Food and Agriculture Organization of the United Nations

REPUBLIC OF YEMEN

MINISTRY OF AGRICULTURE AND IRRIGATION

YEMEN DESERT LOCUST RESPONSE PROJECT (YDLRP)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

18 March 2021

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ACRONYMS AND ABBREVIATIONS

4WD	Four-wheel drive
ARDU	Agriculture and Rural Development Unit
CBO	Community-based organization
CBY	Central Bank of Yemen
CDLCC	Central Desert Locust Control Center
CFW	Cash for Work
COVID-19	Coronavirus Disease 2019
DLCC	Desert Locust Control Center
DPP	Directorate of Plan Protection (under MAI)
ECSP	Environmental and Social Commitment Plan
ESMF	Environmental and Social Management Framework
ESF	Environmental and Social Framework of the World Bank
EPA	Environment Protection Agency
FAO	Food and Agriculture Organization of the United Nations
FCV	Fragility, Conflict and Violence
GBV	Gender-based violence
GRM	Grievance redress mechanism
GRS	Grievance Redress System
ha	Hectares
IDA	International Development Association
IFC	International Finance Corporation
IPF	Investment Project Financing (instrument)
LMP	Labor Management Procedures
MAI	Ministry of Agriculture and Irrigation
M&E	Monitoring and Evaluation
MPA	Multiphase Programmatic Approach
MTR	Mid-Term Review

NGO	Non-governmental organization
NPMS	National Pest Management Strategy
PDO	Project Development Objective
PCU	Project Coordination Unit
POA	Plan of Action
POM	Project Operational Manual
PPE	Personal Protective Equipment
PSGT	Project Safeguards and Gender Team
PIT	Project Implementing Team
SAPREP	Smallholder Agriculture Restoration and Enhancement Project
SFD	Social Fund for Development
SWF	Social Welfare Fund
TOR	Terms of reference
TOT	Training-of-trainers
TPM	Third-party monitoring
TPMA	Third-party monitoring agency
ULV	Ultra-low volume (sprayer)
UN	United Nations
UNDP	United Nations Development Programme
WFP	World Food Programme

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EXECUTIVE SUMMARY

The "Yemen Desert Locust Response Project - YDLRP" has been developed for the Government of Yemen by the Food and Agricultural Organization (FAO), as the YDLRP implementing entity with the view to effectively tackle the looming desert locust swarms' plight that is seriously threatening the sylvoagricultural productivity and livelihood resources of millions of Yemeni. The Project is been funded by the World Bank and technically supported and implemented by the FAO for a duration of three years.

The main development objective of the Yemen Desert Locus Response Project (hereafter the Project or YDLRP) is to control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations. Its expected outcome is to foster a (i) much stringent response mechanism to the locust infestation outbreak that encompasses improved locust surveillance, monitoring, and control activities; (ii) livelihood support focuses on protection and restoration in the locust-affected areas; and, (iii) strengthened national preparedness systems that includes three main elements, namely (a) establishing a network of DLCCs, (b) establishing an early response system, and (c) connecting Yemeni systems with regional networks to exchange information and data and improve coordination of the locust response. To achieve this project will be delivered through three components:

Component 1: Surveillance and Control Measures

The objective of this component is to limit the growth and spread (driven by climate change) of current desert locust populations, while mitigating the risks associated with control measures and their impacts on human health and the environment. The component will be implemented through following subcomponents:

(i) Continuous surveillance;
(ii) Control measures;
(iii) Risk reduction and management;

Component 2: Livelihood Protection and Rehabilitation

Component 2 is designed to provide a robust protection response that ensures immediate relief to affected farmers and livestock owners and build their resilience to climate-induced locust infestation. Component will be implemented through following subcomponents:

(i) Safeguarding food security and protecting human capital for enhanced resilience;
(ii) Rehabilitating agricultural and pastoral livelihoods;

Component 3: Coordination and Early Warning Preparedness

The objective of Component 3 is to strengthen national capacity for early warning and early response, linking these efforts to regional locust surveillance and control networks thereby enhancing climate-resilience. The component will be implemented though following subcomponents:

(i) Improving the infrastructure and institutional capacity of the national locust control centers;

(ii) Early warning preparedness;

The preliminary screening of the YDLRP proposed activities revealed that the Environmental and Social Risk Rating for the Yemen Desert Locust Response Project is "**Substantial**" largely due to the increase usage and spray of pesticides throughout the country, in addition to the difficult FCV context within which the project is going to be implemented during these 3 years (2020-2023). Although this project is expected to have greater environmental and social benefits than adverse environmental and social impacts, nonetheless, some potential environmental and social risks and impacts might be caused by the implementation of some interventions under some components.

Specifically, activities that will be financed under Component 1.2 "*Improving control measures*" that will support, inter alia, the procurement and application of pesticides and bio-pesticides. The main potential environmental and social risks, opportunities and impacts are associated with: (i) the procurement, transport, handling, storage of the pesticides, dosage during treatment and disposal of empty pesticide containers; (ii) the risk of polluting ecologically sensitive habitats such as wetlands, national parks, protected areas and water bodies; (iii) risks of contaminating pasture, local water sources and sensitive agronomical areas and, (iv) risks of poisoning and contamination of field officers who are directly involved in handling and spraying operations, as well as communities who might be exposed to the sprayed pesticides in the nature/open air .

As stated above, overall, the project will bring environmental andsocial benefits. However, the YDLRP equally carries on some Environment (biophysical and human) and social adverse impacts in the project intervention areas.

Consistently with prescriptions in both the World Bank and FAO social and environmental safeguards standards and policies, and applicable Yemeni social and environmental management regulations (i.e. environmental and social impacts assessment procedures), this Environmental and Social Management Framework (ESMF) is formulated to allow the upfront management/safeguarding of environmental and social aspects of a given project whose physical footprints (i.e. targeted sites, components or subcomponents, etc.) are yet to be known. The Framework will reflect on the country context with special focus on conditions governing the environmental and social (E&S) risks. Furthermore, the document will outline the processes followed, through stakeholder engagements, to identify and address the potential E&S risks prior to and during the project implementation. Grievence Redress Mechanisms have been described in detail as they will require PMU special attention due to the substantial risks identified under the project.

The project has adopted eight of the ten environmental and social safeguards standards of the World Bank, namely ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8 and ESS10 in compliance with the prerequisites set forth in these ESSs of the new environmental and social management framework (ESF) enforced as of October 1st, 2018. However, it is recognized that such environmental, social, as well as GBV risks and impacts can accrue into much larger risks and impacts if they are not identified early enough during the design and planning stages and if their mitigation measures are not integrated into project planning and implementation. Moreover, because at this very juncture detailed footprints of project areas are not identified yet, prescriptions of the new ESF suggest the use of a framework approach to enable the project to move forward.

Consistently with relevant ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, EESS8 and ESS10 core principles and requirements, to effectively address and manage any potential adverse risks and impacts, and to ensure that environmental and social management is adequately integrated into the development cycle of individual sub-projects, the project already developed series of stand-alone environmental and social safeguards instruments as stated in the project Environmental and Social Commitment Plan (ESCP), namely an Environmental and Social Management Framework (ESMF) that includes (i) a Social Impact Assessment (SIA), (ii) a Community Health, Safety and Security Action Plan (CHSSAP), and a (iii) GBV Action Plan (GBVAP); a Labor Management Procedures (LMP), a Stakeholders Engagement Plan (SEP), and Pest and Pesticides Management Plan (PPMP). Furthermore the project will develop a Resettlement Policy Framework (RPF). The ESS instruments will include screening tools to identify sub-projects that might have adverse environmental and social impacts, as well as health and safety impacts – that put forth the basic principles and prerogatives the project will follow during project implementation, once the detail footprints of project activities and sub-activities are clearly known; and based on the screening checklists results, site specific safeguards instruments may be developed, such as Environmental and Social Management Plan (ESMP) and/or specific contractors ESMP (C-ESMP), and wherever deemed needed, site-specific PPMPs and/or Resettlement Action Plans (RAPs).

From an institutional arrangement standpoint, the YDLR Project Management Unit (PMU), supported by FAO will be hosted at the national/central level in Sana'a, and will be responsible for the overall coordination of project activities, including with field-based environmental and social safeguards compliance. The SSSS and ESSS will be complemented by two GBV Assistants. In each region, Aden and Hodeida, there will be a team of 1 ESSO and 1 GBVO, hence making it to 4 of such specialists for the YDLRP. The three safeguards and GBV specialist and associates (1 ESSS and 2 GBVAs), fall under the overall leadership of the Sanaa based SSSS at the PMU level. The SSSS and the whole team will work closely with the WBG social and environmental safeguards teams to support the project.

Given the safeguards risk rating of the YDLRP and the ongoing conflict context in the country that may add some bottlenecks to the project implementation process, hence adding more visibility to the project, the FAO and through technical units, will assess the feasibility of consulting (when needed) an International and national Technical and Safeguards Compliance and Sustainability Consultants to advise and support both the Project Coordinator (PC) and the Senior Social Safeguard Specialist (SSSS) and Gender Team (PSGT) on overall (i) safeguards compliance, (ii) sustainable performance, (iii) quality assurance of all safeguards and sustainability performance documents of YDLRP prior to sharing them with the World Bank, and (iv) strengthen the technical capacity of and coach the PSGT throughout. As well, strong involvement of FAO ESM Unit at HQs will be guaranteed.

