lock-out/tag-out and verification of zero energy before maintenance or cleaning; keep tools and maintenance equipment in good condition.
- **Thermal stress management (heat and cold):** Insulate hot surfaces (steam lines, pasteurizers, boilers) and cold-room doors, ensure adequate ventilation, and provide appropriate thermal PPE (heat-resistant gloves, aprons, insulated clothing); limit exposure time in high-heat or low-temperature areas through job rotation and scheduled breaks, and provide access to drinking water and warm/cold rest areas as appropriate.
- **Control of biological and chemical exposure:** Minimize aerosol- and dust-generating activities (e.g. avoid unnecessary use of compressed air or high-pressure water for cleaning); ensure local or general ventilation in areas where CIP chemicals, detergents, disinfectants and boiler chemicals are handled; provide waterproof and chemical-resistant gloves, aprons and eye/face protection; separate work and welfare facilities and strictly prohibit eating, drinking or smoking in production areas; avoid direct skin contact with non-conforming products and dairy waste.
- **PPE provision and compliance:** Provide workers free of charge with task-appropriate PPE including safety shoes, work clothing/coveralls, cut-resistant and chemical-resistant gloves, hairnets, masks/respirators where needed, eye and face protection and hearing protection in noisy areas; establish rules for proper use, cleaning, replacement and storage of PPE and enforce compliance through supervision and, where necessary, disciplinary measures.
- **Warning Signs and Emergency Numbers:** Install emergency numbers and warning signs around the facility in line with Civil Defense requirements.
- **Housekeeping and slips/trips prevention:** Maintain good housekeeping in production, utilities, corridors and storage areas; keep floors clean, dry and free of obstacles; promptly clean spills using appropriate methods; use non-slip floor finishes and/or anti-slip footwear; demarcate walkways and transport corridors and keep emergency exits, electrical panels and firefighting equipment unobstructed at all times.
- **First Aid:** Provide first aid kits on the site, ensure that kits are provided in adequate numbers per worker and that they are always accessible and in good condition at all times.
- **Medical Facilities:** Coordinate and locate the nearest medical facility/ hospital to the site. Numbers of first aid response services shall be circulated to workers.
- **Traffic Safety:** Clearing the site when reversing vehicles for loading/ unloading activities.
- **Accident Response:** update the worker injury log and establish a framework for the investigation of incidents and accidents, timeframe for preventive actions, and reporting structures and logs.
- **Maintenance:** establish a maintenance log for all systems, including HVAC, filters, and machinery and equipment to avoid any OHS incidents resulting from faults.

XIII. Food Safety and Hygiene

❖ Risks:

- **Risks from Handling Raw Materials:** Potential microbiological contamination due to improper handling, washing, storage, and preparation of raw ingredients.

- Improper Storage Conditions: Risks associated with inadequate temperature control, ventilation, or humidity management in storage and production areas, potentially leading to spoilage or microbial growth.
 - Hygiene and Cleanliness of Production Areas and Machinery: Potential contamination and microbial growth due to inadequate cleaning, sanitation, and maintenance schedules of equipment and production areas.
 - Inadequate Worker Hygiene Practices: Workers not consistently adhering to handwashing protocols, proper use of PPE, and hygiene measures (e.g., use of hairnets, and gloves), increasing potential for microbial contamination.
 - Non-Compliance to Specifications and Guidelines on Food Production: lack of compliance to national standards issued by PSI and good industry practices in food production could lead to legal and health impacts.
 - Temperature Control Risks during Production: During production steps like mixing, emulsification, or packaging, temperature fluctuations could allow microbiological growth or spoilage.
 - Labeling and Traceability Risks: Risks associated with inadequate labeling and lack of proper traceability systems, potentially lead to unsafe products reaching consumers and difficulties during product recalls.
 - Quality Testing: inadequate quality control and testing for both raw material and final products could result in spoiled batches.
- ❖ **Significance:**

The spatial influence is substantial (3), the duration is limited to works carried during the operation phase (2), the intensity of foreseen negative impacts is substantial (3), and the occurrence is possible (2). Consequently, the risk is therefore rated as **Substantial**.

❖ **Mitigation Measures:**

- Risks from Handling Raw Materials:
 - Implement stringent protocols for receiving, handling, washing, and storage of raw ingredients.
 - Maintain appropriate temperature control and humidity management for storage areas.
 - Conduct periodic microbiological testing of raw materials to detect and address contamination risks promptly.
- Improper Storage Conditions:
 - Conduct regular inspections and preventive maintenance of refrigeration and cold storage equipment.
 - Maintain daily logs of temperature and humidity conditions in cold storage units.
- Hygiene and Cleanliness of Production Areas and Machinery:
 - Implement comprehensive daily and weekly sanitation schedules for production areas and machinery, clearly documented and supervised.
 - Use food-grade, safe cleaning agents and strictly monitor their dilution and removal.
- Inadequate Worker Hygiene Practices:
 - Enforce strict compliance with PPE (gloves, hairnets, masks, gowns) and hygiene protocols, including mandatory handwashing before entering production areas.
 - Provide hygiene training periodically, clearly documenting attendance, dates, and training content.
 - Conduct regular hygiene audits and spot checks to monitor compliance, with immediate corrective actions for non-compliance incidents.
- Food Safety and Hygiene Management:

- Ensure compliance to national standards issued by PSI and good industry practices in food production.
- Labeling and Traceability: Maintain record-keeping and batch traceability systems to allow rapid identification and recall of products if contamination is identified.
- Quality Testing: Conduct daily batch testing and ensure documentation, benchmarking against PSI standards, and GIIP including FSSC 22000 and Codex Alimentarius.

B. SUMMARY TABLE OF E&S RISKS AND THEIR SIGNIFICANCE – COW FARM EXPANSION AND DAIRY FACTORY

Table 16: Summary Table of E&S Risks and Their Significance – Cow Farm Expansion

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
Overall (benefits mainly during O&M)	Improved manure collection, storage and treatment, including enhanced feeding of the biogas facility (reduced uncontrolled emissions and cleaner energy generation)	+	Direct/Indirect	Y	2	2	3	3	10 (Substantial)
	Improved design of animal housing, ventilation and drainage (animal health and welfare; reduced localized odor/vector issues compared to business-as-usual scattered supply chain)	+	Direct	N	2	2	2	3	9 (Moderate)
	Local employment and local economic stimulation (operations, feed, veterinary, transport services)	+	Direct/Indirect	N	1	2	1	3	7 (Moderate)
Operation & maintenance	Impact on air quality (ammonia, methane and nitrous oxide, odors and dust; emissions from manure storage/handling; dust from unpaved roads and daily feed delivery; combustion sources; dead animals; offsite odor nuisance)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Noise (mainly trucks and vehicles associated with manure transfer, feed delivery, and animal transport)	-	Direct	Y	1	2	1	1	5 (Low)
	Solid waste and manure management (waste feed, manure, carcasses; general farm waste; vectors and scavengers attracted by waste and carcasses)	-	Direct	Y	3	2	3	2	10 (Substantial)
	Soil and groundwater (nutrient leaching/runoff from manure and wastewater; risks from manure lagoon seepage or overtopping; improper land application of manure/digestate)	-	Direct	Y	3	3	3	2	11 (Substantial)
	Surface Runoff and Stormwater (runoff from barns, erosion and gully, flooding, overloading and uncontrolled discharge)	-	Direct	Y	3	3	2	2	10 (Moderate to Substantial)
	Hazardous materials and waste (disinfectants, antibiotics, vaccines/hormones; veterinary sharps; expired chemicals; hazardous waste segregation and disposal)	-	Direct	Y	2	2	2	2	8 (Moderate)

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
	Labor rights and working conditions (contracts, wages, insurance, child labor prohibition, workers GM, medical examinations, worker E&S capacity)	-	Indirect	N	2	2	2	2	8 (Moderate)
	Occupational health and safety (animal handling injuries; vehicles and machinery; slips/trips; chemicals; biological hazards/zoonoses; dust exposure; first aid and emergency readiness)	-	Direct	N	2	2	2	2	8 (Moderate)
	Community health and safety (zoonotic disease risks; odor/dust/vectors affecting nearby receptors; food safety and antimicrobial resistance; stakeholder engagement and external GM)	-	Direct/Indirect	Y	2	2	2	2	8 (Moderate)
	Biodiversity and Ecosystem services (degradation of downstream habitats, incremental land use intensification, disturbances from above factors, and non-targeted pest and vector control)	-	Direct/Indirect	N	2	3	2	2	9 (Moderate)

Table 17: Summary Table of E&S Risks and Their Significance – Artisanal Dairy Factory

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
Overall (benefits mainly during O&M)	Additional employment opportunities (direct and indirect)	+	Direct/Indirect	N	1	2	2	3	8 (Moderate)
	Adding value to raw milk and supporting higher value product lines	+	Direct/Indirect	Y	2	2	3	3	10 (Substantial)
	Meeting local demand and improving resilience to border closures/import disruptions	+	Direct/Indirect	Y	2	2	2	3	9 (Moderate)
	Strengthening value chain linkages (inputs, transport, packaging, retailers)	+	Indirect	N	2	2	2	3	9 (Moderate)
	Enhancing women and youth employment opportunities	+	Direct/Indirect	N	1	2	2	3	8 (Moderate)
	Supporting availability of safe traditional dairy products (heritage and food security)	+	Indirect	Y	2	2	2	3	9 (Moderate)
Finishing works and installation	Similar to the plastic factory above	-	-	-	-	-	-	-	-
Operation and maintenance	Air quality (odors, boiler exhaust, CIP vapors/aerosols, refrigerant leaks, vehicle exhaust)	-	Direct	Y	1	2	2	2	7 (Moderate)
	Noise (pasteurizers/pumps/refrigeration units/compressors/packaging/internal logistics)	-	Direct	Y	2	2	2	2	8 (Moderate)

Phase	Impact / Risk	+/-	Direct/ Indirect	Cumulative/ Residual (Y/N)	Spatial influence	Duration	Intensity	Probability	Unmitigated Risk rating
	Solid waste (organic waste, off spec batches, spoiled/returned products, packaging, segregation/storage)	-	Direct	Y	2	2	2	2	8 (Moderate)
	Hazardous materials and waste (CIP chemicals, boiler and water treatment chemicals, refrigerants, oils, residues/containers)	-	Direct	Y	2	2	2	1	7 (Moderate)
	Wastewater (high strength dairy effluent and CIP wastewater, loading to biogas system, compliance)	-	Direct	Y	3	2	3	2	10 (Substantial)
	Surface runoff and stormwater (contaminated runoff, mixing with process drains, flooding/ponding)	-	Direct	Y	2	3	2	2	9 (Moderate)
	Energy, water and utilities use (high water demand; heating/cooling energy demand; pressure on utilities)	-	Direct/Indirect	Y	2	2	3	2	9 (Moderate to Substantial)
	Labor rights and working conditions (contracts, wages, insurance, worker voice/GM, medical exams, welfare facilities)	-	Indirect	N	1	2	2	1	6 (Low)
	Gender based violence (SEA/SH, harassment, discrimination, retaliation, under reporting)	-	Direct	N	1	2	3	1	7 (Moderate)
	Life and fire safety hazards and risks (electrical faults/overheating; combustibles; exits; system O&M)	-	Direct	N	2	2	3	1	8 (Moderate)
	Community health and safety (emergency events, complaints, disclosure and GM awareness)	-	Direct/Indirect	Y	1	2	1	2	6 (Low)
	Occupational health and safety (slips on wet floors; machinery; ergonomics; heat/cold stress; chemicals; internal traffic)	-	Direct	N	2	2	2	2	8 (Moderate)
	Food safety and hygiene (raw milk handling; sanitation/CIP; storage; worker hygiene; traceability and QC failures)	-	Direct/Indirect	N	3	2	3	2	10 (Substantial)

C. ESMP MATRICES FOR THE COW FARM EXPANSION AND DAIRY FACTORY

(I) COW FARM EXPANSION

OPERATION AND MAINTENANCE PHASE

Table 18: E&S Management and Monitoring Matrix for the Operation and Maintenance (O&M) Phase – Cow Farms Expansion