The SSS and the ESS, will work in tandem with both the National and each of the two Regional Environmental Protection Agencies Officer (NEPAO & REPAO) to ensure full consistency and compliance with applicable national legislations; as well as with the WBG Social Safeguards Specialist (WB-SSS) and WB Environmental Safeguards Specialists (WB-ESS) to ensure consistency with WBG and FAO safeguards standards and procedures throughout the project lifecycle..

As stated above, the PMU-based SSSS will work closely with ESSA and GBVAs in PITs and with the responsible for the day-to-day management (review, screening, preparation, implementation, monitoring, evaluation, and reporting) of all specific sub/components activities, as well as for ensuring compliance with the ESMF, as well as PMP, RPF and subsequent safeguards like the LMP, SEP, GBVAP,

GRM, Social Inclusion and Citizen Engagement documents, including keeping/recording proper documentation in the project file for possible review by the WBG and FAO's ESM-Rome team, whenever deemed necessary.

The FAO-led safeguards team will liaise with the SFD safeguards team responsible for the implementation of Component 2.2 (*livelihood restoration measures under Sub-component*) that is being implemented by SFD safeguards team. To ensure consistency throughout the lifespan of the project, both teams, alongside with other actors (government key agencies) will benefit from recurrent safeguards capacity building as well as GBV refresher courses to further enable the project teams to tangibly support the project endeavour to safeguards the project.

Moreover, the various stakeholder consultation and participation efforts revealed that beneficiary communities have a great consideration for the proposed project activities as they believe this will add more benefits for them and therefore, they all adhere to and welcome the project development vision and strategic approach, as it will greatly help to fight the plague of desert locust, enable communities to be more resilient to swarm invasion, climate change and other natural disaster calamities, while maximising the overall end-benefits for local and rural communities.

As clearly stated in the already disclosed project Environmental and Social Commitment Plan (ESCP),1, this document will remain a living document and thus subject to subsequent modifications and changes in line with the evolving situation or scope of the project activities, as allowed by the applicable ESF. Any of such changes will be de facto reflected in the ESCP. As an iterative process, ongoing consultations with stakeholders will be pursued and further deepened throughout the project lifespan; therefore, much closer participatory consultations with the WBG, FAO, GoY and formal clearance and public disclosure of this ESMF will be necessary.

The potential impacts and mitigation matrix for the Yemen Desert Locust Response Project are summarized in the below table.

[1] This is also function of the variation of the current Project Development Objective (PDO), which is susceptible of variation before/by the Effectiveness stage. Until then, the ESMF remains flexible and adaptable based on these occurring changes.

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
Component 1						
Procurement	Improper selection of pesticides	Environmental	Active ingredient should be listed among those pesticides, for which effective doses against the Desert Locust are verified by the Pesticide Referee Group (PRG). The pesticides to be used for Desert Locust control operations are Ultra-Low volume (ULV) formulation and should be registered in the recipient country (to be checked with the national registration authorities). Comply with FAO guidelines for selecting appropriate pesticides for locust control. The subcomponent will support the procurement of all material and equipment for the ground control operations of the Desert Locust, including: 4-WD pickup vehicles, pesticides and bio-pesticides (in accordance with the FAO Guidelines and the PRG recommendations), vehicle-mounted ULV sprayer equipment, backpack motorized ULV sprayers, Hand-Held ULV sprayers, pesticide pumps. The whole pesticide quantity will be used during the project; as a consequence, there will be no-left over at project completion.	FAO	Before the start of the first campaign	Integrated within project activities
Importation	Damage during shipment, leakage/spillage	Environmental	. FAO put in its technical specifications the characteristics of the drums it wishes (thick, resistant to chemical substances – following UN code-, sealed corks) as well as the arrangement of the drums, i.e. four drums per wooden	FAO & MAI	Inspection of the drums at the	Integrated within

			pallet (dimensions are specified), the four drums are wrapped together with plastic films to prevent the drums from bumping into each other during transport.		loading and unloading.	project activities
DL control operations	Fatigue associated social stress arising from pressure and long working hours for timely delivery of product	Social	Conduct rapid social impact assessment to enable formulation and implementation of livelihood restoration programmes during and following control of the locust	Control Team, MAI & FAO	During locust control campaign	Integrated within project activities
DL control operations	Expose people, aquatic and wildlife to intoxication	Environmental & Occupational Health	The response will take into account the conditions on the ground – for example, control areas with bodies of water will be avoided to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (when hand-held sprayers are used) to 1 500 m (in case of aerial spraying), and wells or water holes in the target area for treatment should always be covered. It is also recommended that beehives be moved away (at least 3 km) from the treated area. Human re-entry periods, livestock withholding periods and pre-harvesting crop intervals are strictly observed during anti-locust campaigns. Negative environmental impacts will be minimized by avoiding blanket spraying and conducting targeted control operations. Moreover, communities in general, and beekeepers in particular, will be alerted and sensitized before/during/post the planned control operations;	Control Team, MAI & FAO	During locust control campaign	Integrated within project activities
Transportation / distribution	Spillage and leakages, fumes' and fire. Spills if not cleaned or decanting and replacing	Environmental & Occupational Health	Pesticides should not be transported with any foodstuffs and should be covered and well labelled.	Drivers, MAI & FAO	Before and during Pesticides transportation	Integrated within project activities

	Lack of knowledge by pesticides drivers and distributors. Wrong transportation exposing products to human and environment. Insecurity & theft leading to loss of pesticides.		Drivers transporting pesticides should be trained on accident prevention and dealing with emergencies such as spillage or fire during transportation. Training of handlers and users (personnel) on safe use and management of pesticides. Further details in link to DL guidelines vol. 6 page 41: http://www.fao.org/ag/locusts/common/ecg/347_en_DLG6e.pdf Insurance clause should be integrated in procurement of pesticides and transportation agreement			
	Lack, uncompleted protective gear and absorbent materials	Occupational Health	Provision of personal protective equipment (PPE) to all pesticide handlers and users. Provision of medical diagnosis services for stakeholders to determine their contamination/ toxic levels and examining them for acute or chronic poisoning symptoms when such need arises.	MAI & FAO	During locust control campaign	Integrated within project activities
Storage	Poorly built store, lack of ventilation and floor space leading to containers wrongly stored,		Advocating for proper storage facility in terms of site and design.	MAI & FAO	Before, during and after locust control campaign	Integrated within project activities

	Spillage, corrosive containers. Prolonged storage of products causes caked formulations.		Further, adherence to the appropriate store management by applying the rule of the thumb i.e. first in first out and provision of right store equipment and materials to curtail or minimize store accidents, leakages and spillages. Safe storage of the pesticides in the proposed locations and controlled/ documented release of the pesticides. In each store, a bucket with sand, a shovel and resealable bags should be present. In the event of a pesticide spill, put sand on the liquid on the ground to absorb the pesticide, collect this sand and put it in a closed bag + decant the pesticide into an undamaged drum and label this new drum well.			
Handling	Improper use and spray of pesticides. Lack of protective gear. Improper labeling leading to wrong usage, cleaning of sprayers and equipment.	Human Health and Environmental	Handling and spraying will be made only by skilled staff to control locust, and never by farmers. Pesticide handling and spraying will be ensured in the respect of good practices, including respect of spraying parameters, buffer zones, protected areas, etc. Ensuring that all control staff are sufficiently trained to use the selected pesticides with minimum risk.	MAI & FAO	During locust control campaign	Integrated within project activities

			Refreshing training should be organized for safe use of pesticides; spraying operations and proper calibration of sprayers before the start of the control campaign. Training of all the persons to involved in spraying on safety and the provisions of this PMP. Ensuring that qualitative and sufficient PPE are available and that treatment agent wear them correctly. Ensuring that proper sprayer maintenance is carried out.			
Disposal	Disposal, spillage and left-over pesticide.	Human Health and Environmental	Adherence to FAO Guidelines on safe disposal of pesticide and empty containers. Provide the teams with pesticide drum cleaners and crushers. Designated officers should be deployed and capacitated to monitor and enforce the irregularities by monitoring stores making inspections advising on strict management, import control and quality control to ensure compliance to protect human health and environment.	MAI & FAO	During locust control campaign	Integrated within project activities

			Training of all the persons to involved in disposal on safety and the provisions of this PMP.			
	Improper disposal of empty containers through burning. Left overs in wrongly disposed containers cause persistence and lasting in soil.	Human Health and Environmental	Safe disposal of the empty (used) drums carrying the pesticides/immediately crushed.	MAI & FAO	During locust control campaign	Integrated within project activities
	Sex abuse from interaction of spray teams and the civilians in the villages	Social	Sensitization of involved government agencies on compliance with environmental and social safeguards with special emphasis to do no harm principle (sexual abuse, gender violence, inclusivity among others).	MAI & FAO	During locust control campaign	Integrated within project activities
	Loss of livelihood due to DL damage	Social	Awareness creation and communication activities to communities where spraying is carried out. Extension material and mass media campaigns will be prepared/ensured so that local populations adopt the required safety measures before, during and after treatments for themselves, their cattle and their crops. Training on surveillance and monitoring so that farmers and pastoralists can be part of the early warning which at the end will limit the impact of the DL infestations.	MAI & FAO	During locust control campaign	Integrated within project activities
	Low participation of the affected people (top-down	Social	Conduct rapid social impact assessment to enable formulation and implementation of livelihood restoration programmes during and following control of the locust.	Local authorities, MAI & FAO	During locust control campaign	Integrated within

	interventions) hampering feed backs					project activities
	Poisoned of staff / local population during handling and spraying operations either accidentally or during the normal course of their work.	Human Health and Environmental	Provision of medical diagnosis services for stakeholders to determine their contamination/ toxic levels and examining them for acute or chronic poisoning symptoms when such need arises. For field officers, to reduce risks of overexposure to chemical pesticides, all field officers and spray operators will be equipped with appropriate personal protective equipment and pumps to limit handling of chemicals. In addition, all operators will have access to the Materials Safety Data Sheet and relevant materials to contain and absorb accidental spills. Acetylcholinesterase kit will be delivered by the project. The Human Health and Environmental Monitoring Team can monitor the incidence of exposure to chemical pesticides (organophosphates) in the blood of the operators (before, during and after the anti-locust campaign) and thus to detect, evaluate and correct if needed, any negative effects (overexposure or poisoning). An assessment of control operations will be ensured by pesticide residue analysis in order to monitor impact of control operations on non-target organisms and to detect, evaluate and correct if needed, any side effects.	MAI & FAO	Before (baseline ChE level), during and after locust control campaign	Integrated within project activities