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
Air Quality ➤ Air emissions and greenhouse gases (GHG) ➤ Manure storage and handling ➤ Livestock production efficiency. ➤ Dust generation. ➤ Ventilation system efficiency. ➤ Dead animals ➤ Combustion sources on the farm ➤ Odor nuisance beyond the farm boundary ➤ Cumulative contribution to GHG emissions	➤ Manure storage and handling: Control the temperature, humidity and other environmental factors of manure storage (scraped manure areas, slurry channels and pits) to reduce emissions of ammonia, methane and hydrogen sulfide (e.g. frequent removal, covered storage where feasible, maintaining crust on lagoons). Detailed provisions on manure collection, storage and transfer are presented under the Solid Waste and Manure Management section. ➤ Biogas digestion and manure utilization: Ensure continuous and efficient operation of the biogas digestion facility to capture methane from manure and reduce uncontrolled emissions; use the resulting digestate only in accordance with nutrient management procedures and at agronomic application rates. ➤ Balanced feeding and herd productivity: Maintain and periodically review feeding regimes to match nutritional requirements of different animal groups, improve feed conversion efficiency, and increase the carbon-to-nitrogen ratio in rations, thereby reducing enteric methane and nitrous oxide emissions per unit of milk produced. ➤ Dust control on internal roads and yards: Maintain all internal access roads to the farm in paved or well-stabilized condition as committed in the CAP; where unpaved stretches remain or during dry, windy periods, implement dust suppression (periodic wetting, speed limits of max. 20 km/h, good housekeeping of feed and bedding). ➤ Ventilation system operation and maintenance: Operate and maintain the barn ventilation system to ensure adequate air changes and uniform distribution of fresh air; implement a preventive maintenance schedule (fans, louvers, inlets, control	➤ Review of feed conversion ratios, weight gain, and milk yield. ➤ Monitor biogas digester operational logs. ➤ inspections of fans and ventilation system with maintenance logs. ➤ Inspection on farm cleaning and housekeeping. ➤ Inspection on PPE use. ➤ Review dead animal disposal log.	Farm operators Farm Director	➤ Al Jebrini OHS Supervisor/ Farm Director/ E&S focal point MoA ➤ <u>Frequency:</u> ○ Quarterly for feeding activities. ○ Daily monitoring for the biogas. ○ Monthly for ventilation system. ○ Weekly for PPE use. ○ Monthly for dead animals' disposal.	- Ventilation system functional and maintained. - no accumulation of manure - no delay in disposal of dead animals. -farm housekeeping and cleaning well maintained -100% compliance with PPE use.	No additional specific budgetary requirements.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<p>systems) and promptly repair malfunctions that could increase indoor concentrations of ammonia, dust and bioaerosols.</p> <ul style="list-style-type: none"> ➤ Barn hygiene and floor cleaning: Implement regular scraping and washing of floors, feed alleys and holding areas to prevent manure build-up and reduce odor and dust; ensure proper drainage to the manure / wastewater system so that wash water does not stagnate. ➤ Dead animal management: Handle and dispose of dead cattle in line with national regulations, MoA instructions and in coordination with local authorities, municipality, and JSC, and the carcass management measures in the Waste section; open burning or uncontrolled burial shall be prohibited. ➤ Combustion sources on the farm: Operate diesel generators, tractors, loaders and other mobile equipment in accordance with manufacturers' instructions; apply preventive maintenance (filters, injectors, exhaust systems), avoid unnecessary idling, consistent with the General EHS Guidelines for small combustion sources. Position stationary exhaust outlets to promote effective dispersion away from workers. ➤ Odor management beyond farm boundaries: Minimize off-site odor impacts by (i) avoiding land application of manure or digestate during unfavorable meteorological conditions (e.g. strong winds toward neighboring receptors), (ii) using incorporation / injection methods where feasible rather than surface spreading, and (iii) maintaining adequate storage capacity to avoid emergency spreading. Maintain a simple odor/complaints log and adjust practices where repeated complaints arise. ➤ Worker protection: Provide workers with appropriate PPE such as dust masks/respirators, gloves and eye protection when working in high-exposure areas (e.g. manure pits, during agitation or land application, or dusty operations), and include air-quality hazards (ammonia, H₂S, dust, odors) in OHS training and toolbox talks. ➤ Energy efficiency and renewable energy: Optimize the operation of the biogas digester and associated energy use and explore expanding solar PV generation, to reduce fossil fuel consumption and CO₂ emissions per liter of milk produced. 					
Noise	<ul style="list-style-type: none"> ➤ Minimize unnecessary idling of trucks during loading and unloading to reduce noise emissions. ➤ optimize logistical planning and delivery schedules. 	<ul style="list-style-type: none"> ➤ Site monitoring visits 	<p>Farm operators</p> <p>Farm Director</p>	<ul style="list-style-type: none"> ➤ Al Jebrini OHS Supervisor/ Farm Director 	- Compliance with allowable ambient noise levels	No additional Budgetary Requirements,

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
➤ noise generated from trucks and vehicles			OHS/ E&S Focal Point	➤ <u>Frequency:</u> Quarterly monitoring	- No community / workers complaints regarding noise. -Proper documentation of noise monitoring -Documentation and records of maintenance of machinery	noise monitoring device already accounted for in the PV subproject.
Solid Waste ➤ Generation and management of solid waste. ➤ Feed waste. ➤ Improper manure handling and management. ➤ Dead cows (Animal Carcasses): ➤ General farm solid waste ➤ Vectors and scavengers attracted by waste and carcasses	<ul style="list-style-type: none"> ➤ Manure collection and transfer: Ensure all manure is collected frequently from barns and alleys and transferred through the dedicated channels to the constructed lagoon, and from there on a regular schedule to the biogas facility. Maintain adequate lagoon freeboard and routinely inspect embankments for cracking, seepage, or overtopping. ➤ Manure storage and runoff control: Keep manure storage areas compacted and properly graded so that clean stormwater is diverted away and contaminated runoff is captured and directed to the lagoon or biogas system. Prohibit any direct discharge of manure or slurry to wadis, open drains, or neighboring lands. ➤ Feed management and waste minimization: Maintain calculated feed delivery in line with herd size and production stage to reduce feed waste. Match feed content to the specific nutritional requirements of the animals at different growth and lactation stages and, where appropriate, use low-protein, amino-acid-supplemented diets to reduce nutrient excretion. Promptly clean up spilled feed in storage, loading/unloading and feeding areas. ➤ Use of the biogas facility: Operate the biogas digestion facility continuously and maintain it in good working order so that manure and other suitable organic wastes are treated and methane emissions are captured and used, rather than vented or flared unnecessarily. ➤ Carcass (dead cow) management: Maintain mortality reduction through proper animal care and disease prevention. Where deaths occur, remove carcasses from animal areas immediately, store them in a designated, covered and vector-protected area, and 	<ul style="list-style-type: none"> ➤ Regular visual inspection of manure handling. ➤ Review feeding records. ➤ Monitor cow health records. ➤ Review dead animal disposal log. ➤ Review waste disposal log. ➤ Inspection on farm cleaning and housekeeping. 	Farm operators Farm Director	<ul style="list-style-type: none"> ➤ Al Jebrini OHS Supervisor/ Farm Director ○ <u>Frequency:</u> daily on manure handling. Quarterly for feeding and health activities. Monthly for dead animals' disposal and waste disposal. Daily on cleaning and housekeeping 	- Clear waste collection and disposal. - no accumulation of manure - no delay in disposal of dead animals. -farm housekeeping and cleaning well maintained	No additional specific budgetary requirements.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<p>dispose of them promptly in coordination with MoA and local authorities (for example, through approved rendering, licensed disposal facilities, or sanitary burial / incineration in line with national requirements). Prohibit dumping of carcasses in open areas or wadis.</p> <ul style="list-style-type: none"> ➤ General farm solid waste management: Maintain the company's Waste Management Procedure and forms that document waste type, quantities, disposal plan and disposal frequency. Segregate waste at source into at least: organic/agricultural waste (feed residues, bedding), recyclables (plastics, paper/cardboard, metals) and residual waste. Provide clearly labelled bins or collection points and contract the municipality / JSC or licensed collectors for regular off-site transport and disposal at approved facilities. ➤ Housekeeping: Maintain regular housekeeping across the farm, keeping feed storage, feeding areas and manure/waste storage areas clean and orderly. Cover or frequently turn manure and organic waste piles to discourage flies and odors, remove standing water, and implement basic rodent and stray animal control measures (traps, fencing, controlled access) in line with veterinary advice. ➤ Training and awareness: Provide periodic training for farm workers on the Waste Management Procedure, manure and carcass handling, and housekeeping requirements, and document attendance and topics covered. 					
<p>Soil and Groundwater</p> <ul style="list-style-type: none"> ➤ Leakage and seepage from manure and wastewater infrastructure: ➤ Overflow of lagoons and contaminated runoff: ➤ Land application of manure and digestate ➤ Runoff from barns, yards and 	<ul style="list-style-type: none"> ➤ Engineering of manure and wastewater structures: <ul style="list-style-type: none"> ○ Ensure the manure lagoon, channels and collection pits are constructed and maintained with low-permeability lining (e.g. reinforced concrete or suitable geomembrane) and adequate freeboard. ○ Inspect these structures regularly for cracks, corrosion, erosion, seepage stains or animal burrows, and repair defects immediately. ○ Maintain fencing around the lagoon to prevent damage by animals or unauthorized vehicles. ➤ Separation of clean and contaminated water: <ul style="list-style-type: none"> ○ Install and maintain roof gutters and surface water diversion channels to keep clean stormwater away from manure and waste-handling areas. ○ Ensure that contaminated runoff from barns, yards, manure storage and feed / silage areas is collected and directed to the 	<p>Confirm design and construction QA/QC for manure lagoon and related pits/channels (as applicable), including liner material certificates, installation checklists, as built drawings.</p> <ul style="list-style-type: none"> ➤ Monthly visual inspections of lagoon, inlet and outlet structures, pits/channels, hard standing areas, and surrounding ground 	<p>Farm operators / biogas and manure-system operator under supervision of the Farm Director.</p>	<ul style="list-style-type: none"> ➤ Farm Director and Al Jebrini E&S focal point; support from Al Jebrini OHS / environmental supervisor. ➤ Relevant authorities (MoA / EQA / Municipality) as part of periodic inspections. 	<p>No visible seepage, wet spots, staining, or structural defects observed during monthly inspections of lagoon, pits/channels, and hard standing areas, and all findings are recorded and closed out within agreed timeframes.</p>	<p>Capital costs for lagoon lining, drainage controls and containment structures incorporated in the CAP and farm investment plan.</p> <p>Bi-annual sampling and laboratory analysis of groundwater /</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
<ul style="list-style-type: none"> ➤ feed / silage storage areas ➤ Spills of fuels, oils and chemicals: ➤ Improper carcass disposal 	<ul style="list-style-type: none"> ➤ lagoon or biogas / pre-treatment system, not to open ground or wadis. ➤ Nutrient management and land application plan: <ul style="list-style-type: none"> ○ Develop and implement a written nutrient management plan for land application of manure and digestate, in line with GIIP and FAO guidance. ○ Analyze manure / digestate at least every 2-3 years (or when feed regimes change) to estimate nutrient content and calculate agronomic application rates based on crop needs, soil capacity and groundwater vulnerability. ○ Maintain minimum buffer distances from flood-prone areas and property boundaries, and avoid spreading on steep slopes, saturated soils or before heavy rainfall. ○ Keep detailed records of application dates, fields, quantities and any complaints or incidents. ➤ Good practice in feed and silage management: <ul style="list-style-type: none"> ○ Store silage and feed on hard standing with controlled drainage to the manure/wastewater system. ○ Promptly clean up spilled feed and silage leachate to avoid infiltration and runoff contamination. ➤ Spill prevention and response for fuels and chemicals: <ul style="list-style-type: none"> ○ Store fuels and lubricants in tanks equipped with secondary containment (bunds or drip trays) on impermeable surfaces; prohibit refueling or oil changes on bare soil. ○ Store chemicals (disinfectants, veterinary drugs) in dedicated, bunded rooms with impermeable flooring. ○ Maintain spill-response kits near storage and handling areas and train workers in their use; record and investigate all spill incidents and corrective actions. ➤ Carcass management: Apply the carcass management measures already described under Solid Waste; avoid burial on site. Where exceptionally required and approved by the authorities, ensure burial only in designated zones with low-permeability soils, well above groundwater and away from watercourses. ➤ Groundwater and surface-water monitoring: <ul style="list-style-type: none"> ○ Monitoring network design: Establish a small monitoring network that includes: (i) one up-gradient/background point (if feasible), and (ii) one to two down-gradient points in the likely groundwater flow direction from manure and wastewater handling areas (lagoon, channels, storage and 	<ul style="list-style-type: none"> for cracks, settlement, erosion, seepage indicators (wet spots, staining), animal burrows, abnormal odors, and any structural damage, with inspection and maintenance logs. ➤ Freeboard and capacity checks: record lagoon freeboard level at least monthly, and after major rainfall events; verify no overtopping and that stormwater segregation is functioning as designed. ➤ Review of nutrient management records (fields, application rates, dates, buffer distances) at least annually. ➤ Records of spill events, response actions and outcomes. ➤ Periodic review of carcass disposal logs and any related complaints. ➤ maintain sampling plans, forms, laboratory reports, and a monitoring 		<ul style="list-style-type: none"> ➤ <u>Frequency:</u> <ul style="list-style-type: none"> ○ Monthly site inspections of structures and drainage. ○ Annual review of nutrient management and carcass disposal records. ○ Groundwater / surface-water sampling bi-annually, or more frequently if triggered by incidents. And per EQA Requirements 	<p>Lagoon freeboard maintained within design limits at all times, with zero overtopping incidents and documented checks after major rainfall events.</p> <p>Liner QA/QC and integrity verification completed prior to operation, with acceptance records available on file.</p> <p>Clean stormwater successfully segregated from contaminated areas, with no evidence of cross-connections or contaminated runoff to open ground or wadis, and any drainage defects corrected promptly.</p> <p>Nutrient management implemented and</p>	<p>surface water to be integrated into the farm's O&M budget estimated at 2000\$ annually.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<p>loading areas). If feasible, install dedicated monitoring wells/piezometers subject to permitting and land access.</p> <ul style="list-style-type: none"> ○ Baseline monitoring: Establish baseline groundwater quality as early as feasible. Where practicable, conduct two baseline rounds representing seasonal conditions (wet season and dry season). ○ Parameters: Test baseline and routine samples for parameters relevant to manure and wastewater impacts, including at minimum: nitrate, nitrite, ammonia, electrical conductivity, TDS, chloride, sulfate, pH, COD (or TOC where applicable), and microbiological indicators (total coliform and E. coli). Add parameters as required by EQA and based on site conditions (for example phosphorus, sodium, fecal streptococci). ○ Sampling frequency: During the first year of full operation, carry out groundwater sampling semi-annually (wet and dry season). Thereafter, sample annually. Increase frequency following any incident (for example lagoon overtopping, significant spill, observed seepage) or if monitoring indicates deterioration or rising trends. Confirm with the requirements of EQA, change sampling frequency per EQA and national requirements. ○ Operational monitoring and early warning: Maintain routine inspection logs for lagoon freeboard, integrity of liners and concrete structures, signs of seepage or staining, wet spots around manure and wastewater infrastructure, and drainage performance. Maintain records of manure/digestate volumes and land application locations/dates to support traceability and investigation if monitoring results indicate impacts. ○ Thresholds and response measures: Define alert and action thresholds based on Palestinian standards and/or WHO drinking-water guidelines. If thresholds are exceeded or trends indicate deterioration, implement corrective actions, including: (i) inspection and repair of manure and wastewater infrastructure, (ii) review and adjustment of nutrient management and land application practices (rates, timing, buffers), (iii) review of lagoon capacity, freeboard and stormwater segregation, and (iv) additional engineering controls where needed (for example improved containment, additional pre-treatment or operational controls). 	<p>log; compare results to applicable standards and internal alert/action thresholds, and document trend review and any triggered investigations or corrective actions.</p>			<p>evidenced by complete land application records, buffer compliance, and no documented spreading under prohibited conditions (e.g., saturated soils or prior to heavy rainfall).</p> <p>Zero uncontrolled discharges of manure, digestate, or silage leachate; any spills are contained, recorded, and closed out with corrective actions.</p> <p>Carcass management records complete and verified, with no on-site burial unless exceptionally authorized, and no related community complaints attributable to carcass disposal.</p>	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<ul style="list-style-type: none"> ○ Quality assurance and reporting: Use a competent laboratory and apply basic QA/QC measures (field notes, chain-of-custody and repeat samples where feasible). Record results in a groundwater monitoring log and include findings and corrective actions in periodic ESMP monitoring reports, with notification to EQA where required. ➤ Engineering of Manure and Wastewater Structures: <ul style="list-style-type: none"> ○ Liner performance standard: Ensure the manure lagoon (and any associated collection pits/channels where applicable) is constructed with a low-permeability lining system achieving hydraulic conductivity $\leq 1 \times 10^{-9}$ m/s, using either engineered compacted clay liner and/or a geomembrane-composite system (or equivalent GIIP design) suited to site conditions. ○ Implement a liner QA/QC covering material specifications, subgrade preparation, installation procedures, and acceptance criteria. Inspection logs and maintenance: Maintain monthly inspection logs to check for cracks, settlement, erosion, seepage indicators (wet spots, staining), animal burrows, damage to inlet/outlet structures, and any abnormal odors. Record findings, corrective actions, and dates, and repair defects immediately. 				Groundwater monitoring results show no deterioration trends attributable to farm operations, and results remain within applicable Palestinian and/or WHO guideline values, or any exceedances trigger documented investigation and corrective actions within agreed timelines.	
Surface Runoff and Stormwater <ul style="list-style-type: none"> ➤ Runoff from barns, yards and manure-handling areas ➤ Erosion and gully formation ➤ Flooding of animal housing and infrastructure ➤ Overloading of manure lagoon and wastewater systems 	<ul style="list-style-type: none"> ➤ Storm water management plan and drainage layout: <ul style="list-style-type: none"> ○ Maintain and update a farm storm water and drainage plan showing roofs, paved and unpaved areas, channels, drains, collection pits, lagoon inlets and emergency spillways. ○ Design and maintain the system to separate clean storm water from contaminated runoff as far as practicable. ➤ Separation of clean and contaminated flows: <ul style="list-style-type: none"> ○ Collect roof water from barns and sheds via gutters and downpipes and divert it away from manure-handling areas, lagoon embankments and carcass storage zones. ○ Grade yards and traffic areas so that runoff from manure, feed and silage areas drains to the manure / wastewater system, not to open ground or wadis. ➤ Sizing and protection of drainage structures: <ul style="list-style-type: none"> ○ Ensure drains, channels, culverts and collection pits are sized for local design storm events and kept free of blockages. ○ Line key channels or use hard standing where high velocities may cause erosion; stabilize outlet points with rip-rap or vegetated buffers. 	<ul style="list-style-type: none"> ➤ Inspect roofs, gutters, downpipes, open channels, and yard drains for blockages, damage or evidence of overtopping, with special checks before and during the rainy season and after major storms. ➤ Check lagoon freeboard and integrity of lagoon embankments and diversion berms; record any erosion, cracks, seepage marks or scouring. 	Farm Manager and farm operations / maintenance team.	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal point, with support from Farm Manager. ➤ relevant authorities (municipality, MoA, EQA) during periodic supervision / inspections. ➤ <u>Frequency:</u> ➤ Visual inspection of lagoon freeboard and 	<p>No lagoon overtopping or uncontrolled discharge of contaminated storm water to wadis or adjacent lands.</p> <p>Drains, gutters and channels free of significant manure, feed residues and debris at time of inspection.</p>	Included in routine farm O&M and CAP implementation costs (labor for inspection and cleaning, minor repairs to drains and embankment

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
<ul style="list-style-type: none"> ➤ Uncontrolled discharge to wadis and downstream receptors 	<ul style="list-style-type: none"> ➤ Lagoon and storage protection: <ul style="list-style-type: none"> ○ Prevent direct inflow of storm water to the lagoon and manure storage structures by using diversion berms or channels and by maintaining adequate freeboard. ○ Inspect lagoon embankments before and after major storms and repair any erosion, scouring or signs of overtopping. ➤ Erosion and sediment control: <ul style="list-style-type: none"> ○ Maintain vegetation cover on non-operational slopes, embankments and buffer strips; reseed bare areas promptly. ○ Where runoff discharge is unavoidable, route it through vegetated swales, filter strips or small sediment traps before it reaches natural drainage lines. ➤ Housekeeping and maintenance: <ul style="list-style-type: none"> ○ Keep drains, gutters, channels and grates free of manure, feed residues and debris through routine cleaning and preventive maintenance. ○ Record drainage inspections and any corrective actions taken, particularly after heavy rainfall events. 	<ul style="list-style-type: none"> ➤ Walk key runoff paths and low points during or immediately after heavy rainfall to visually assess the quality of runoff leaving barn and yard areas (color, solids, odors) and verify that it is not reaching wadis or neighboring plots. 		<ul style="list-style-type: none"> main drains: monthly, and after heavy rainfall events. ➤ Pre-rainy-season comprehensive drainage inspection and cleaning: once per year at minimum. 	<p>No significant erosion features (rills, gullies) on internal roads, yards or embankments left unrepaired.</p> <p>Number of complaints related to runoff or flooding, and evidence that any complaints received are addressed in a timely manner.</p>	
<p>Hazardous Material and Waste</p> <ul style="list-style-type: none"> ➤ Use and storage of hazardous materials. ➤ Generation and Disposal of Hazardous Waste. ➤ Veterinary sharps and clinical waste ➤ Expired or unused pharmaceuticals and chemicals: 	<ul style="list-style-type: none"> ➤ Hazardous materials storage and handling: Maintain all disinfectants, antibiotics, vaccines, hormones and other chemicals in a dedicated, lockable store with restricted access. Store products in their original, clearly labelled containers, on shelves or spill-containing trays, away from feed and out of direct sunlight, and keep Safety Data Sheets (SDS) available for all hazardous substances. ➤ Inventory control and record keeping: Maintain and periodically update an inventory and logbook for all veterinary medicines and chemicals, recording product name, batch, quantity received, person in charge, and expiry dates. Apply a "first-expire, first-out" system to minimize accumulation of expired products and avoid over-purchasing. ➤ Worker protection and procedures: Provide workers handling hazardous materials with adequate PPE (gloves, goggles, masks or respirators as needed, safety shoes and protective clothing) and written procedures covering safe preparation of doses, injection techniques, dilution of disinfectants and emergency actions in case of accidental exposure or spills. 	<ul style="list-style-type: none"> ➤ Periodic inspections of hazardous materials storage and labeling. ➤ Review of hazardous waste disposal documentation. ➤ Visual checks of availability of PPE and usage by workers. 	<p>Al Jebrini's OHS Supervisor/ E&S focal point</p> <p>Farm operators</p> <p>Farm Director</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points ➤ MoH ➤ EQA ➤ Municipality ○ <u>Frequency:</u> Daily inspections. 	<ul style="list-style-type: none"> - Properly secured and labeled hazardous material storage areas. - Availability and correct usage of PPE and spill kits. 	<p>No additional Budgetary Requirements</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<ul style="list-style-type: none"> ➤ Veterinary sharps and clinical waste: Collect used needles, syringes, blades and other sharps immediately after use in rigid, puncture-resistant, clearly labelled sharps containers located at treatment areas. Prohibit recapping or reuse of needles. Arrange for sharps and other veterinary clinical waste to be treated and disposed of through licensed medical waste or hazardous waste service providers, in coordination with MOA, MoH and EQA, and keep disposal records. ➤ Company procedures and training: Maintain and periodically update the company procedures for procurement, storage and use of veterinary medicines and chemicals, and for management of hazardous waste and pollution sources. Provide regular training and toolbox talks for farm workers and veterinary staff on these procedures, SDS information, spill response, sharps handling and correct segregation of hazardous waste, and document attendance and topics covered. ➤ Hazardous waste segregation and storage: Maintain the storage of hazardous waste in dedicated, clearly labelled containers separate from general solid waste and manure streams. Use secondary containment (bunds or trays) for liquid wastes to prevent leaks and spills, and keep storage areas covered and ventilated. ➤ Hazardous Waste Disposal: Ensure and maintain the disposal of hazardous waste in coordination with MoH and EQA. In line with the Palestinian hazardous waste management system No. 6 of 2021. Use licensed haulers for transporting hazardous waste to ensure safe and compliant transportation. Treat all expired, damaged or unused antibiotics, hormones, vaccines and disinfectants as hazardous waste. Prohibit disposal of these materials into drains, manure channels, open ground or general waste bins. 					
Labor Rights and Working Conditions <ul style="list-style-type: none"> ➤ Noncompliance to Labor Rights (PLL, minimum wage) ➤ Child Labor 	<ul style="list-style-type: none"> ➤ <u>Clear Employment Contracts</u>: Ensure that every worker, regardless of their position, is provided with a clear and comprehensive employment contract that outlines their rights, duties, compensation, working hours, and other essential terms in line with the PLL. ➤ <u>Code of Conduct</u>: Implement and adopt the Code of Conduct (CoC). The CoC shall contain a demarcation of labor rights, responsibilities and GBV related measures that are further 	<ul style="list-style-type: none"> ➤ Verification of workers' contracts and compliance with PLL & minimum wage requirements (Act No. 4, 2021). ➤ Verification of valid injury insurance for all workers. ➤ Regular checks on the functioning and 	Al Jebrini HR Department	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal points ○ <u>Frequency</u>: Quarterly or as needed. 	<ul style="list-style-type: none"> -Workers' contracts comply with PLL. - Pay slips confirm minimum wage adherence. 	No additional Budgetary Requirements