	Exposure to poison through consumption of contaminated food grown in sprayed areas	Human Health and Environmental	Promote awareness to ensure that communities respect the re-entry time for their livestock and withholding periods for their harvests. Avoid spraying near or around water bodies to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (ground spraying) to 1 500 m (aerial spraying), and wells or water holes in the target area for treatment should always be covered.	Local authorities, MAI & FAO	During locust control campaign	Integrated within project activities
	Lack of pesticide management	Environmental, Social and Human Health	Close monitoring on pesticide management will be ensured by FAO, together with specific reporting, i.e. monthly updates and end-of-campaign report.	MAI & FAO	During and after locust control campaign	Integrated within project activities
Components 2 & 3						
	Influence the flora cover, cutting trees and working in pastoral areas.	Environmental,	Avoid disturbing of flora cover and cutting trees near the rehabilitated/constructed structures. Avoid the works in the pastoral areas and maintain the flora and plant cover.	FAO / SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Construction / rehabilitation may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other	Environmental,	Use dust control measures onsite, such as water spraying for dust suppression; Regulate site access; Cover lorries transporting friable construction materials and spoil; Prohibit open air burning; Maintain machinery and vehicles in good working conditions to minimize emissions; and,	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities

	construction-related activities.		Vehicles and equipment must be maintained regularly to avoid any emissions;			
	Alteration or damaging natural habitat during construction/rehabilitation contamination may occur from onstructions materials, Run-off surface water obstacles and divert to cause other flooding hazards. Generation and improper dumping of construction / rehabilitation waste	Environmental	Avoiding damaging natural habitat during constructions or minimize it (proper site selection, use environmentally friendly materials, prepare materials off-site, etc.) Good practice in design to be observed. Collect generated solid waste and transport them to locally designated and authorized dump site Concrete mixing is to be undertaken on a hard surface All concrete waste is to be collected, recycled if possible, and removed from the site for disposal at an appropriate disposal site.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Soil Disturbance during rehabilitation/ construction	Environmental	The soil of the rehabilitated structures shall be removed properly to the inner side or near the site. Then it should be returned later after the completion of rehabilitation or transported to nearby adjacent land.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Erosion and sedimentation	Environmental	Soil removed through excavation should be used as back filling or immediately removed from the project to allocated disposal site. Construction should be avoided during periods of anticipated rainfall to prevent any soil erosion.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities

			On completion of construction, all leftover materials are to be removed from the site and disposed of, appropriately.			
	Landslide of soil	Environmental	Maintain technical approach to avoid landslides of soil Reduce the vertical slope angle to a void sudden collapse of soil mass Select an appropriate implementation mechanism (labour / machinery) accordance to the risk level identified by the engineer.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Accumulation of debris / sediments in the irrigation canals.	Environmental	Remove the sediments to the allocated locations Rebuild / backfill for the canal banks. Use the fertile clayey sediments for farms to enrich the soil or establish new arable lands.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	impacts relating to mistargeting and the lack of transparency and discrimination marginalised groups; and corruption in selection of the project recipients; Impacts related to conflict eruption and social disputes due to lack of consideration to the different stakeholders' needs and interests and mishandling	Social	The design of the targeted location is part of a holistic approach for protecting all the affected area. Scope of work should be identified and agreed with the community. The interventions in areas which may lead to social conflicts will be avoided.	FAO/ SFD	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities

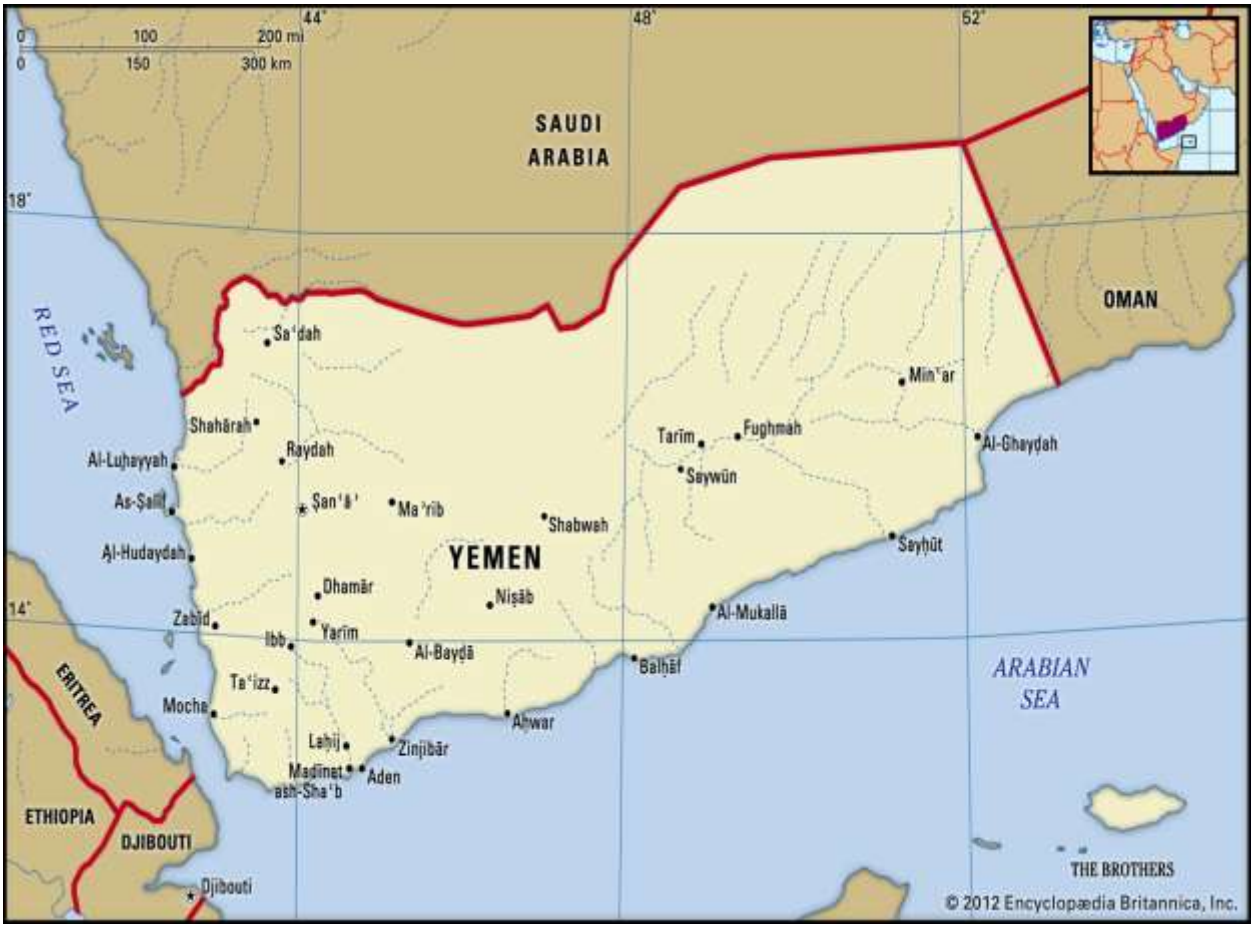
	water owernship, use and property rights The selecting of agriculture areas for interventions may cause social conflicts between beneficiaries.					
	Access to natural resources may be changed, and some beneficiaries could see their access negatively affected (particularly water). This could result in conflict.	Social	Before subproject implementation starts, a beneficiary committee is established which consists of sheiks, Water User Association (WUA), and farmers, women's groups, etc. The role of this committee is to ensure no activities can start unless it's free from any social conflict that could hinder the project implementation. They prepare a consent form among beneficiaries to clarify the land ownership and any potential social conflict, especially with regard to water resources and access to water and land resources.	FAO/ SFD	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Conflicts between cash for work working groups due to the laziness of some workers which negatively affect the social relationship.	Social	Choose the working groups based on the social relativeness and geographical convergence. Working with team spirit and helping each other.	FAO/ SFD	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	Complaints	Social	A complaints register will be kept on site and this will feed into the SFD GRM. Details of complaints received will be incorporated into the monthly reports as part of the monitoring process.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities

The potential impacts and mitigation matrix for the Yemen Desert Locust Response Project

1. INTRODUCTION

To support its sustainable development strategy and program, particularly towards alleviating rural poverty presently hindered by both a nearly seven-year old ongoing civil war, and a very challenging desert locust swarms threat throughout the country, especially on the most fragile and vulnerable populations in the rural areas, the Government of Yemen (GoY) has requested and obtained both the financial support from the World Bank Group and the technical support of the United-Nations Food and Agriculture Organization (FAO) to help with the development and implementation of the above "Yemen Desert Locust Response Project (YDLRP)" project[2].