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
<ul style="list-style-type: none"> ➤ Lack of valid injury insurance ➤ Lack of effective grievance mechanism ➤ Lack of worker awareness on E&S responsibilities, rights, grievance mechanism ➤ Medical examination of workers 	<p>discussed below. The code of conduct to be used for this project is the one recommended by the F4JII, available in Annex I.</p> <ul style="list-style-type: none"> ➤ Prohibition of Child: Explicitly prohibit child labor and forced labor in company policies and internal procedures. Maintain a workers' register with names, ID numbers and dates of birth and verify that no worker under 18 is employed in farm operations. ➤ Training: The Project Workers shall receive an E&S orientation training prior to the commencement of the operations phase, covering the CoC, GM, OHS, ERP, Waste management, and the ESMP overall. ➤ Adherence to Minimum Wage Act: regular monitoring shall be conducted to review the wages being paid to ensure they meet the minimum wage requirements set by the Palestinian Authority. ➤ Mandatory insurance: All workers must be provided with contractual documentation and are to be covered by a valid injury insurance policy. ➤ Workers' Grievance Mechanism (GM): A workers' Grievance Mechanism shall be established with anonymity and GBV referral pathways in accordance with Annex III. Uptake channels shall be disseminated to workers and should be effective and accessible. ➤ Recruitment and Employment: Recruitment shall be conducted in a transparent manner including issuing announcements for vacancies, reviewing applications based on merit and qualifications, and documenting scores provided for each applicant for later review shall audits be required or if grievances were received through the company's GM. ➤ Conduct Medical Examinations for Workers: In line with Cabinet Decisions No.22 & 24 of 2003, with follow-up medical examinations. 	<ul style="list-style-type: none"> ➤ effectiveness of the Grievance Mechanism. ➤ Documentation and review of E&S orientation training attendance sheets and training logs. ➤ Periodic reviews of medical examination logs and medical certificates. ➤ Regular checks of signed CoC records. 			<ul style="list-style-type: none"> - Valid insurance for all workers documented. - GM is accessible, effective, and utilized. -Orientation training and CoC documented. -Medical examination compliance documented 	
<p>Occupational Health and Safety</p> <ul style="list-style-type: none"> ➤ Physical hazards ➤ Chemical hazards 	<ul style="list-style-type: none"> ➤ OHS Plan: Adhere to the expansion project's OHS plan as available in Annex II. And in cases of emergencies implement the ERP that is available within it. ➤ OHS Capacity and Training: Appoint additional OHS Supervisors as needed per Law No.3 of 2019 that is based on employees' numbers, establish OHS committees in line with the ESA, and 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability and usage. ➤ OHS toolbox meeting and reports documentation review. 	<p>Al Jebrini's OHS Supervisor</p> <p>Farm Director</p>	<ul style="list-style-type: none"> ➤ Al Jebrini E&S Focal Point/ Farm Director ➤ MoL. 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded 	<p>Cost of PPEs range around 50\$ per worker. With estimated around 10 new workers, this is around 500\$.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
<ul style="list-style-type: none"> ➤ Biological hazards ➤ Exposure to dust 	<p>provide annual training refreshers on OHS and onboarding OHS trainings, as well as toolbox OHS talks.</p> <ul style="list-style-type: none"> ➤ Livestock handling and facility design: Instruct workers in correct livestock care and low-stress animal handling techniques to reduce the incidence of bites and kicks. Maintain and use appropriate handling facilities (races, chutes, gates) and non-slip floor surfaces. ➤ Vehicle and machinery safety: Limit operation of tractors, loaders, feed mixers and other mobile equipment to trained and authorized workers only. Keep guards on all moving parts, apply clear internal traffic routes and speed limits inside the farm, and perform regular maintenance and pre-use checks. ➤ Manual handling, ergonomics and thermal stress: Provide training on safe lifting and manual handling techniques, use trolleys and other mechanical aids for heavy loads where feasible, and rotate tasks to reduce repetitive strain. Provide appropriate work clothing and PPE for hot and cold conditions, shaded rest areas and drinking water, and adapt work schedules during periods of extreme heat or adverse weather. ➤ Chemical hazard control: Prevent and control chemical exposures by keeping an up-to-date inventory of chemicals, ensuring all containers are clearly labelled, and storing disinfectants, detergents, pesticides and other hazardous products in a locked, ventilated area. Train workers in the safe use of these materials in line with Material Safety Data Sheets (MSDSs), including mixing, application and disposal, and ensure appropriate PPE (gloves, goggles, masks, aprons, safety shoes) is available and used. Prohibit eating, drinking and smoking in chemical handling and animal treatment areas. ➤ Biological hazard control: Inform workers of potential risks of exposure to biological agents and provide training on zoonoses recognition and prevention. Enforce strict personal hygiene measures, including hand-washing facilities at strategic points, changing / cleaning of work clothes and boots, and safe handling of manure and carcasses. Provide appropriate PPE (gloves, overalls, boots, eye and respiratory protection as needed) to reduce contact with materials potentially containing pathogens, and ensure that workers who develop allergic reactions or medically confirmed sensitivities are reassigned away from high-exposure tasks. ➤ Dust exposure prevention: Reduce dust generation when handling feed and animal waste by keeping feed storage covered, 	<ul style="list-style-type: none"> ➤ Availability of incident and accident log. ➤ Availability of first aid kits. ➤ Housekeeping monitoring ➤ Inspection tours and visits 		<ul style="list-style-type: none"> ➤ <u>Frequency:</u> Frequency: Monthly or as required 	<ul style="list-style-type: none"> -Workers' adherence to PPE protocols. -Adequately documented OHS training logs and toolbox meetings. -Documented accidents investigations and preventive actions. -Medical records of employees - Documented OHS Trainings 	<p>First aid kits cost ~ 150\$.</p> <p>OHS training to workers by the OHS supervisor can include miscellaneous costs of around 300\$ per session.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<p>minimizing free-fall distances during loading/unloading, and maintaining good barn ventilation. Provide workers with suitable respiratory protective equipment when working in dusty areas or during tasks such as feed mixing and dry manure handling.</p> <ul style="list-style-type: none"> ➤ First aid and medical arrangements: Provide first aid kits on site in adequate numbers relative to workers, ensure they are always accessible, regularly checked and replenished, and designate trained first-aiders per shift. Coordinate with and locate the nearest medical facility / hospital to the site and circulate emergency contact numbers and procedures for first-aid response to all workers. 					
<p>Community Health and Safety</p> <ul style="list-style-type: none"> ➤ Potential spread of animal diseases ➤ Food safety and antimicrobial resistance ➤ Odor, dust and vectors affecting neighboring receptors ➤ Inadequate Stakeholder Engagement 	<ul style="list-style-type: none"> ➤ Disease control and biosecurity: Implement the manure, carcass and solid waste management measures described in the relevant subsections of this ESIA, as these directly reduce the risk of disease transmission to the community. Maintain a veterinary health program including regular vaccination, deworming and prompt isolation and treatment of sick animals, with veterinary supervision. Restrict public access to barns, manure storage areas and carcass holding areas, and maintain fencing and controlled gates around the farm. Avoid application of solid or liquid manure directly onto grazing areas or edible crops. ➤ Food safety and prudent use of antibiotics: Use veterinary medicines, including antibiotics and hormones, only under the prescription and supervision of a licensed veterinarian and in line with national regulations. Maintain detailed records of all treatments, including product, dose, date and treated animals. Strictly respect withdrawal periods for milk and meat before products enter the food chain, and implement routine quality control testing in line with Palestinian food safety requirements. Prohibit the use of any substances banned for food-producing animals by national regulations or recognized international standards. ➤ Odor, dust and vector management: Operate the manure, lagoon and biogas systems in a manner that minimizes odor and dust, including regular removal of manure from barns, maintaining lagoon freeboard, and avoiding agitation or spreading of manure during periods of high winds or when receptors are most sensitive. Implement vector control measures such as good housekeeping, removal of standing water, covered storage of waste and feed, and, where needed, targeted pest control under veterinary guidance. Maintain internal roads and, where not fully paved, 	<ul style="list-style-type: none"> ➤ Inspect banned chemical and biological substances usage. ➤ Inspect manure handling. ➤ Review records and logs of stakeholder engagement and information disclosure. 	<p>Al Jebrini's OHS Supervisor</p> <p>Farm Director</p>	<p>Al Jebrini's OHS Supervisor</p> <p>Farm Director</p> <p><u>Frequency:</u></p> <ul style="list-style-type: none"> ➤ Inspections to be done quarterly. ➤ Stakeholder Engagement at least annually, 	<p>-Zero community complaints related to spread of animal diseases or food safety issue</p> <p>-No banned chemical or biological substances used.</p> <p>- Zero community complaints related to lack of communication or inadequate consultation.</p> <p>-All key project and E&S documents disclosed in Arabic through appropriate channels.</p>	<p>No additional Budgetary Requirements</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<ul style="list-style-type: none"> ➤ apply appropriate dust suppression during dry periods, especially when heavy traffic is expected. ➤ Stakeholder engagement and grievance management: Maintain regular communication with neighboring communities, local authorities and other interested stakeholders throughout the O&M phase, including information on farm operations that may affect them (for example manure spreading periods, traffic patterns, odor control measures). Disclose key E&S information and mitigation measures in Arabic through accessible channels. Ensure that the company's grievance mechanism is available to external stakeholders, with clear uptake channels, timely response, and documentation of complaints and actions taken. 					
<ul style="list-style-type: none"> ➤ Degradation of downstream habitats ➤ Incremental land-use intensification and vegetation removal ➤ Disturbance from noise, traffic and lighting ➤ Non-target impacts of pest and vector control 	<ul style="list-style-type: none"> ➤ Limit vegetation clearance and enhance habitat features: ➤ Restrict any further land clearing to the minimum area needed for safe operation; maintain existing trees, hedgerows and shelterbelts as far as possible. ➤ Where feasible, plant additional native trees and shrubs along farm boundaries and around the lagoon / biogas facility to provide visual screening and habitat for birds and beneficial insects. ➤ Control pollution pathways affecting habitats: ➤ Implement the soil, groundwater and manure-management measures described above to avoid discharge of nutrients, organic matter and pathogens to wadis and natural drainage lines. ➤ Maintain buffer strips of vegetation along any natural drainage or terraces where runoff may occur. ➤ Wildlife-friendly lighting and operations: ➤ Use downward-directed, shielded exterior lighting with timers or motion sensors to avoid unnecessary night-time illumination, particularly towards open fields and wadis. ➤ Avoid high-noise activities at night where feasible. ➤ Integrated pest and vector management (IPM): ➤ Prioritize housekeeping, waste minimization and physical measures (screens, traps, fencing) to control vectors before resorting to chemical pesticides. ➤ When rodenticides or insecticides are necessary, select products with lower persistence and toxicity, apply them in a targeted manner under the guidance of veterinary or pest-control professionals, and prevent access by non-target animals (e.g. using covered bait stations). ➤ Keep records of the type and quantities of pesticides used, locations and any observed non-target impacts. 	<ul style="list-style-type: none"> ➤ Periodic site inspections (e.g. quarterly) including visual checks of vegetated buffers, tree condition and signs of erosion, eutrophication or unusual mortality of fauna. ➤ Review of records for vegetation planting / maintenance and pest-control product use. ➤ Review of grievances and complaints related to odors, runoff, or observed effects on nearby vegetation / fauna. 	Farm operators / maintenance team, under supervision of the Farm Director.	<ul style="list-style-type: none"> ➤ Al Jebrini E&S focal point together with Farm Director; support from MoA / EQA during periodic inspections as relevant. ➤ <u>Frequency:</u> Quarterly site biodiversity / habitat walk-throughs; annual review of pest-control records and vegetation condition. 	<p>No observable eutrophication or pollution-related die-off in nearby wadis attributable to farm operations.</p> <p>Shelterbelts, trees and buffer strips maintained and not significantly reduced in extent.</p> <p>Pest-control records show use of IPM with limited, targeted pesticide use; no recorded non-target wildlife poisoning incidents.</p> <p>No unresolved biodiversity-related complaints from neighboring land users.</p>	No additional Budgetary Requirements

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Cow Farm)						
	<ul style="list-style-type: none"> ➤ Monitoring and stakeholder feedback: ➤ Include biodiversity-related observations (e.g. visible eutrophication in wadis, dead fish or birds, unusual vegetation die-off) in periodic site walk-throughs and inspections. ➤ Record and respond to any biodiversity-related concerns or complaints raised by neighboring land users through the project grievance mechanism. 					

(II) ARITSANAL DAIRY FACTORY SUBPROJECT

FINISHING WORKS AND INSTALLATION PHASE

For the finishing works and installation phase of the artisanal dairy factory, the environmental and social risks, mitigation measures, monitoring arrangements, responsibilities, indicators and budget are the same in nature and magnitude as those identified for the plastic factory, since both involve similar minor civil works and equipment installation activities. Therefore, the ESMP matrix developed for the plastic factory in the finishing works and installation phase ([Section 7.3.3.2](#) and the [Finishing works and installation phase ESMP table](#)) shall apply in full to this subproject for this phase, and should be followed by Al Jebrini and contractors when planning, implementing and monitoring the artisanal dairy factory fit-out works.