Map 1: Map of Yemen



Map of Yemen – Source: Encyclopaedias – Britannica, Inc. 10/15/2020

https://www.britannica.com/place/Yemen

[2] Moving forward and for simplification purpose, we will be most often using the term "The Project" in lieu and place of the full denomination of the "Yemen Desert Locust Response Project (YDLRP)".

Project Context and Rationale

1.1. Country context and Project rationale

Yemen is a country situated at the south western corner of the Arabian Peninsula. It is mostly mountainous and generally arid, though there are broad patches with sufficient precipitation to make agriculture successful. The Agriculture and food sector (i.e. including fisheries and livestock) is the backbone of Yemenis' livelihoods and the most important non-oil sector of the economy. The sector has suffered disproportionately from the ongoing near 7-year violent civil war conflict, yet increasingly playing an important role in preserving and restoring the incomes of the people of Yemen[3]and it is expected to play a leading role in post-conflict recovery and reconstruction.[4] The dramatic deterioration of conditions in Yemen has translated a significant worsening of poverty, creating an unprecedented humanitarian crisis. The Global Report on Food Crises 2020 concluded that "the combined effects of conflict, macroeconomic crisis, climate-related shocks and crop pests, including fall armyworm and desert locusts, were likely to ensure that Yemen remained the world's worst food crisis" in the immediate future.[5]

The latest data confirm a sharp fall in the volume of food imports[6] since October 2019, raising serious concerns about Yemen's food security. Any disruptions in global food supply chains resulting from the COVID-19 pandemic[7] could further exacerbate food insecurity through reductions in food imports and high prices arising from shortages.

Locust infestations are expected to significantly damage crops and pastures, generating serious losses for agricultural producers and worsening food insecurity in Yemen[8]. The direct effects of locust swarms include the destruction of standing crops, agricultural land, and fodder, leading to crop and animal losses, reducing incomes, increasing the financial burdens on farmers and livestock owners, and heightening food security concerns. The indirect effects of infestations operate through local scarcities of key agricultural and livestock products caused by the crisis, leading in turn to higher consumer prices and more serious shortages, which harm the local economy in affected areas.

Desert locust breeding grounds are widespread in Yemen, but the conflict has diminished the capacity to respond to emerging swarms. Spring and summer breeding of desert locusts occurs in the eastern interior desert regions in the governorates of Al Jawf, Marib, Shabwa, Hadramout Valley, and Al Mahara from April to September and mid-October. Winter locust reproduction occurs from September to April on the coastal plains of the Gulf of Aden and the Arabian Sea, from Bab al-Mandab (Taiz Governorate in the far West) to Hoff (Al Mahara Governorate in the Far East, bordering Oman). Locusts also breed in the governorates of Aden, Lahj, Abyan, Shabwa coast, Hadramout coast, and Al Mahara coast, as well as on the coastal plains of the Red Sea from Zabid (the western part of Hodeida Governorate) to Midi (the northwestern part of Hajja Governorate) and the governorates of Hodeida and Hajjah (Western Highlands). Around 60% of breeding areas are in southern Yemen and 40% are in northern areas. The current conflict exacerbated the locust crisis by disabling an effective response when the new swarm formed at the end of 2018, unlike

[3] The share of the population dependent on agricultural employment rose from 29.3 percent in 2014 to 36.6 percent in 2019

[4] https://www.theglobaleconomy.com/Yemen/Employment_in_agriculture/

[5] World Food Programme (2020), *The Global Report on Food Crises 2020*, available at www.fsinplatform.org/sites/default/files/resources/files/GRFC_2020_ONLINE_200420.pdf.

[6] Yemen imports 80% of its food.

[7] While Yemen had only eight officially confirmed cases of COVID infection at the end of April 2020, concerns mount over the potential impact of the pandemic, especially given the country's weakened public health system.

[8] The expected damages and losses (DALOs) for the 2020 agricultural season are estimated at$222 million, including $14 million of production losses in staple crops, $108 million of production losses in animals, and $100 million of damages to livestock assets.

the response during the last two major outbreaks in 2007 and 2013, when Yemen effectively monitored and controlled the forming swarms.

1.2 Project environmental and social risk rating and categorization[9]

The Environmental and Social Risk Rating for the Yemen Desert Locust Response Project is "Substantial". Although this project is expected to have greater environmental and social benefits[10] than adverse environmental and social impacts, nonetheless, some potential environmental and social risks[11], opportunities and impacts might be caused by the implementation of some interventions under some components. Specifically, activities which will be financed under Component 1.2 "*Improving control measures*" which will support, inter alia, the procurement and application of pesticides and biopesticides. The main potential environmental risks and impacts are associated with: (i) the procurement, transport, handling, storage of the pesticides, dosage during treatment and disposal of empty pesticide containers; (ii) the risk of polluting ecologically sensitive habitats such as wetlands, national parks, protected areas and water bodies; (iii) risks of contaminating pasture, local water sources and sensitive agronomical areas and, (iv) risks of poisoning and contamination of field officers who are directly involved in handling and spraying operations, as well as communities who might be exposed to pesticides.

1.3 Definition, Justification and Objective of the Environmental and Social Management Framework (ESMF)

Consistently with prescriptions in both the World Bank and FAO social and environmental safeguards standards and policies, and applicable Yemeni social and environmental management regulations (i.e. environmental and social impacts assessment procedures), the Environmental and Social Management Framework (ESMF) is defined as a tool that allows the upfront management/safeguarding of environmental and social aspects of a given project whose physical footprints (i.e. targeted sites, components or subcomponents, etc.) are yet to be known.

The present ESMF has been prepared to better guide project foreseen activities in a way that broader environmental and social dimensions are well dealt with from the onset and managed efficiently throughout its implementation lifespan/phase. It's a tool/instrument that allows to (i) identify the environmental and social risks, impacts and opportunities associated with the proposed project's different investments within the Yemen Desert Locust Response Project (YDLRP) areas, and (ii) define the procedures and mitigation and/or capitalization and management measures, that will be applied/complied with during project implementation stage. As an environmental and social safeguards risk category classified as "Substantial" project, whereby foreseen risks and impacts will be substantial in scale, but also because of the ongoing seven-year old civil war, the ESMF serves also as a guide for the elaboration, whenever applicable, of future site-specific environmental and social management plans (ESMPs) once details of the physical characteristics of proposed subprojects activities throughout Yemen are defined and well-known.

The overall development objective of the ESMF is to ensure compliance with applicable environmental and social safeguards, standards, and regulations. The ESMF will guide implementing agencies of FAO, SFD and any potential subcontracted entities to adequately screen, verify and address key environmental and social impacts, risks and opportunities of project activities and subsequent sub-activities, thereby

[9] Available online at: http://www.fao.org/environmental-social-standards/en/
[10] - There are major social benefits to farmers especially vulnerable and poor farmers.
[11] - Social risks are related to the handling and spray of pesticides.

determining the appropriate environmental and social risk rating and category, as well as impacts level that project would need to avoid, deal with, and mitigate accordingly.

The ESMF sets out the basic principles, prerogatives and core obligations of both the recipient country's government (Ministry of Agriculture & Irrigation - MAI) and the financing and technical institutions (WB/FAO) in identifying and addressing environmental and social risks, impacts and opportunities that may require particular attention, especially during project implementation phase. The Environmental and Social Safeguard (ESS) policies, standards and regulations establish objectives and requirements to avoid, reduce, minimize and/or mitigate risks and impacts while maximizing the likely positive impacts and opportunities. More specifically, the objectives of this ESMF are to:

- Assess the potential environmental and social impacts of the proposed YDLRP project, whether positive, negative, direct, indirect or cumulative, and propose implementable mitigation measures which will effectively address these impacts, risks and opportunities;
- Establish clear procedures for the environmental and social screening, planning, review, approval, and implementation of sub-activities (i.e. whether standalone activity or activities grouped together based on similarity and/or geographical proximity) to be financed under the YDLRP project;
- Specify appropriate institutional roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to funded sub-activities;
- Consider different alternatives, options, and relevant mitigation measures during project preparation and implementation;
- Determine the training, institutional capacity building and technical assistance needed to successfully implement the provisions of the ESMF and related instruments;
- Address mechanisms for inclusive public consultation, participation and engagement and disclosure of project documents as well as redress of possible grievances from project affected and/or impacted persons; and,
- Estimate the project funding required to implement the ESMF requirements and to provide practical resources for implementing the ESMF and related sub-instruments during project implementation consistently with applicable standards, policies and regulations' prescriptions.

This study presents an Environmental and Social Management Framework (ESMF) that provides the basic principles and prerogatives to better screen, assess, avoid, mitigate and manage possible environmental and social impacts and risks of the proposed "Yemen Desert Locust Response Project (YDLRP)" project's activities and sub-activities throughout Yemen, while maximizing on the positive ones throughout the fight against this swarm infection.

Moreover, the ESMF describes the course of action for the implementation of each project activity. Sub-projects activities are yet to be confirmed at the beginning of the project as physical footprints will only be clearly defined during project implementation in response to concerns raised during consultations and

participation stages with project affected and/or impacted communities, especially IDP, refugees and most vulnerable ones, in the rural areas.

It is intended to serve as a practical tool to support the identification and mitigation of potential adverse environmental and social impacts of proposed project activities (i.e. spray of pesticides to eliminate hopper bands of desert locust swarms, and serve as an interactive platform for dialogue with stakeholders and potential project beneficiaries (such as women, youth, elderly and disables, etc.) and implementers (rural farmers and herders, livelihood dependent communities). Therefore, the ESMF is the appropriate tool within the environmental and social safeguard standards/policy of both the World Bank and the FAO.