OPERATION AND MAINTENANCE PHASE

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ○ Provide local exhaust ventilation for high steam-release operations (for example pasteurization, cooking, hot-water washing) and, as far as practicable, separate hot/wet areas from cold/dry and packaging areas. ○ Implement a preventive maintenance schedule for air-handling units, fans, filters and ducting, including regular cleaning and replacement of filters, and keep a ventilation maintenance log. ➤ Vehicle exhaust emissions from milk collection and product distribution: <ul style="list-style-type: none"> ○ Implement a preventive maintenance program for all trucks and refrigerated vans, including engine tuning, exhaust and emission-control systems, tire pressure and refrigeration units. ○ Optimize route planning, loading schedules and delivery runs to reduce unnecessary trips and empty returns, and prohibit prolonged idling of vehicles in loading bays and yard areas. ➤ Emissions from maintenance and repair activities (VOCs, dust and particulates): <ul style="list-style-type: none"> ○ Give preference to low-VOC paints, solvents, lubricants and adhesives where technically feasible, and avoid use of high-volatility products when alternatives exist. ○ Carry out painting, solvent use, grinding, cutting and similar maintenance activities in well-ventilated areas or outdoors where practicable, and use local exhaust or portable extraction units when such work must be done indoors. ○ Provide maintenance staff with appropriate PPE (for example gloves, eye and face protection, and respiratory protection where indicated in the SDS) and training on safe handling, storage and disposal of chemicals. 	<ul style="list-style-type: none"> ➤ dust are carried out in designated, ventilated areas and that PPE is used. ➤ Inspection of vehicle maintenance records and spot checks on idling and route adherence for distribution trucks. 				
Noise <ul style="list-style-type: none"> ➤ High noise levels from operations ➤ Production Line Noise ➤ Vehicular Noise 	<ul style="list-style-type: none"> ➤ Noise Level Management: Implement administrative and engineering controls to reduce noise at the source within the factory. This includes routine maintenance of current machinery to prevent excessive noise and the installation of noise dampening materials around high-noise areas. ➤ Noise Level Optimization: Ensure all machinery, including the production line, is fitted with noise-dampening materials and silencers where feasible. Regular maintenance should be performed to reduce noise emissions from machinery. Locate stationary high-noise equipment away from offices, control rooms and rest areas and restrict access of non-essential staff to high-noise zones. 	<ul style="list-style-type: none"> ➤ auditory inspections during activities. ➤ Noise measurements. ➤ Review of maintenance records for equipment and vehicles. ➤ Inspection of PPE usage compliance. 	Al Jebrini/ Al Motawaset OHS Supervisor and Maintenance Team	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset OHS Supervisor/ E&S Focal Point ➤ EQA ➤ MOL ○ <u>Frequency:</u> Weekly noise measurements initially (3 months), then 	<ul style="list-style-type: none"> -Compliance with allowable ambient noise levels - No community / workers complaints regarding noise. -Proper documentation of noise monitoring 	Cost of noise measurement equipment (Sound Level Meter: 150\$)

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ Worker Protection: Provide personal protective equipment (PPE), such as earplugs or earmuffs, to workers in high-noise areas and enforce usage protocols in line with MoL instructions No. of 2005. ➤ Monitoring And Training: Conduct noise level monitoring, weekly noise measurements for the first 3 months, shifting to monthly afterward if within permissible limits, or as directed by EQA and MoL. and provide training for workers on the risks of noise exposure and the importance of hearing conservation practices. ➤ Adherence to National Noise Regulations: The factory shall adhere to the Palestinian Standard on Ambient Noise Levels (PS 840-2005). ➤ Use Optimization: Optimize the use of machinery that generate noise (e.g., turn off when idle). ➤ Maintenance: Continuous maintenance of vehicles and equipment in accordance with the manufacturer's recommendations. ➤ Vehicular Movements: Limit the movement of vehicles to daytime only. Avoid roads that are adjacent to Noise Sensitive Receptors through logistics planning. ➤ Limit the movement of vehicles to daytime only. Avoid roads that are adjacent to Noise Sensitive Receptors through logistics planning. 	<ul style="list-style-type: none"> ➤ Record each reading with date, location, time, and source of noise ➤ Site monitoring visits 		monthly or as directed by EQA/MOL	-Documentation and records of maintenance of machinery	
Solid Waste <ul style="list-style-type: none"> ➤ Organic process waste and non-conforming products ➤ Spoilage, returns and rejected materials ➤ Packaging and ancillary solid waste ➤ Segregation and management of process versus 	<ul style="list-style-type: none"> ➤ Solid waste management planning and hierarchy: Prepare and implement a solid waste management procedure for the artisanal dairy factory that follows the waste hierarchy (prevention, reduction, reuse, recycling, safe disposal) and is integrated with the factory's food safety and hygiene systems (for example GMP / HACCP). ➤ Management of process organic waste and by-products (whey, curd fines, sludge, filter residues): <ul style="list-style-type: none"> ○ Minimize generation of organic waste through good process control, accurate dosing, and careful handling of raw materials and product. ○ Collect organic process waste in closed, clearly labelled, leak-proof containers or covered bins; store in cooled or shaded areas, separate from production and traffic routes, and remove at least daily, with increased frequency during hot weather to prevent odors and attraction of pests. ○ Prohibit disposal of solid organic waste into surface drains or the external environment; dispose of through licensed service providers or other methods approved by the competent authorities. 	<ul style="list-style-type: none"> ➤ Regular visual inspection of waste storage areas. ➤ Verify availability of waste bins. ➤ Review training logs and attendance records. ➤ Check waste disposal records and confirm adherence to designated disposal locations. 	Al Jebrini / Al Motawaset Operations Team and Manager	Al Jebrini / Al Motawaset E&S focal points. <ul style="list-style-type: none"> ○ <u>Frequency:</u> Weekly internal inspections; Quarterly review by E&S Specialist. 	Waste segregation system in place and functioning, with clearly labeled bins available at all main waste generation points. <p>Central waste storage area kept clean, orderly, pest free and without overflow, open dumping or burning.</p> <p>Logs show that waste, including spoiled and</p>	Lockable spoiled products container estimated cost at 500\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
<ul style="list-style-type: none"> ➤ municipal waste ➤ Waste storage and collection practices 	<ul style="list-style-type: none"> ➤ Spoiled, expired and returned products: <ul style="list-style-type: none"> ○ Develop and apply procedures, in line with Ministry of Health and food-safety requirements, for segregation, recording, secure storage and final disposal of spoiled, expired or returned products and rejected raw materials. ○ Continuous coordination should be ensured on the requirements for the disposal of spoiled or returned products, including the potential need for new locked containers, and other MoH requirements. ○ Arrange for destruction or disposal only through MoH, and maintain records of quantities, dates and means of disposal. ➤ Segregation of waste streams and packaging materials: <ul style="list-style-type: none"> ○ Provide clearly labelled and, where useful, color-coded containers for the main waste streams: organic process waste, recyclable packaging (cartons, plastics, metals), general municipal waste, and any hazardous waste (for example waste oils, chemical containers, fluorescent lamps). ○ Place bins at the main points of waste generation (production halls, packaging lines, warehouse, offices) and train workers and cleaners on correct segregation practices. ○ Establish, where feasible, contracts with licensed recyclers for clean cardboard, plastic film and other recyclable packaging, and keep records of quantities sent for recycling. ➤ On-site storage, housekeeping and pest control: <ul style="list-style-type: none"> ○ Maintain a designated central waste storage area that is paved, well drained, easy to clean, and protected from rain and wind to avoid litter, odors and leachate. ○ Implement daily housekeeping rounds to empty internal bins into the central storage area, clean up any spilled waste, and check the condition and cleanliness of containers. ○ Keep all waste containers closed when not in use and integrate waste storage practices with the facility pest management program to avoid attracting insects, birds and rodents. ➤ Off-site transport and final disposal: <ul style="list-style-type: none"> ○ Maintain written arrangements with Municipality, JSC, and MoH that define container types, collection frequency and approved disposal sites. ○ As far as practicable, verify that collected waste is transported only to authorized disposal facilities, and retain collection receipts or other documentation where available. 				<p>returned products, is collected and disposed of only through designated and approved locations and service providers.</p> <p>No substantiated worker or community complaints related to solid waste handling, odors or pests.</p>	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ Training, awareness and record-keeping: <ul style="list-style-type: none"> ○ Provide regular training to production workers, warehouse staff and cleaners on waste minimization, segregation, food-safety implications of poor waste handling, use of bins and emergency response in case of spills. 					
Hazardous Material and Waste <ul style="list-style-type: none"> ➤ Use and storage of cleaning and disinfection chemicals ➤ Chemicals for utilities and maintenance ➤ Generation of hazardous waste ➤ Spills and leaks ➤ Improper management of empty containers and maintenance waste 	<ul style="list-style-type: none"> ➤ Hazardous materials inventory, labeling and SDS management: Maintain an up-to-date register of all hazardous materials used on site (detergents, caustic and acidic CIP solutions, sanitizers, lubricants, refrigerants, boiler and water-treatment chemicals, paints, solvents and adhesives). Ensure that all containers are clearly labelled in Arabic and English with product name, main hazards and handling instructions, and that Safety Data Sheets (SDS) are available at points of use and in the chemical storage areas. Provide induction and periodic training to all relevant workers on chemical hazards, SDS use and safe handling procedures, in line with ESS3 requirements on chemicals and hazardous materials. ➤ Storage and segregation of chemicals: Store hazardous chemicals only in designated, ventilated storage rooms or cabinets with impermeable floors, secondary containment (bunds or trays) and suitable shelving. Segregate incompatible substances (for example acids and alkalis, oxidizers and organics, chlorine-based products and acids) and store flammables away from ignition sources. Keep storage areas locked and accessible only to trained personnel, with clear warning signs and emergency contact numbers posted at the entrance. ➤ Safe handling, dosing and worker protection: Develop and implement written procedures for the safe preparation, dosing and transfer of chemicals (including CIP solutions), specifying required PPE, dilution steps and emergency actions. Provide appropriate PPE free of charge such as chemical-resistant gloves and aprons, eye and face protection and respiratory protection where indicated in SDS, and enforce proper use and replacement. Install eye-wash stations and emergency showers near main chemical use and storage areas and maintain them in ready-to-use condition. ➤ Spill prevention and response: Equip all chemical storage and main use areas with spill kits and absorbent materials suitable for the substances present. Train workers on immediate spill response, including stopping the source where safe to do so, containing the spill, protecting drains, using appropriate PPE and notifying 	<ul style="list-style-type: none"> ➤ Periodic inspections of hazardous materials storage rooms and use areas (labelling, segregation, containment, housekeeping, availability of spill kits, PPE and eye-wash / emergency showers). ➤ Verification that SDS and the hazardous materials inventory are available, up to date and accessible to workers. ➤ Review of hazardous waste records and manifests, and visual inspection of hazardous waste temporary storage area (segregation, labelling, containment, storage duration). ➤ Visual checks of spill response kits and PPE availability and condition, and spot checks on correct use during operations. 	Al Jebrini/ Al Motawaset's OHS Supervisor Al Jebrini / Al Motawaset Operations Team and Manager	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset E&S focal points ○ <u>Frequency:</u> Weekly internal inspections of storage and use areas. ○ Quarterly review of hazardous materials inventory, SDS file, hazardous waste records and manifests, and training logs. ○ Additional ad hoc checks following any incident, spill or near miss. 	<ul style="list-style-type: none"> - Hazardous material storage areas properly secured, orderly and correctly labelled. - SDS and chemical inventory available, current and known to workers at points of use. - Spill kits and appropriate PPE available and used correctly, as observed during inspections. - No uncontrolled chemical spills or releases recorded; all incidents investigated and corrective actions implemented. - Hazardous waste 	<ul style="list-style-type: none"> - Approximately USD 100 for spill kits. - E&S capacity building including trainer cost and miscellaneous cost ~ 600\$ per session.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<p>supervisors. Prohibit hosing down spills into floor drains. Integrate chemical spill scenarios into the facility Emergency Response Plan and incident reporting system.</p> <p>Management of hazardous waste and residues: Classify and segregate hazardous waste streams such as used oils and lubricants, oily rags and absorbents, contaminated PPE, spent filters and cartridges, obsolete chemicals and chemically contaminated packaging. Collect each stream in closed, clearly labelled containers placed on impermeable surfaces with secondary containment, separate from non-hazardous waste. Maintain a log of quantities generated, stored on site and transferred off site. Ensure storage periods are minimized and in all cases comply with national requirements, including the Palestinian Hazardous Waste Management System No. 6 of 2021.</p> <p>Empty containers and maintenance waste: After ensuring that they are fully drained and, where recommended in the SDS, triple-rinsed, store empty chemical drums, IBCs and smaller containers in a designated, secure area pending removal by an approved handler. Prevent any re-use of containers for food, water or other incompatible materials. Store used filters, replaced parts and other maintenance waste that may contain hazardous residues in sealed, labelled containers and manage them as hazardous waste.</p> <p>Off-site transport and final disposal: Arrange for collection, transport and final treatment or disposal of hazardous waste only through authorized service providers licensed by the competent authorities (MoH, EQA and, where relevant, the municipality). Obtain and retain manifests, receipts or certificates that specify the quantities, dates and destinations of hazardous waste removed from the site.</p> <p>Training, supervision and continual improvement: Provide targeted training at least annually to cleaning, production, utilities and maintenance staff on chemical and hazardous waste management, spill response and use of PPE. Supervisors will conduct routine checks on chemical storage areas and use practices, record any non-compliances and ensure timely corrective actions. Review incidents, near misses and hazardous waste records regularly to identify trends and update procedures, training and storage arrangements as needed.</p> <p>PPEs: Workers shall be provided with full protection PPEs, including gowns, industrial gloves, industrial scale masks, goggles,</p>	<p>➤ Documentation and review of training attendance sheets for staff handling chemicals and hazardous waste.</p>			<p>transferred only to licensed service providers, with manifests and receipts on file.</p>	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	and other as appropriate according to manufacturer specifications.					
Wastewater <ul style="list-style-type: none"> ➤ High-strength process wastewater ➤ Overloading of biogas unit and inadequate treatment: ➤ Inappropriate segregation of streams ➤ Uncontrolled management of sludges and screenings 	<ul style="list-style-type: none"> ➤ Source reduction in processes and cleaning: Minimize milk and product losses through good housekeeping, preventive maintenance and operator training (e.g. closing valves before changeovers, avoiding overfills, prompt repair of leaks). ➤ Segregation and collection of wastewater streams: <ul style="list-style-type: none"> ○ Maintain physically separate networks for: (i) industrial/process wastewater (including CIP), (ii) sanitary sewage, and (iii) stormwater. Clearly mark inspection chambers and manholes. ○ Install coarse screens and grease traps on production drains to remove curd fines, solids and FOG before wastewater enters the collection system or balance tank. ○ Segregate and separately collect high-strength streams (whey and product losses, first rinses) from lower-strength wash waters, to reduce hydraulic load and stabilize treatment performance. ○ Segregate CIP return streams (including alkaline/acid cycles and brine shocks) and discharge them in a controlled manner to equalization with pH control, avoiding shock loading to downstream units. ○ Keep cooling water and condensate in closed circuits where feasible; reuse relatively clean streams for low-risk cleaning tasks (e.g. pre-rinsing, yard washing) through the recovery tank already envisaged, to reduce fresh-water demand. ➤ On-site wastewater treatment (OWTS): <ul style="list-style-type: none"> ○ Establish and operate an on-site wastewater treatment unit (OWTS) dedicated to the artisanal dairy factory's operational wastewater, sized for the expected hydraulic and organic loads and designed to consistently meet applicable Palestinian industrial effluent standards and EQA approval conditions. ○ The on-site system shall, at minimum, include pre-treatment (screening and FOG removal), equalization with pH control (to buffer CIP and brine shocks), and appropriate biological treatment and polishing (for example aerobic treatment with clarification and filtration), with disinfection where required based on reuse quality targets. ○ Treated effluent shall be stored in a dedicated tank and reused, to the extent feasible and subject to EQA approval, 	<ul style="list-style-type: none"> ➤ Keep a simple log of housekeeping and process-loss reduction actions (e.g. product spillage events, CIP optimization measures, leak repairs). ➤ Maintain an operating log for the OWTS and biogas / wastewater system, including daily flow meter readings (influent and treated effluent), pH control dosing (as applicable), any upset conditions/alarms, any bypass events, and corrective actions. ➤ Define and label sampling points and maintain a simple sampling plan, at minimum: <ul style="list-style-type: none"> ○ Influent sampling point: after screens and FOG trap and before equalization/pH control. ○ Treated effluent sampling point: after final polishing/disinfection (if used) and before the 	<p>Artisanal Dairy Factory Manager.</p> <p>Biogas / Wastewater Treatment Operator and Utilities Team.</p>	<ul style="list-style-type: none"> ➤ Al Jebrini / Al Motawaset E&S Focal Point, in coordination with the Factory Manager and Utilities Team. ➤ F4J III E&S Specialist as part of periodic supervision missions; EQA as per licensing conditions. ➤ <u>Frequency:</u> ➤ Housekeeping and segregation checks: weekly. ➤ Flow meter readings and biogas O&M log: daily. ➤ Laboratory testing and review of results: <ul style="list-style-type: none"> ○ Year 1: monthly influent and treated effluent testing for BOD, COD, TSS, TN, TP, FOG, pH and EC (plus any EQA-required parameters). ○ After Year 1: adjust frequency based on performance trends 	<p>Industrial and treated effluent quality parameters consistently within applicable Palestinian industrial wastewater standards and EQA approval conditions (and at minimum meeting the WBG Dairy Processing EHS guideline values for the approved disposal/reuse route).</p> <p>Year 1 monitoring completed as planned (monthly influent and treated effluent testing for BOD, COD, TSS, TN, TP, FOG, pH and EC), with results logged, reviewed, trended, and supported by laboratory reports and basic QA/QC documentation.</p> <p>No reuse of treated effluent occurs until OWTS</p>	<p>Supply and installation of two wastewater flow meters (one on industrial influent from the artisanal dairy factory and one on treated effluent): approximately 3,000 USD in total (equipment plus basic installation and commissioning).</p> <p>Routine laboratory testing of influent and treated effluent (full parameter set, monthly sampling for one year): approximately 2,400 USD per year (assumed 200 USD per composite sample, 12 samples annually).</p> <p>OWTS Capital Cost is around 50,000\$. (CAPEX)</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<p>for landscaping and gardening/irrigation within the Al Jebrini site, using controlled application methods that avoid ponding, runoff and contact with workers or the public.</p> <ul style="list-style-type: none"> o Maintain separation of reuse lines from potable and process water lines, install basic backflow prevention, and post clear signage (for example "treated wastewater for irrigation only") to prevent misuse. o Manage treatment residuals (screenings, grease, sludge) as controlled waste streams under the relevant solid and hazardous waste procedures, and ensure routine O&M by trained personnel, with records kept for inspections and reporting. <p>➤ Integration with biogas unit and treatment performance:</p> <ul style="list-style-type: none"> o Confirm through engineering design that the biogas unit has adequate hydraulic and organic capacity for the additional dairy effluents, and implement phased loading and monitoring during start-up. o Install an equalization/balance tank with mixing and pH control upstream of the biogas feed point to smooth out flow and load variations and to prevent shock loads from CIP chemicals and brines. o Where monitoring shows that biogas treatment alone is insufficient to meet Palestinian industrial effluent standards or EQA conditions, provide and operate appropriate polishing steps (for example aerobic treatment, settling/clarification or filtration) before any discharge or reuse. o Develop and implement an O&M manual for the integrated wastewater/biogas system, including procedures for start-up, routine operation, upset conditions and emergency shutdowns. <p>➤ Effluent quality and standards:</p> <ul style="list-style-type: none"> o The OWTS shall be designed and operated to meet EQA permit conditions and applicable Palestinian requirements, and at minimum achieve the WBG Dairy Processing EHS effluent guideline values for direct discharge (BOD, COD, TSS, oil and grease, TN, TP, pH). o Where treated effluent is reused for landscaping/irrigation, reuse will be subject to EQA approval and applicable Palestinian treated wastewater reuse standards (for example PSI standards referenced for treated wastewater reuse in irrigation). 	<p>treated effluent storage tank and reuse network.</p> <ul style="list-style-type: none"> o Residuals point: at the sludge/grease/screenings collection and storage point prior to off-site removal (for tracking and characterization as required by disposal route). <p>➤ Conduct regular laboratory testing of influent and treated effluent for the minimum parameter set: BOD, COD, TSS, TN, TP, FOG, pH and EC, plus any additional parameters required by EQA and reuse approval conditions; keep results in a wastewater quality log.</p> <p>➤ Compare treated effluent results against the applicable compliance basis (EQA permit/clearance conditions and applicable Palestinian requirements, and at minimum WBG Dairy Processing EHS guideline values);</p>		<p>and EQA requirements (at minimum quarterly where allowed; revert to monthly following incidents, repeated exceedances or deteriorating trends).</p> <p>➤ Formal E&S performance review of wastewater system: quarterly and annually.</p>	<p>commissioning is completed and EQA clearance/approval for the intended reuse route is obtained and documented.</p> <p>No uncontrolled discharges of process wastewater to storm drains, soil, wadis or septic systems; no prolonged bypass events.</p> <p>No repeated treatment upsets attributable to shock loading (CIP/brine) or high-strength stream mismanagement, and no recurring odor complaints linked to wastewater handling or treatment.</p> <p>Treatment residuals (screenings, grease and sludge) are consistently removed through authorized routes with manifests/receipts retained and no observed leakage,</p>	Operational Cost is around 10,000\$ per year.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ Monitoring and compliance with EQA approval: <ul style="list-style-type: none"> ○ Install flow meters on the main industrial wastewater line from the artisanal dairy factory and on the treated effluent from the biogas/associated treatment system, and record readings at least daily. ○ Monitoring in Year 1 (influent and effluent): During the first year of operation, perform monthly laboratory testing of influent and treated effluent for at minimum: BOD, COD, TSS, TN, TP, FOG, pH, and electrical conductivity (EC), plus any additional parameters required by EQA; maintain a monitoring log and investigate any exceedances or upward trends with corrective actions documented. ○ Carry out regular laboratory testing (at least monthly, or as required by EQA) of influent and treated effluent for relevant parameters (e.g. BOD, COD, TSS, FOG, pH, conductivity/salinity, nutrients and microbiological indicators), maintain a wastewater quality log, and report results to EQA where required. ○ If test results show exceedances or trends toward non-compliance, investigate causes (e.g. increased product losses, CIP changes, biogas performance) and implement corrective actions, documenting all steps taken. ➤ Commissioning and clearance condition: No reuse (and no discharge, if ever applicable) shall occur until the OWTS is commissioned and demonstrates compliant performance based on the agreed monitoring program, and EQA clearance/approval for the intended reuse/disposal route is obtained. 	<ul style="list-style-type: none"> ➤ document any exceedances, trends and corrective actions taken. ➤ Maintain records for treatment residuals (screenings, grease and sludge), including quantities generated/removed, storage duration, manifests/receipts and destination; conduct characterization where required by competent authorities and disposal route. 			overflow or improper storage.	
Surface Runoff and Stormwater <ul style="list-style-type: none"> ➤ Contamination of storm water by process materials ➤ Mixing of storm water with process wastewater ➤ Flooding and ponding 	<ul style="list-style-type: none"> ➤ Storm water and drainage design: <ul style="list-style-type: none"> ○ Prepare and maintain a drainage plan for the factory, clearly distinguishing storm water drains from process and sanitary wastewater lines. ○ Ensure roof runoff is collected by gutters and downpipes and discharged away from process areas, chemical storage, and foundations. ➤ Segregation of streams: <ul style="list-style-type: none"> ○ Maintain complete physical separation between storm water drainage and process / sanitary wastewater collection. ○ Mark drain inlets (e.g. "storm water only") and prohibit discharge of process effluents, CIP solutions, chemicals or floor washings into storm drains. ➤ Control of contaminated runoff: 	<ul style="list-style-type: none"> ➤ Inspect roof gutters, downpipes, yard drains, grated channels, sediment traps and any oil separators at loading bays and parking areas; clean them from solids, sludge, fats and debris as needed. ➤ During or immediately after intense rainfall, 	Factory Maintenance / Utilities Manager in coordination with Production Manager.	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset E&S focal point together with the factory OHS/ EHS supervisor. ➤ relevant authorities (municipality, EQA) during supervision visits. ➤ <u>Frequency:</u> 	No cross-connections identified between storm water drains and process / sanitary wastewater system during inspections. Drains, gratings, sediment traps and oil separators functioning and not	Covered under regular facility O&M budget (labor for inspection and cleaning; minor repair and replacement of drainage elements).

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ○ Grade outdoor areas so that runoff from raw-milk reception, loading bays, waste storage and chemical storage flows to contained collection points connected to the biogas system, not to open ground or wadis. ○ Use curbs, sumps or grated trenches at loading bays and waste areas to capture potentially contaminated runoff. ➤ Flood-risk reduction and maintenance: <ul style="list-style-type: none"> ○ Size storm water drains, gutters and downpipes for local design storms; check and clean them periodically, and after heavy rains, to prevent blockages. ○ Avoid storing pallets, waste containers or materials on top of drains or in a way that obstructs flow. ➤ Inspection and record-keeping: <ul style="list-style-type: none"> ○ Include storm water management in routine E&S inspections (e.g. before rainy season), using a simple checklist covering cleanliness of drains, evidence of standing water, erosion and any visible contamination. ○ Record findings, corrective actions and any complaints related to runoff or storm water in the E&S monitoring log. 	<ul style="list-style-type: none"> observe yard and access areas for ponding, flow paths and signs of contaminated runoff (milk residues, foam, discoloration, strong detergents odor) and confirm that flows are directed to the intended storm water inlets. 		<ul style="list-style-type: none"> ➤ Routine inspection of storm water drainage and yard conditions: bi-annual. ➤ Observation during or just after major storm events: as events occur. 	<p>persistently blocked at time of inspection.</p> <p>No recurring ponding or uncontrolled surface runoff within the factory yard that disrupts operations or creates slip hazards.</p>	
<p>Energy, Water, and Utilities Use</p> <ul style="list-style-type: none"> ➤ High water consumption in processes and cleaning: ➤ High energy demand for heating and cooling 	<ul style="list-style-type: none"> ➤ Resource-efficiency planning and monitoring: <ul style="list-style-type: none"> ➤ Develop a simple resource-efficiency plan for the artisanal dairy factory covering water, electricity and thermal energy, with clear responsibilities and annual targets (e.g. water and energy use per liter of milk processed). ➤ Install or confirm the availability of water and energy meters at factory inlet points and, where practical, for major uses (boiler, CIP, chillers, production areas); review consumption trends monthly and investigate significant deviations. ➤ Water-use efficiency: <ul style="list-style-type: none"> ➤ Implement water-saving measures in line with dairy-processing GIIP, including optimized CIP programs, use of high-pressure/low-volume cleaning nozzles, and reuse of relatively clean final-rinse water for pre-rinsing or yard washing through the recovery tank system. ➤ Conduct regular leak detection rounds (taps, hoses, pipes, valves, tanks) and promptly repair identified leaks; record findings and corrective actions. ➤ Coordinate abstraction from farm wells with overall site water-resource management to ensure withdrawals remain within permitted volumes and do not adversely affect neighboring users. 	<ul style="list-style-type: none"> ➤ Record monthly readings from main water and electricity meters for the artisanal dairy factory and calculate specific consumption (m³ of water and kWh per liter of milk processed). ➤ Where sub-meters are installed (boiler, CIP, chillers, refrigeration, main production board), record monthly sub-meter readings and review distribution of energy and water use between major consumers. 	<p>Artisanal Dairy Factory Manager.</p> <p>Utilities / Maintenance Team</p>	<ul style="list-style-type: none"> ➤ Al Jebrini / Al Motawaset E&S Focal Point, in coordination with the Factory Manager and Utilities Team. ➤ F4J III E&S Specialist during periodic supervision missions. ➤ <u>Frequency:</u> Meter readings and basic analysis: monthly. ➤ Review of maintenance logs and resource- 	<p>Specific water use (m³ of water per liter of milk processed) stable or decreasing over time, in line with internal targets and without unexplained spikes.</p> <p>Specific energy use (kWh per liter of milk processed) stable or decreasing, with no sustained upward trend not justified by production mix.</p> <p>Boilers, chillers, compressors and</p>	<p>Installing small set of submetering devices for major equipment (boiler, CIP, chillers, with around 5 units) is around 7000\$.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ Energy-efficiency measures: Use high-efficiency motors and pumps for major drives (CIP pumps, chilled-water pumps, compressors, fans), with variable-frequency drives where appropriate to match load to demand. ➤ Ensure good thermal insulation of boilers, steam and hot-water lines, pasteurization equipment and hot product tanks; maintain door seals and insulation on refrigeration and cold-storage equipment. ➤ Optimize boiler and burner operation (combustion tuning, blowdown control, condensate recovery where feasible) and maintain appropriate setpoints for pasteurization and hot-water systems, avoiding excessive temperatures and run-times. ➤ Implement heat-recovery opportunities where practicable (for example using hot water from pasteurization or CIP for pre-heating incoming water). 	<ul style="list-style-type: none"> ➤ Keep preventive maintenance logs for boilers, burners, chillers, compressors, pumps and other key utilities, including insulation checks and repairs ➤ Review resource-efficiency plan and targets annually, comparing actual specific consumption with targets and with previous years; record any corrective or improvement measures adopted (e.g. CIP optimization, nozzle replacement, heat-recovery measures). 		<ul style="list-style-type: none"> efficiency targets: quarterly, with a consolidated review annually. 	<ul style="list-style-type: none"> other key utilities serviced according to the preventive maintenance schedule (no major breakdowns attributable to lack of maintenance). 	
Labor Rights and Working Conditions <ul style="list-style-type: none"> ➤ Noncompliance to Labor Rights (PLL, minimum wage) and ESS2 ➤ Lack of valid injury insurance 	<ul style="list-style-type: none"> ➤ Fair and lawful employment terms: Ensure that all direct and contracted workers receive written employment contracts, in Arabic, that clearly describe job title, duties, working hours, overtime arrangements, wages and benefits, probation, leave entitlements and conditions for termination. Contracts will comply with the Palestinian Labor Law and the objectives of ESS2 on working conditions, protection of the workforce and fair treatment. ➤ Minimum wage, working hours and benefits: Maintain procedures to verify that wages (including overtime and allowances) for all categories of workers meet or exceed the applicable minimum wage and are paid regularly and in full. Keep timesheets and payroll records, including overtime, and ensure compliance with legal limits on working hours, rest breaks and weekly days of rest, including for shift and night work. 	<ul style="list-style-type: none"> ➤ Verification of workers' contracts and compliance with PLL & minimum wage requirements (Act No. 4, 2021). ➤ Verification of valid injury insurance for all workers. ➤ Regular checks on the functioning and effectiveness of the Grievance Mechanism. ➤ Documentation and review of E&S 	Al Jebrini/ Al Motawaset HR Department	<ul style="list-style-type: none"> ➤ Al Jebrini / Al Motawaset E&S focal points ○ <u>Frequency:</u> Contract, payroll, insurance and GM review: quarterly or as needed. ○ GM noticeboard check: monthly. ○ Comprehensive review of labor- 	<ul style="list-style-type: none"> -Workers' contracts comply with PLL. - Pay slips confirm minimum wage adherence. - Valid insurance for all workers documented. - GM is accessible, effective, and utilized. 	<ul style="list-style-type: none"> medical examination estimated at \$50 per worker every 2 years, estimated at 2500\$ annually. Training cost estimated at 600\$ per session.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
<ul style="list-style-type: none"> ➤ Lack of effective grievance mechanism ➤ Lack of worker awareness on E&S responsibilities, rights, grievance mechanism ➤ Non-compliance with required medical examinations ➤ Quality of welfare facilities and amenities 	<ul style="list-style-type: none"> ➤ Insurance: Ensure that all eligible workers, including temporary and seasonal workers, are registered in the applicable health and injury insurance. Maintain up-to-date records of workers' coverage and premium payments, and include verification of coverage in internal audits and during recruitment. ➤ Code of Conduct (CoC): Roll out and enforce a CoC for all categories of workers (including contractors and drivers) that sets out expected standards of behavior, respect for co-workers and community members, zero tolerance for SEA/SH, child labor and forced labor, and compliance with OHS requirements. The CoC to be used is the one recommended under the F4JIII Project ESMF and annexed to this ESIA (Annex I). Require signing of the CoC on hiring and provide regular refresher briefings. ➤ Workers' grievance mechanism (GM) and worker voice: Maintain and publicize a dedicated workers' GM that is confidential, accessible to all workers (including women, young and contracted workers) and allows anonymous complaints. Provide multiple channels (verbal, written, phone, suggestion boxes) and ensure that grievances are registered, acknowledged, assessed and closed within defined timeframes, with no retaliation. Integrate SEA/SH-sensitive procedures and referral pathways as described in Annex III. Facilitate regular meetings between management and worker representatives to discuss working conditions and follow up on GM trends. ➤ Training and awareness on labor rights and E&S responsibilities: Provide induction and periodic training for all workers and supervisors on the CoC, labor rights and obligations, non-discrimination and harassment, OHS and ERP, GM access, and key ESMP requirements relevant to their tasks. Keep attendance logs and training materials on file and include targeted sessions for women workers and shift workers as needed. ➤ Medical examinations and fitness for work: Implement initial medical examinations for all new workers and periodic examinations at least every two years, in line with Cabinet Decisions No. 22 and 24 of 2003 for this type of industry. ➤ Working conditions and welfare facilities: Provide and maintain adequate welfare and sanitary facilities, including clean gender-segregated toilets and changing rooms, handwashing points, rest and prayer areas, and safe drinking water. Ensure these facilities are accessible for women and persons with disabilities as far as 	<ul style="list-style-type: none"> ➤ orientation training attendance sheets and training logs. ➤ Periodic reviews of medical examination logs and medical certificates. ➤ Regular checks of signed CoC records. 		<ul style="list-style-type: none"> rights compliance (including medical examinations): annually or following any serious incident or audit finding. 	<ul style="list-style-type: none"> -Orientation training and CoC documented. -Medical examination compliance documented 	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> practicable, and that cleaning and maintenance schedules are implemented and documented. ➤ Recruitment and employment practices: Conduct recruitment in a transparent, documented and merit-based manner, including public vacancy announcements where appropriate, objective selection criteria and documented scoring. Prohibit the use of child labor. Keep personnel files that include proof of age, contracts, job descriptions and records of disciplinary measures, ensuring that any disciplinary action is proportionate, lawful and documented. 					
<p>Gender Based Violence</p> <ul style="list-style-type: none"> ➤ Sexual Exploitation, Abuse and Harassment (SEA/SH): ➤ Discrimination and unequal treatment: ➤ Exclusion from leadership and decision-making: ➤ Under-reporting, retaliation and stigma 	<ul style="list-style-type: none"> ➤ SEA/ SH Responsibility: Designate a senior manager as GBV/SEA/SH focal point, supported by at least one female focal point at factory level. ➤ Code of Conduct (CoC) ➤ Adopt and apply the CoC for all categories of workers (direct, contracted, third party), including explicit prohibitions on SEA/SH, discrimination, harassment, bullying and retaliation, and clear disciplinary sanctions up to and including dismissal. ➤ Require all workers to sign the CoC before starting work and re-confirm annually; keep signed copies in personnel files. ➤ GBV-sensitive workers' grievance mechanism and referral pathways ➤ Integrate specific GBV and SEA/SH provisions in the workers' GM, with multiple confidential uptake channels (for example sealed boxes, hotline, verbal reporting to trained male and female focal points) that do not require the survivor to confront the alleged perpetrator. ➤ Establish and disseminate a written, survivor-centered referral pathway for SEA/SH cases, including available local services for health care, psychosocial support, legal aid and protection, in line with World Bank GBV good practice. ➤ Include explicit guarantees of non-retaliation and confidentiality in the GM procedures and train all supervisors and focal points on their implementation. ➤ Capacity building and training ➤ Provide mandatory induction and regular refresher training for all workers, supervisors and managers on CoC provisions, GBV and SEA/SH definitions, unacceptable behaviors, by-stander responsibilities, use of the GM, confidentiality and non-retaliation. ➤ Provide dedicated sessions for women workers on their labor rights, equal opportunity provisions, the workers' GM and the SEA/SH referral options inside and outside the company. 	<ul style="list-style-type: none"> ➤ Verify signed Code of Conduct for each worker. ➤ Verify functionality and usage of Workers' GM. ➤ Verify trainings including attendance sheets, photo logs, and training material ➤ Verify functionality and availability of GBV Referral pathways. 	<p>Al Jebrini/ AI Motawaset HR Department</p> <p>E&S Focal Point</p>	<ul style="list-style-type: none"> ➤ Al Jebrini/ AI Motawaset Management ➤ Al Jebrini / AI Motawaset Human Resources Department ➤ <u>Frequency:</u> Quarterly or as required 	<ul style="list-style-type: none"> - 100% of workers trained and signed CoC; - Zero unresolved GBV incidents or complaints. - 100% worker participation in GBV training and CoC adherence. 	<p>Training sessions are covered under general E&S orientation training budget (~600 USD per session for hospitality, printing, trainer cost, and miscellaneous expenses). No additional</p> <p>Female-workers specific training cost ~ 600\$ per session with same items as above.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ Gender-responsive HR management and equal opportunity ➤ Adopt and enforce a non-discrimination and equal opportunity policy covering recruitment, job assignment, access to training, promotion, pay and benefits, in line with ESS2. ➤ Ensure that employment, promotions, salary increases and access to overtime are based on transparent, documented merit and performance criteria, not on gender or other personal characteristics. ➤ Where feasible, set progressive targets for increasing women's representation in supervisory, technical and decision-making roles. ➤ Safe and respectful workplace and facilities: Ensure adequate, clean and secure welfare facilities, including segregated and lockable toilets and changing rooms where appropriate, safe and well-lit access routes, and safe break areas for women and men. 					
Fire and Life Safety Hazards and Risks <ul style="list-style-type: none"> ➤ Machinery overheating and malfunctioning ➤ Electrical faults in production and utility systems ➤ Smoking and ignition sources near storage and waste collection areas: ➤ Accumulation and storage of combustible packaging and waste: ➤ Inadequate operation and 	<ul style="list-style-type: none"> ➤ Machinery and electrical fire prevention <ul style="list-style-type: none"> ○ Implement a preventive maintenance program for all production lines, compressors, refrigeration units, boilers and electrical installations, including regular inspection for overheating, abnormal vibration, damaged insulation and loose connections. ○ Keep machinery within manufacturer operating limits, including load, temperature and duty cycle; install automatic cut-out or interlock protection were provided by the manufacturer. ○ Prohibit use of improvised electrical connections, overloading of sockets and use of non-industrial extension cords in production and storage areas. ➤ Control of ignition sources, smoking and hot work <ul style="list-style-type: none"> ○ Enforce a strict no-smoking policy inside buildings, in packaging and waste storage areas, and near fuel or chemical storage. Provide a clearly marked, safe smoking area outside the production buildings, equipped with metal ashtrays and sand buckets. ○ Apply a hot-work permit system for welding, cutting and grinding, including pre-work area inspection, provision of fire watch during and after work, and confirmation that suitable extinguishers are available. ➤ Management of combustible materials and waste <ul style="list-style-type: none"> ○ Store cartons, plastic film, pallets and other combustible packaging in designated, well-ventilated areas away from 	<ul style="list-style-type: none"> ➤ Regular checks and inspection on temperature control and working environment. ➤ records of housekeeping ➤ Records of any fire accident 	Contractors (supervised by Al Jebrini/ Motawaset's OHS Supervisor)	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset E&S Focal Points; ➤ Civil Defense ➤ <u>Frequency:</u> Weekly inspections during installation activities. 	<ul style="list-style-type: none"> - Zero incidents of faulty wiring, loose connections, or overheating detected -No incidents reported -Monitoring and inspection schedule fully implemented 	No additional Budgetary Requirements