The ESMF has been elaborated, in a very consultative and participatory manner, in compliance with applicable World Bank and FAO guidelines on environmental and social safeguards as well as GBV and vulnerability dimensions management, and respectful of applicable Yemeni regulations.

1.4 Methodological Approach

As done during the design and elaboration of the project documents, and as prescribed in both the World Bank Environmental and Social Framework (ESF) and FAO environmental and social safeguards standards and policies, as well as in the applicable national legislations of Yemen, the elaboration of the Environmental and Social Management Framework (ESMF) was undertaken through an inclusive and participatory stakeholders consultation and engagement process. Most key parties, from the government, development partners, civil society organizations, academia, private sector, local authorities, and beneficiary communities will be duly consulted upon throughout the preparation and implementation process and their concerns adequately taken into consideration in the ESMF (see annex 1 on details of stakeholder consultation). As an iterative process, the inclusive stakeholder consultation and participation process will be maintained during the preparation process of site specific ESMP, contractors ESMP (C-ESMP) and throughout the lifespan of the project, to ensure consistency, ownership, and social accountability building, which altogether are key to sustaining projects actions and achievements in controlling desert locusts and ensuring sustainable livelihoods for Yemenis.

Overall, a three-tiered approach has been explored to ensure that public/stakeholders' consultation, participation and engagement phase was consistent with the basic 3 steps:

1. basic project documentation gathering;
2. virtual consultation with stakeholders in the field of potential project areas
3. Meetings in-person with key project actors and beneficiaries at both central and local/district levels.

Beside the regular desk review that consisted of gathering and reviewing some existing/available project documents, supplemented with additional research to complement/fill information gaps to support our assessment, this step was further followed with a field mission in Aden, Hodeida, etc., as well as some targeted institutional stakeholders' consultations in Sana'a. This allowed to virtually meet, selected key stakeholders, and deepen the quest for more tangible/relevant information to feed into the ESMF narrative and enhance the draft report.

The process involved most potential project partners, institutional and local communities: officials and those in charge of key-line ministries field missions; professionals from specialist technical institutions and

academia; regional and local leaders; representatives from socio-professional organizations and women's, men's, youth and disabled peoples' groups, as well as community-based associations. Consultations were conducted through open or closed meetings, public sessions or smaller (focus) groups, etc. Its purpose is to devise a strategy that clearly supports stakeholder participation, inclusion and monitoring of project risks, impacts and opportunities, including the sharing and dissemination of results (good practices, missed opportunities and lessons learned, etc.). By helping to shed lights on the rationale and development objective of the project, these stakeholders' consultations and participation workshops sessions will set the ground for the project's successful compliance and performance, as well as, the successful implementation of mitigation measures recommended by the present Environment and Social Management Framework (ESMF).

The targeted objectives were: (i) inform beneficiaries, those affected and/or impacted, either directly or indirectly, by the project and its planned activities; (ii) allow people and all stakeholders on the ground to freely express themselves and give their opinions on the project; and (iii) identify and gather beneficiary communities as well as other project actors' concerns, fears, happiness, suggestions and recommendations.

In a nutshell, throughout the preparation process, stakeholders will be constantly invited, during institutional and/or public consultations, participation, and inclusion to identify the project's potential environmental and social risks, impacts and/or opportunities whether for the communities or the environment itself.

Once the key information was gathered, they were explored, analysed, and properly captured into the draft ESMF report to sustain the project rationale and safeguards compliance purpose.

Overall, the methodology used was found to be adequate, inclusive, and timely in terms of enabling institutions and beneficiary communities to properly and freely, express their views, and concerns, as well as receive answers to their questions. The proposed institutional arrangement is mindful of these concerns and a dedicated and well-versed team of professionals will work towards meeting beneficiaries concerns through an iterative consultation with and participation and inclusion of project beneficiaries to ascertain project is fulfilling its very purpose of alleviation beneficiaries rural poverty and help improve their living conditions and livelihood resources.

2. PROJECT DESCRIPTION

2.1 Project Development Objective

The main development objective of the Yemen Desert Locus Response Project (hereafter the Project or YDLRP) is to control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations.

More precisely, in the very context of Yemen, the expected outcome of the YDLRP is to foster a (i) much stringent response mechanism to the locust infestation outbreak that encompasses improved locust surveillance, monitoring, and control activities; (ii) livelihood support focuses on protection and restoration in the locust-affected areas; and, a (iii) strengthened national preparedness systems that include three main elements, namely (a) establishing a network of DLCCs, (b) establishing an early response system, and (c) connecting Yemeni systems with regional networks to exchange information and data and improve coordination of the locust response.

Progress toward the achievement of the PDO will be measured by the following outcome indicators:

Table 1: PDO Level Indicators

Outcome	Measurement
1- Control of desert locust outbreak implemented:	Share of affected pasture/rangeland restored to productivity (%)
	Share of affected agricultural land restored to productivity (%)
2- Livelihoods in locust affected areas supported	Affected households (number) supported by social safety nets, of which females (percent) are the direct recipients of benefits
	Share of locust-affected farmers (including crop farmers, livestock owners and beekeepers) reporting renewed agricultural activity, of which female-headed farms (percent), of which female-headed farms
3- Country's preparedness against future locust outbreaks strengthened	Yemen's locust control plan developed (Yes/No)
	Early warning system developed and functioning (Yes/No)

Source: CATS, October 2020

2.2 Project Components:

This Chapter provides a detailed description of the project activities under the sub-components supported by YDLRP, and step-by-step procedures for community mobilization, identification, preparation, and implementation.

Component 1: Surveillance and Control Measures

The objective of this component is to limit the growth of existing climate change–driven desert locust populations and curb their spread, while mitigating the risks associated with control measures and their impacts on human health and the environment. The component would improve the capacity (equipment and capacity building) for improved surveying and surveillance of the breeding and infestation areas and meteorological data collection, ensure locust control activities (spraying), and implement risk mitigation measures for the workers and affected communities. Efforts will focus on determining the likely impacts of climate change on pest establishment, development, phenology, behaviour, interactions with host and natural enemies, and other variables in specific agricultural settings. The component will be designed to

enable informed and climate-responsive locust management decision-making. Field survey can provide timely data to assess the risk of impending locust outbreaks. Satellite images and the associated geospatial technologies integrated with weather and ecology to provide early warning based on survey and control results from affected areas.

This information will be used for targeted preventative management actions in the locust breeding areas under changing climatic conditions. Habitat mapping will apply climate, soil, and other variables to map susceptibility of land areas in space and time to locust outbreaks (locust vulnerability map) or land areas where locusts have already Breed (locust impact map).

Sub-component 1.1: Continuous surveillance. The objective of activities under this sub-component is to provide early warning, inform effective control operations, and mobilize assistance (under Component 2) to affected and at-risk communities. Activities would include support for:

Activity 1.1.1. - Regular and Continuous surveillance and monitoring by ground survey teams in winter, spring and summer breeding areas, to be observed as breeding and egg-laying activities and the movement of developing nymphs, hopper bands, and adult locust swarms;

Regular ground surveys will be carried out by well-trained locust teams in suitable Desert Locust habitat areas that have been previously identified through remote sensing imagery (see Activity 1.1.2) as showing the highest potential for Desert Locust presence and breeding. Additional information from local sources, FAO's Desert Locust Information Service, recent rainfall, previous infestations, and predicted areas will be utilized for prioritizing survey areas and determining survey itineraries. Every team will be equipped with one of the eLocust3 devices (eLocust3, eLocust3m, eLocust3g) for real-time data recording and transmission from the field to the DLCC.

Activity 1.1.2. Preparation of habitat maps applying climate, soil and other variables to map susceptibility of land areas in space and time to locust outbreak (locust vulnerability map) or land areas that are already proliferated by locusts (locust impact map)

Existing resources available on an operational basis such as ten-day rainfall estimate and dynamic greenness imagery from Columbia University (USA) will be analysed within the custom RAMSES geographic information system that exists in the DLCC by the two previously trained national Desert Locust Information Officers to determine areas where environmental conditions are suitable for the survival and reproduction of Desert Locusts. Whenever possible, this imagery will be supplemented by specific high-resolution vegetation imagery as well as other imagery estimating soil moisture conditions. The latter is expected to become operationally available during the last quarter of 2020.

Activity 1.1.3. Collecting and analysing data by evaluation and monitoring teams to inform planning, to identify and plan control targets, and to ensure appropriate control methods are applied at the optimal time to break the cycle of the next generation;

Satellite images, the associated geospatial technologies, as well as ground surveying and other data collection methods will provide timely data to assess the risk of impending locust outbreaks by forecasting breeding and migration. The project will, therefore, procure the necessary inputs for satellite surveillance (satellite maps and meta-data analysis) which allow information officers to analyze the data and inform decision makers to take the necessary action depend on the latest developments on the ground. The necessary equipment for land surveillance (elocust3, GPS, camping kits, dissection kits, 4WD pickup

trucks), as well as finance the staff and operating expenditures for locust surveillance and monitoring. The project will also organize the necessary training (TOT) sessions for representatives from the affected regions to ensure further organized training of the affected communities in conformity with the FAO Guidelines and Standard Operating Procedures (SOPs) on desert locust surveillance. It is expected that 15–25 representatives with relevant backgrounds from each of the locust-affected governorates (Aden, Abyan, Mareb, Shabwah, Al Hawf, Hadramaut, Al Maharah, Sanaa, Hajjah and Alhudaydah) will be trained to subsequently work with the affected communities, raising their awareness. To the extent possible, communities will also be equipped to actively participate in the desert locust surveillance and monitoring.