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
maintenance of life and fire safety systems: > Obstructed emergency exits and evacuation routes	heat sources, electrical panels and exits, with clear separation distances and maximum stack heights. <ul style="list-style-type: none"> ○ Implement daily housekeeping to prevent accumulation of dust, packaging and process waste in production areas, corridors and around electrical equipment. ○ Collect combustible waste (cartons, plastics, off-spec packaging) in closed, labelled containers and transfer at least daily to a designated external waste area with adequate separation from buildings and boundary walls. > Fire detection, alarm and suppression systems <ul style="list-style-type: none"> ○ Install and maintain appropriate fire detection and alarm systems (manual call points, sirens and, where feasible, smoke or heat detectors) so that alarms are audible throughout production, storage, office and welfare areas. ○ Provide an adequate number and type of portable fire extinguishers and, where required by the Civil Defense, hose reels or hydrants; ensure they are clearly marked, unobstructed and inspected at least monthly, with annual servicing by a certified company. ○ Maintain a register of all fire protection equipment, including inspection dates, defects identified and corrective actions taken. > Emergency evacuation <ul style="list-style-type: none"> ○ Ensure that emergency exits, stairways and escape routes are sufficient in number, clearly marked with illuminated signage, equipped with emergency lighting and kept free of obstructions at all times. ○ Post simple evacuation maps in production, storage and office areas, indicating escape routes, assembly points and locations of fire equipment. > Training and awareness <ul style="list-style-type: none"> ○ Provide induction and periodic refresher training for all workers, including contracted staff, on fire prevention, safe use of electrical equipment, housekeeping requirements, no-smoking rules, emergency alarms, evacuation procedures and use of portable extinguishers by designated staff. ○ Record all training sessions, participants and topics covered, and include fire safety in routine toolbox talks and supervision checks. 					

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
Community Health and Safety <ul style="list-style-type: none"> ➤ Inadequate Stakeholder Engagement ➤ Risks from potential fires and emergency situations during installation works. 	<ul style="list-style-type: none"> ➤ Stakeholder Engagement and Information Disclosure: Maintain regular stakeholder engagement with nearby residents, local authorities and other interested parties, in line with ESS10 and the F4J III SEP. ➤ Maintain records and logs of stakeholder engagement activities, documenting participants, issues raised, and responses and follow-up actions. ➤ Disclose project information, including key E&S mitigation measures, clearly and proactively to local communities and affected stakeholders in Arabic, using accessible formats and channels (for example notice boards at the site entrance, municipal announcements or social media). ➤ Ensure communities are aware of the company's external grievance mechanism, including uptake channels and response timelines. ➤ Fire and Emergency Preparedness: Implement the measures in point VII. ➤ Signage: Ensure adequate and marked emergency exits throughout the facilities, with regular inspections and maintenance, and a clear project information board. 	<ul style="list-style-type: none"> ➤ Review records and logs of stakeholder engagement and information disclosure. ➤ Review ERP availability. ➤ Verify records and logs for the fire and emergency response training for workers ➤ Visual inspection of signs availability. 	Al Jebrini / Al Motawaset Management	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset E&S Focal Points ➤ Civil Defense ➤ <u>Frequency:</u> Stakeholder Engagement at least annually, ➤ site visits and checks to be done quarterly 	<ul style="list-style-type: none"> - Zero community complaints related to lack of communication or inadequate consultation. -All key project and E&S documents disclosed in Arabic through appropriate channels. -ERP implementation records and emergency drill evaluations completed. -all emergency exits accessible and clearly marked 	Cost for signage and information board ~ 500\$.
Occupational Health and Safety <ul style="list-style-type: none"> ➤ Physical hazards in production, packaging and utilities: ➤ Lifting, repetitive work 	<ul style="list-style-type: none"> ➤ OHS Plan and legal compliance: Implement the company OHS Plan and CAP measures for the artisanal dairy factory, aligning with Palestinian OHS legislation (including Law No. 3 of 2019 and related MoL decisions), ESS2, and the General and Dairy Processing EHS Guidelines. ➤ Periodic E&S and OHS reporting and incident monitoring: Include artisanal dairy OHS aspects (inspections, trainings, incidents, corrective actions) in periodic E&S reports; maintain a register of near misses, injuries and occupational illnesses and investigate all lost-time incidents and significant near misses with documented preventive actions. 	<ul style="list-style-type: none"> ➤ Regular inspections of PPE availability and usage. ➤ OHS toolbox meeting and reports documentation review. ➤ Availability of incident and accident log. ➤ Availability of first aid kits. 	Al Jebrini/ Al Motawaset's OHS Supervisor	<ul style="list-style-type: none"> ➤ Al Jebrini/ Al Motawaset E&S Focal Points; MoL. ○ <u>Frequency:</u> Frequency: Quarterly or as required 	<ul style="list-style-type: none"> - No near miss accidents or injuries recorded -Workers' adherence to PPE protocols. 	<ul style="list-style-type: none"> Cost of PPEs range around 50\$ per worker, with a total of 2500\$. First aid kits cost ~ 150\$, with 3 needed, with a total of 450\$.

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
<ul style="list-style-type: none"> ➤ and ergonomic strain ➤ Thermal stress, heat and cold exposure ➤ Biological and chemical exposure related to dairy processing: ➤ Traffic and workplace organization risks: ➤ OHS management capacity and compliance with national legislation 	<ul style="list-style-type: none"> ➤ OHS Capacity Building: The OHS supervisor shall conduct continuous OHS trainings and awareness to workers, which is part of the role of the OHS supervisors in line with Law. No 3 of 2019. This includes regular OHS training sessions, drills, and awareness campaigns to maintain high safety standards. ➤ OHS Risk Assessment: Implement a thorough risk assessment process to identify potential hazards associated with loading/unloading, machinery operation, and chemical handling and other operational processes. ➤ OHS Control Measures: Ensure effective control measures are in place, such as engineering controls, administrative controls, and the use of personal protective equipment (PPE). ➤ Medical Examinations: in line with Decision of Council of Ministers No. (22) of 2003 on Initial medical examinations of workers and Decision of Council of Ministers No. (24) of 2003 on conducting periodic medical checkups for workers, workers in the dairy industry, as it is categorized in relevance to medical checkups a non-hazardous industry, are to undergo medical checkups every two years. ➤ Physical hazard control, guarding and maintenance: Ensure all mixers, pumps, pasteurizers, filling and packaging equipment, conveyors and utilities have appropriate fixed guards, interlocks and emergency stop buttons; prohibit bypassing of safeguards; require lock-out/tag-out and verification of zero energy before maintenance or cleaning; keep tools and maintenance equipment in good condition. ➤ Thermal stress management (heat and cold): Insulate hot surfaces (steam lines, pasteurizers, boilers) and cold-room doors, ensure adequate ventilation, and provide appropriate thermal PPE (heat-resistant gloves, aprons, insulated clothing); limit exposure time in high-heat or low-temperature areas through job rotation and scheduled breaks, and provide access to drinking water and warm/cold rest areas as appropriate. ➤ Control of biological and chemical exposure: Minimize aerosol- and dust-generating activities (e.g. avoid unnecessary use of compressed air or high-pressure water for cleaning); ensure local or general ventilation in areas where CIP chemicals, detergents, disinfectants and boiler chemicals are handled; provide waterproof and chemical-resistant gloves, aprons and eye/face protection; separate work and welfare facilities and strictly 	<ul style="list-style-type: none"> ➤ Housekeeping monitoring ➤ Inspection tours and visits ➤ Review records of medical examinations 			<ul style="list-style-type: none"> -Adequately documented OHS training logs and toolbox meetings. -Documented accidents investigations and preventive actions. -Medical records of employees 	

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
	<ul style="list-style-type: none"> ➤ prohibit eating, drinking or smoking in production areas; avoid direct skin contact with non-conforming products and dairy waste. ➤ PPE provision and compliance: Provide workers free of charge with task-appropriate PPE including safety shoes, work clothing/coveralls, cut-resistant and chemical-resistant gloves, hairnets, masks/respirators where needed, eye and face protection and hearing protection in noisy areas; establish rules for proper use, cleaning, replacement and storage of PPE and enforce compliance through supervision and, where necessary, disciplinary measures. ➤ Warning Signs and Emergency Numbers: Install emergency numbers and warning signs around the facility in line with Civil Defense requirements. ➤ Housekeeping and slips/trips prevention: Maintain good housekeeping in production, utilities, corridors and storage areas; keep floors clean, dry and free of obstacles; promptly clean spills using appropriate methods; use non-slip floor finishes and/or anti-slip footwear; demarcate walkways and transport corridors and keep emergency exits, electrical panels and firefighting equipment unobstructed at all times. ➤ First Aid: Provide first aid kits on the site, ensure that kits are provided in adequate numbers per worker and that they are always accessible and in good condition at all times. ➤ Medical Facilities: Coordinate and locate the nearest medical facility/ hospital to the site. Numbers of first aid response services shall be circulated to workers. ➤ Traffic Safety: Clearing the site when reversing vehicles for loading/unloading activities. ➤ Accident Response: update the worker injury log and establish a framework for the investigation of incidents and accidents, timeframe for preventive actions, and reporting structures and logs. ➤ Maintenance: establish a maintenance log for all systems, including HVAC, filters, and machinery and equipment to avoid any OHS incidents resulting from faults. 					
Food Safety and Hygiene	<ul style="list-style-type: none"> ➤ Implement stringent protocols for receiving, handling, washing, and storage of raw ingredients. ➤ Maintain appropriate temperature control and humidity management for storage areas. ➤ Conduct periodic microbiological testing of raw materials to detect and address contamination risks promptly. 	<ul style="list-style-type: none"> ➤ Inspect the storage places ➤ Quality control tests results 	Al Jebrini / Al Motawaset Production Manager	<ul style="list-style-type: none"> ➤ Al Jebrini / Al Motawaset's E&S Focal Points ➤ MoH 	No cross-contamination incidents documented.	Hire a food safety and hygiene / Quality control officer (agricultural / food quality

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implement-ation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
<ul style="list-style-type: none"> ➤ Microbial risks from raw materials handling. ➤ Improper storage conditions. ➤ Hygiene and cleanliness issues in production areas and machinery. ➤ Poor worker hygiene compliance. ➤ Lack of detailed hygiene procedures for new products. ➤ Non-Compliance to Specifications and Guidelines on Food Production ➤ Labeling and traceability deficiencies. ➤ Temperature risks during sensitive 	<ul style="list-style-type: none"> ➤ Conduct regular inspections and preventive maintenance of refrigeration and cold storage equipment. ➤ Maintain daily logs of temperature and humidity conditions in cold storage units. ➤ Implement comprehensive daily and weekly sanitation schedules for production areas and machinery. ➤ Use food-grade, safe cleaning agents and strictly monitor their dilution and removal. ➤ Enforce strict compliance with PPE (gloves, hairnets, masks, gowns) and hygiene protocols, including mandatory handwashing before entering production areas. ➤ Provide hygiene training periodically, clearly documenting attendance, dates, and training content. ➤ Conduct regular hygiene audits and spot checks to monitor compliance, with immediate corrective actions for non-compliance incidents. ➤ Ensure compliance to national standards issued by PSI and good industry practices in food production. ➤ Maintain record-keeping and batch traceability systems to allow rapid identification and recall of products if contamination is identified. ➤ Conduct daily batch testing and ensure documentation, benchmarking against PSI standards, and GIIP including FSSC 22000 and Codex Alimentarius. 	<ul style="list-style-type: none"> ➤ Documentation of training sessions. ➤ Records of quality tests for all batches 	<p>Food Safety and Hygiene Officer</p> <p>Quality Control Manager</p>	<ul style="list-style-type: none"> ➤ <u>Frequency</u>: Daily internal monitoring and documentation. ➤ Periodic external monitoring (quarterly). 	<ul style="list-style-type: none"> - Documented compliance with hygiene procedures and worker training. - Effective labeling and batch traceability maintained. Quality control logs maintained daily, with corrective actions documented and implemented promptly. 	<p>engineer) with an estimated monthly salary of 1500\$ per month, and a total annual of 18,000\$.</p>

Parameters And Impacts	Mitigation Measures	Monitoring Measures	Implementation Responsibility	Monitoring Responsibility & Frequency	Success Indicators	Budgetary Requirements
Operation and Maintenance Phase (Artisanal Dairy Factory)						
production steps. ➤ Insufficient quality control testing.						

D. COW FARMS EXPANSION AND DAIRY FACTORY ESMPS BUDGETERY REQUIREMENTS

Table 20: Cow Farms Expansion and Dairy Factory ESMPS Implementation Budgetary Requirements

Subproject / Phase	Action	Cost (USD)	Frequency / QTY	Total Cost (USD)	
1. Cow Farms Expansion Subproject					
1.1. Operation and Maintenance	Soil and water sampling and analysis (annual)	2000	1	2000	
	PPEs	50	10	500	
	OHS Training	300	2	600	
Total for Cow Farms Expansion Subproject				3100	
2. Artisanal Dairy Factory Subproject					
2.1. Finishing Works and Installation Phase	Similar cost to the Plastic factory's finishing works and installation phase	850		850	
	Onsite wastewater treatment system/ unit	50,000	1	50,000	
TOTAL FOR PHASE				50,850	
2.2. Operations and Maintenance Phase	Noise measurement device	150	1	150	
	Lockable spoiled products container	500	2	1000	
	E&S Capacity Building	600	1	600	
	Spill kit	100	1	100	
	wastewater meter	3000	1	3000	
	wastewater testing	200	12	2400	
	electricity submetering	1400	5	7000	
	medical examinations	50	25	2500	
	GBV and female workers training	600	1	600	
	Signage and information board	500		500	
	PPEs	50	25	2500	
	first aid kit	150	3	450	
	Food Safety and Hygiene Officer	1500	12	18000	
	Operational Cost for the OWTS			10,000	3 years
TOTAL FOR PHASE				68,800	
Total for Artisanal Dairy Factory Subproject				119,650	
GRAND TOTAL (USD)				122,750	

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