Sub-component 1.2: *Control measures* – The objective of the activities under this sub-component would be to reduce locust populations and prevent their spread to new areas. This would be achieved via a range of activities:

Activity 1.2.1: *Targeted ground control operations with emphasis, whenever possible, on neutralizing hopper bands before they develop into adult swarms*. It is expected that mostly bio-pesticides will be financed under this sub-component to lessen the impact on honey producers. This would be deployed via ULV spraying, a technique that uses much smaller volumes of spray liquid compared to conventional spraying methods and has become the most commonly used method for desert locust control.

Activity 1.2.2. *Procurement of all material and equipment for the ground control operations of the desert locust*, including: 4WD pickups, pesticides and bio-pesticides (*in accordance with the FAO Guidelines and Pesticide Referee Group recommendations*), various types of vehicle-mounted ULV sprayer equipment, backpack motorized ULV sprayers, hand-held ULV sprayers, pesticide pumps, pesticide drum cleaner and crushers, PPE, and so on. The operational costs of control operations (salaries of workers, vehicle fuel and maintenance) will also be supported. The pesticide-related equipment would be procured, used, and maintained in conformity with FAO Guidelines on pesticide equipment, application, and maintenance. The design of the energy-efficient vehicles with mounted sprayers that would be procured and utilized would have non-adjustable specifications and be manufactured as a build-in module that cannot be used for another purpose.

Sub-component 1.3: *Risk reduction and management*. The principal objective of activities financed under this sub-component is to monitor and assess environmental and human health risks associated with locust control and implement health, environmental, and safety measures to reduce risks to an acceptable minimum. Insecticides that are used in locust control pose risks to human and animal health and to biological systems and biodiversity. Field officers who are directly involved in handling and spraying operations run the highest risk of being poisoned, either accidentally or during the normal course of their work, but local populations are also at risk, especially in the areas in which spraying is carried out. For field officers, to reduce risks of overexposure to chemical pesticides, all field officers and spray operators will be equipped with appropriate PPE and pumps to limit handling of chemicals. In addition, all operators will have access to the Materials Safety Data Sheet and relevant materials to contain and absorb accidental spills. Acetylcholinesterase will be used to monitor for exposure to certain types of pesticides, and locust control (spray) personnel will be rotated to the extent possible, to avoid overexposure and poisoning. Exposure could also occur through consumption of contaminated food grown in sprayed areas, and there is need to promote awareness and to ensure that communities respect the re-entry time for their livestock and withholding periods for their harvests. Activities and measures financed under the sub-component would include:

Activity 1.3.1: Procuring the ChE Cholinesterase Test System for the control of acetylcholinsterase

Activity 1.3.2: *Testing people potentially exposed to pesticides (especially logistical staff involved with handling, transporting and storing insecticides, and spraying teams) and soil and water for insecticide contamination.* All personnel involved in the project and exposed to pesticides (*storage, transport, calibration, empty containers, handling, etc.*) such as farmers, women, children, elderly and disabled people, etc., should have a health certificate, insurance, take an acetylcholinesterase test before, during and at the end of the desert locust control campaign, and should be trained on the appropriate and safe use of PPE;

Activity 1.3.3: At the end of the desert locust control campaign, soil, water, and plant samples will be taken for pesticide residue analysis by a nationally or regionally accredited laboratory. This sub-component will also finance:

Activity 1.3.4: Preparing a comprehensive NPMS, which will optimize the selection of control strategies, protection measures, and insecticides based on situational and environmental assessment;

Activity 1.3.5: Providing safety and awareness training (for example in handling, transporting, and storing pesticides) for spraying teams and other locust control personnel.

Component 2: Livelihood Protection and Restoration

The component aims to provide a robust protection response to ensure immediate relief to affected farmers and livestock owners, through the restoration of lost assets and creation of temporary employment opportunities and building their resilience to climate induced locust infestation. Farmers, beekeepers, livestock owners, and other primary producers and agricultural labourers[12] who have faced losses as a direct result of the climate-induced desert locust crisis need urgent assistance to reverse the decline in their income, meet their production and consumption needs, and build resilience.

These primary producers need to be identified and compensated for losses incurred through direct and immediate assistance measures. Adoption of climate-smart crop and livestock management practices will be promoted as well as livelihood diversification activities that are less dependent on climate and weather variability. Households benefitting under one sub-component would not be eligible to benefit under the other sub-component. The SFD, which has extensive prior experience in implementing the types of activities supported under Component 2, will be the implementing unit for this component, which will ensure transparency and availability of information for cross-verification on beneficiaries of both sub-components to help avoid double-dipping and to spread the program benefits across a greater number and wider range of beneficiaries.

Sub-Component 2.1: *Safeguarding food security and protecting human capital for enhanced resilience*. The sub-component will provide immediate CFW support to the beneficiaries in the locust-affected areas who are not expected to benefit from the livelihood restoration measures under Sub-component 2.2. The beneficiaries under Sub-component 2.1 are expected to be primarily women (around 80 percent of the total number of beneficiaries), as well as agricultural labourers, tenant farmers and sharecroppers. The CFW program will provide short-term employment opportunities (up to six months) against a monthly cash payment. The CFW program is an ongoing activity under the Bank-financed ECRP,13 which provides

[12] - No child labor is allowed under any activity for this project especially activities that might cause harm or health effects..
[13] The project will seek strong complementarity with ECRP, which has provided around US$376 million in CFW programs since 2016.

income support to work-capable individuals from poor households through community-level, participatory public works programs. The program relies on a mechanism of self-targeting, through which wages are set below market rates to limit participation to the genuinely poor, and limit leakage and over-subscription.

The main focus on women participants in CFW interventions is motivated by the need to promote gender equality by supporting women's empowerment through livelihood protection, as well as to promote women's roles in enhancing community resilience. Women's participation in CFW will provide much-needed income support to female farm labourers and small farmers affected by the crisis, while providing opportunities for skills training in a manner that promotes dignity through work. The project will ensure that the assigned work for women will be suitable (in terms of level of physical strength needed, and acceptability among families and communities), conveniently located, and accessible to them.

During the identification of CFW sub-projects, participatory and community-based approaches involving women will be undertaken to identify such suitable and accessible activities for the women participants. The project will also explore the possibility of employing a few women to provide support services for other CFW participants such as childcare facilities located close to CFW worksites or cooking and serving of meals. Focusing on women in CFW interventions will help increase women's contributions to household income and food security, which in turn is expected to increase women's decision-making within the household over key matters including intra-household nutrition and dietary diversity, use of savings and transfers, and household expenditures.

The CFW activities would focus on actions that can primarily engage women, including: (i) clearing affected agricultural land of dead locusts through hiring women as short term labourers[14]; (ii) planting seedlings and hybrid seeds through labourers; (iii) rehabilitation of small water reservoirs to reduce irrigation costs and tackle drought; (iv) collecting locusts (not treated under the control activities) from fields to be used as fertilizers and a source for feeding animals; (v) (re)introducing select pollinators following control measures; (vi) training women in target areas on best health practices and hiring them as community health workers (to integrate COVID-19 response); (vii) providing childcare activities/services near CFW worksites; (viii) encouraging women to take care of their home gardens, cultivate plants that repel locust from houses, and improve family nutrition. An estimated 1,500 beneficiaries (primarily women) from among the affected small farmers, primary producers, and agricultural labourers will receive short-term CFW opportunities (lasting for a duration of six months per beneficiary).

Sub-Component 2.2: *Rehabilitating agricultural and pastoral livelihoods*. This sub-component focuses on the longer-term restoration of affected farms and livestock owners through targeted asset restoration support and training to primary producers to help them restart production affected by locusts (in support of food security). The subcomponent will prioritize the adoption of climate-smart crop and livestock practices for reduced greenhouse gas emissions, enhanced resilience, and the implementation of livelihood support/diversification initiatives. Support will be provided for agroecosystem management approaches that enhance resilience of farm and landscape to changes in climate and pests. Climate-resilient grazing will be supported, including legumes and grasses adapted to the local environment to

[14] - All precautions will be taken to ensure no child labor is allowed under any activity for this project especially activities that might cause harm or health effects. Likewise, no seriously disabled person will be allowed under any of such activity that include manipulation of pesticides.

increase biodiversity and landscape resilience. Leguminous species are also beneficial for climate mitigation, fixing atmospheric nitrogen and improving soil fertility. Specific activities will include: (i) provide affected households dependent on agriculture and livestock with productive assets (farmer packets/kits) to resume activities; and (ii) increase farmer and agricultural household production, productivity, and climate resilience through training and agri-technical assistance to the beneficiaries receiving productive asset support. Farmer kits would build on the good practices and climate-smart practices promoted by the World Bank. Giving attention to supporting diversified production and climate resilience and introducing improved varieties. It is estimated that around 5,600 beneficiaries will be reached with the productive asset kits for restoring production of crops and animals. The kits would include agricultural inputs, as well as emergency fodder and limited animal restocking. The crop and pasture restoration would need to support plantings that would promote the restoration of pollinator populations in the affected area.

Component 3: Coordination and Early Warning Preparedness

Recognizing the cause-effect relationship between climate change and desert locust infestations, the component will strengthen national capacity for early warning and early response, linking these efforts to regional networks thereby enhancing climate-resilience. Early warning systems will be developed and implemented to support prevention and rapid response to new and existing climate change induced locust infestation, thereby limiting in-country and cross-border spread and intensification. Emphasis will be placed on building capacity to enable rapid and targeted short-term responses and long-term adaptation planning.

Sub-component 3.1: *Improving the infrastructure and institutional capacity of the national locust control centers*. The objective of this component is to establish a network of DLCCs as follows:

Activity 3.1.1. *Establish a new Central DLCC in Aden* (covering Aden, Lahj, Abyan, Al Dalea, and Taiz) *and three regional hub centers in Hodeida* (covering Hodeida, Hajja and Al Mahweet), in *Shabwa* (covering Shabwa, Marib, AlBida, and AlJaf) *and in Sieun* (covering Hadramout and Almahara)

Activity 3.1.2. *Rehabilitate the infrastructure and operational capacity of the DLCC in Sanaa* (covering Sadaa, Amran Merib and AlJof) which have been severely affected by the ongoing crisis in Yemen. The new centres will be built on lands that belong to the Government of Yemen[15].

The network of centres would be established in key areas with proximity to locust breeding areas, which would permit rapid deployment of technical and human resources to respond to a locust infestation. As indicated, each centre will cover several governorates. The centres will be furnished and equipped to be fully operational. Investments in climate-proof and energy-efficient infrastructure will be pursued. The centres will consist of suitable storage facilities for pesticides and other control material and equipment, including refrigerated facilities/stores for bio-pesticides. Investments in storage facilities will be designed with the objective (among others) of reducing exposure of products to extreme weather. The standard operating procedures for a desert locust response will be established and agreed in connection with the relevant international and regional organizations. The centres will have a limited number of offices to house the necessary staff and equipment for the information platform described in 3.2 below. A detailed strategy for the operation and maintenance of the DLCC network after the project will be developed at

[15] - Verifcations of land ownership such as letters from the governors will need to be provided to ascertain such statements. The proposed letters should indicate the location of land with coordinates, area of land needed for the construction of new center, photos of surrounding areas,etc.

the project outset. The centres will also prepare and maintain the National Desert Locust Control Plan, which will include the measures and procedures for locust surveillance and control, as well as resource requirements and planning and deployment mechanisms. The network of centres will be operationally linked through the analytical and information platform described in 3.2 below, to ensure a coordinated locust response.

Sub-component 3.2: Early warning preparedness. The sub-component will finance the design, testing, and deployment of a DLERS (early response system), based on the development and implementation of early warning systems that support prevention and enable a rapid response to new and existing climate change-induced locust infestations, thereby limiting in-country and cross-border spread and intensification. Emphasis will be placed on building capacity to enable rapid, targeted short-term responses and long-term adaptation planning. The DLERS will be composed of four sub-systems: a Desert Locust Early Warning System (DLEWS), Desert Locust Operation System (DLOS), Desert Locust On-Farm Impact Monitoring System (DLOFIMS), and Pesticide Stock Management System (PSMS).This integrated system will have the most up-to-date information to trigger informed desert locust ground and/or aerial control operations for swarm control. The system would also enable response mechanisms for other disasters and adverse climate events by monitoring metrological data. The sub-component will also finance the establishment and testing of the National Desert Locust Outbreak

The objective of the Desert Locust Early Response System is to effectively manage Desert Locust early warning, response, impacts and resource stocks in a timely and systematic manner. Accordingly, it will consist of four sub-systems:

(1) Desert Locust Early Warning System (DLEWS). This sub-system is intended to provide the most recent geo-spatial information on observations of Desert Locust larvae, adults, density, behaviour, breeding, and gregarization as well as environmental conditions and specifics of control operations in order to monitor changes in locust infestations over time and space. DLEWS will make full and expanded use of the existing RAMSES GIS that is in place in the DLCC. The eLocust3 suite of tools will be used in the field by survey and control teams to record data that will be fed into DLEWS in real or near real time.

(2) Desert Locust Operation System (DLOS). This sub-system is intended to provide up-to-date information and management of existing logistics, control, protection equipment and trained staff to undertake survey and control operations, which will be used extensively during control campaigns. DLOS will adopt and establish the Earth Ranger (Vulcan, USA) system based on lessons learned from its operational use in the Horn of Africa.

(3) Desert Locust On-Farm Impact Monitoring System (DLOFIMS). This sub-system will monitor crops and pastures in the agricultural areas and provide early warning of any negative impacts, as well as provide information for impact assessment.

(4) Pesticide Stock Management System (PSMS)." This sub-system is intended to provide up-to-date information on quantities, qualities (shelf life, packaging, etc.), storage conditions, and a national map of stores of pesticide products. The standard FAO system will be established for use in Yemen.

Emergency Risk Communication Plan: Both the system and the communication plan will be housed at the CDLCC, with linkages to the regional offices.

This integrated system is based on an application installed on mobile devices to enter field data on the locust situation and to monitor and maintain equipment, logistics, and the quantity and quality of pesticide stocks. The mobile devices are equipped with GPS, camera, internet connection, standard digital forms for collecting data on surveillance sites (habitat conditions, observed breeding, egg-laying areas, and the movement of developing nymphs, hopper bands, and adult locust swarms), pesticide storage and equipment for pesticide application and surveys (pesticide stores, equipment, logistics, and pesticide products).

Data entered in the mobile devices will be instantly sent to the CDLCC, equipped with the custom RAMSES Geographic Information System application that is used in every locust-affected country for data analysis, locust infestation vulnerability mapping, and reporting. Selected personnel from the five affected regions will be trained to use the system. In addition to the central server in Aden, the DLERS will be linked to FAO to share up-to-date information on surveillance, equipment, and expertise with other countries in East Africa and MENA. FAO will also receive periodic reports containing (among other information): data on desert locust early warning, quantities and qualities of pesticide application equipment, pesticide stocks and logistics, geographical distribution, storage conditions, and photos of stocks. Periodic reports are produced and disseminated to all stockholders for information and appropriate action.

The DLCC network will aim to develop regional collaboration. In addition to being part of the regional network that provides regular updates and information on the desert locust situation to FAO, the DLCC network will also benefit from collaboration with the other countries in East Africa and MENA that benefit from the Emergency Desert Locust Response Program. In addition to the four first-mover countries (Djibouti, Ethiopia, Kenya, and Uganda), Somalia is joining the Program shortly, and South Sudan, Tanzania, Eritrea, and possibly other countries are anticipated to follow. The MPA is expected to provide a number of opportunities for participating countries to engage, including collaboration, communication, and information and data sharing networks.

Component 4: Project Management

This component would cover the costs associated with project management, such as implementation support, FM, procurement, monitoring of environmental and social safeguards, as well as M&E. The portion of the component cost related to project management will include costs associated with both FAO and SFD (Component 2). The component will also finance a TPM mechanism and establishment and maintenance of the GRM.

The component will also ensure awareness raising, communication, and knowledge management activities, including response to COVID-19. It will help promote increased community awareness about the impacts of desert locust swarms and the response efforts to support communities before, during, and after locust invasions. The national and local governments, as well as communities across the affected areas, will need information about combatting and managing swarms, how and when pesticides can be used safely and effectively, and—when their area has been treated with pesticides—how to safely navigate the effects on plants, livestock, and water systems. A public awareness campaign will be implemented to keep the public informed about possible environmental and health effects of insecticides and empty pesticide containers before, during, and after locust control operations. Monitoring and building environmental and climate literacy will also help increase outreach of reliable climate-smart pest management knowledge. It is expected that at least 75,000 beneficiaries will be reached through the public awareness campaigns.

Integration of COVID-19 response. Like all countries, Yemen faces the alarming threats accompanying the COVID-19 pandemic, but concerns related to the pandemic are particularly severe for Yemen, because it is a fragile country with very weak health systems and high illiteracy levels. In addition, less than 25 percent[16] of the population has internet access, and public electricity is almost non-existent in many parts of the country. It is essential for the proposed project to integrate preventive measures, such as raising widespread awareness of the severity of the virus among rural households. The project will use its resources, such as field consultants, to integrate awareness-raising measures against COVID-19 in the training and awareness campaigns planned for beneficiaries.

The awareness raising and training events will follow precautionary measures on workshop/training protocols, as well as enforce and maintain adequate distancing during control, distribution, training, payment, and other project activities. The project will work with local communities, consultants and beneficiaries to reach the largest numbers of households with awareness and hygiene materials (such as masks, hand sanitizers, and other relevant consumables). The decision on which hygiene materials to procure will be made based on the results achieved and gaps identified in coordination with the COVID-19 health emergency project in Yemen.

To reduce greenhouse gas (GHG) emissions from project interventions, the program also includes activities from the approved list in Annex A.C.1 of the Joint Report on MDB's Climate Finance[17] and the World Bank's Guidance for Addressing Climate Change Corporate Commitments in Agriculture.[18] The project activities fully qualify as generating climate change mitigation Co-Benefits under Sub- Category 4.1. Agriculture and 9.1 from the A.C.1 List of activities eligible for classification as climate mitigation finance. The GHG accounting results are summarized in Section IV, Project Appraisal Summary (i.e. see PAD, 2020).

Project Financing Instrument

The project will be financed through an Investment Project Financing (IPF) instrument in the amount of $25 million IDA grant. The project will be implemented over a three-year period.

Table 2: Proposed YDLRP Budget

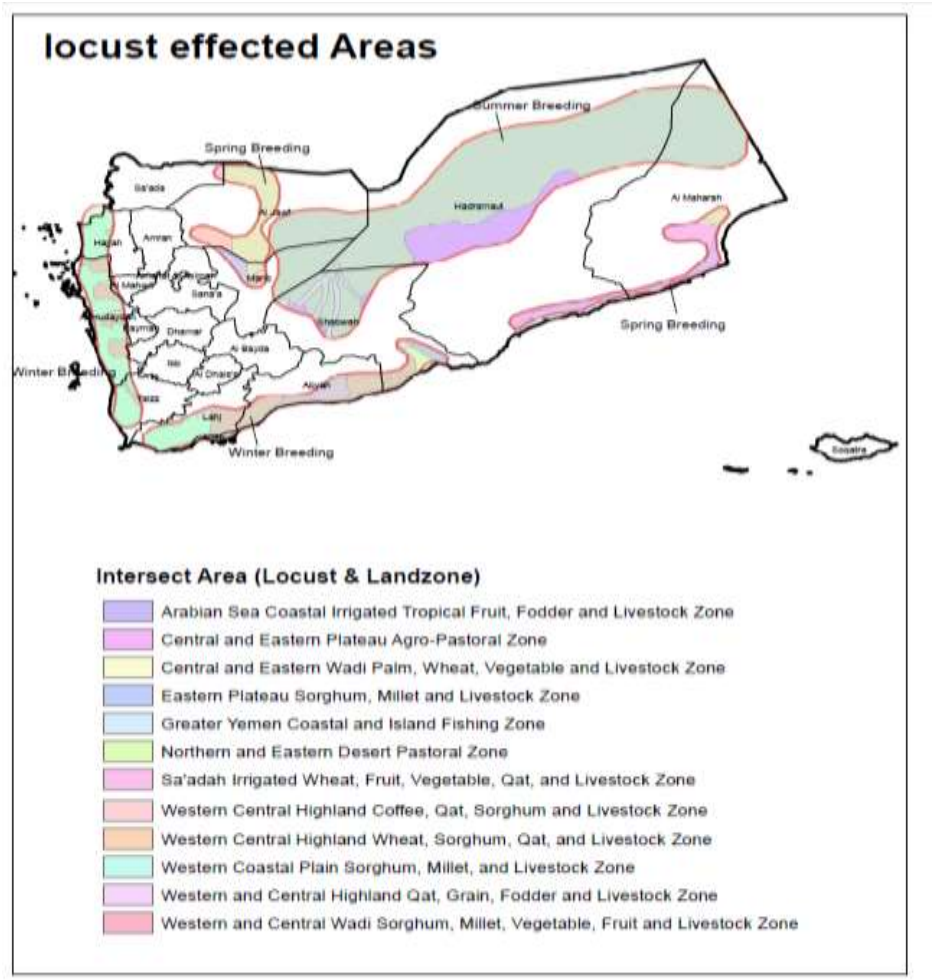
Component	Cost (US $, millions)
Surveillance and Control Measures	10.50
Protection and Restoration of Rural Livelihoods	4.55
Coordination and Early Warning Preparedness	5.10
Project M&E and Management	3.20
FAO Fee	1.65
Total	25

Source: CATS - Extracted from the Project POM, October 2020

[16] Internet World Stats - https://www.internetworldstats.com/me/ye.htm
[17] Joint Report on Multilateral Development Bank's Climate Finance (2019). http://pubdocs.worldbank.org/en/650791574955718829/2018-joint-report-on-mdbs-climate-finance.pdf
[18] World Bank (2018). Climate Change Requirements: Guidance Note for Meeting Corporate Requirements for Climate Smart Agriculture https://worldbankgroup.sharepoint.com/sites/Agriculture/Knowledge%20Base/GuidanceNoteClimateChangeRequriementsAgriulturalOperations.pdf

Project Investments Intervention Area

Map 2: Locust Effected Areas



Source: CATS & FAO Project Team – October 2020

The project has a national coverage as it is intended to be implemented throughout the country, with an emphasis on the desert locus affected areas. Desert Locust swarms breeding in Yemen is widespread. More specifically, spring and summer breeding of Desert Locusts occurs in the eastern interior desert regions in the governorates of Al Jawf, Merib, Shabwa, Hadhramout Valley and Al Mahara from April to September and mid-October; whereby winter locust reproduction occurs during the period from September to April on the coastal plains of the Gulf of Aden and the Arabian Sea from Bab al-Mandab (Taiz governorate) to Hoff (Al Mahara governorate - Far East, borders with Oman). It also appears in governorates of Aden, Lahj, Abyan, Shabwa coast, Hadhramout coast and Al Mahara coast, as well as, on the coastal plains of the Red Sea from Zabid (western Al-Hodeida governorate-) to Midi (Northwest Hajjah governorate) and includes the governorates of Al-Hodeida and Hajjah (Western Highlands).

More specifically, around 60% of the desert locust impacted areas are in the south of the country, and 40% in the north. The current conflict that span throughout the country has heavily exacerbated the locust crisis, disabling an effective response to the desert locusts issue when the new swarms formed at the end of 2018, unlike the last two major outbreaks in 2007 and 2013 when Yemen ensured effective monitoring and control of then-forming locust swarms. Swarms are likely to continue breeding in Yemen's interior and winter rains could foster further generations of breeding, each multiplying the population 20-fold, continuing to be a major threat during the months of spring and summer breeding seasons, as well as later in the fall seasons. In the spring, breeding will continue to occur on the Red Sea and Gulf of Aden coasts, causing a further increase in locust numbers that will give rise to hopper groups, bands, adult groups and swarms. Breeding will also occur in the interior in Wadi Hadhramout and near Merib where good rainfall are expected. The trend of increasingly spreading to new areas is becoming a major concern. Forecasts also show favourable conditions including rainfall, green vegetation, and soil moisture for locusts to keep laying eggs in lowland sandy areas and for successive new generations of swarms to emerge.

3. ENVIRONMENTAL AND SOCIO-ECONOMIC PROFILE OF DLRP TARGETED AREAS[19]

In this specific section, only safeguard-relevant information is discussed at length. Whenever deemed necessary, additional information on other environmental and social development-related information is being provided to deepen the Desert locus context-analysis.

Over half of Yemen's population (54 percent) is facing severe hunger and malnutrition rates are soaring with nearly 2.2 million children estimated to suffer from malnutrition by the 2021. Violent conflict, now in its sixth year, has crippled Yemen's economy and creating an unprecedented humanitarian crisis in a country where revenues from hydrocarbons, the former main source of foreign earning, have effectively diminished as a result of repeated sabotage of vital infrastructure and increased insecurity. The Yemen economy continues to decline reflected at the household levels by increasing cost of living and increased negative coping mechanisms.

In the areas controlled by the internationally recognized government (IRG), significant revenue underperformance and continued monetization of the fiscal deficit have undermined macroeconomic stability. Revenues from oil prices remain low while the rest of the economy suffered significantly from COVID-19 related trade slowdown, desert locust infestations and exceptionally heavy rainfalls, which caused intense flooding, infrastructure damage and human casualties. The severe revenue shortfall has led to significant austerity measures mainly affecting public sector salaries – since early 2020, salary payments have seen frequent delays. In the northern areas controlled by the de facto authorities (DFA), complete ban on the use of new banknotes since December 2019 has effectively segmented the northern governorates from the impact of macroeconomic policy implemented by the IRG and CBY (Aden). This led to fragmented institutions and divergent policy decisions between the areas of control further compounding the economic and humanitarian crisis, from protracted conflict, interruption of basic services, and acute shortages of basic inputs, including fuel. More than 50 percent of Yemenis between

[19] In addition to several research findings on the current literature of Yemen, formation from this chapter draws heavily from (and is consistent with) the full Project Appraisal Document (PAD- June 2, 2020) and Project Operations Manual (POM- October, 2020),. The appendices of these documents should be consulted if additional details are required.

the ages of 18 and 24 were unemployed in 2017 (UNDP 2017). This dramatic deterioration of conditions in Yemen has translated into estimated 80 percent of the population (around 24 million) living below the poverty line even before the crisis brought about by the COVID19 pandemic (World Bank 2019). In addition to monetary poverty, up to 80 percent of households experience overlapping monetary and non-monetary deprivations (World Food Programme 2020). The Global Report on Food Crises 2020 concluded that "the combined effects of conflict, macroeconomic crisis, climate-related shocks and crop pests, including fall armyworm and desert locusts, were likely to ensure that Yemen remained the world's worst food crisis" in the immediate future20.

The Economic and social prospects for the 2021 and beyond are highly uncertain. A gradual recovery of global oil prices would help ease the strain on public finances governorates under the IRG and reduce the recourse to central bank financing. However, with ongoing political and security situations, socio-economic conditions will remain difficult. Urgent progress to address the current restrictions of access to supplies and fuel imports would improve the provision of public services and the operational environment for humanitarian operations. A cessation of hostilities and eventual political reconciliation, including the return of unitary macroeconomic policy implementation, are prerequisites for the reconstruction of the economy and rebuilding of social fabric.

Geographical Location and Topography

Map 3: Geographical location and topography

Source: CATS – Oct. 2020, Encyclopaedia Britannica.

[20] The Global Report on Food Crises 2020, available at www.fsinplatform.org/sites/default/files/resources/files/GRFC_2020_ONLINE_200420.pdf

Yemen is located in the South East of the Arabian Peninsula. It lies between 120° and 17°N Latitude and 43° and 56°E Longitude. The country has rugged surface features composed of mountains, hills, plateaus, plains, valleys and gorges. The varied topographic features and the variable climatic conditions of the country are among the major factors which resulted in diversified crop genetic resources, in particular and vegetation and flora types in general21. Nearly two decades ago, many internationally known scientists and plant collectors have recognized Yemen as one of the important regions of Asia in particular, and worldwide in general. They described the diversity of many cultivated crop plants in the mainland and vegetation and flora types in Socotra Island. However, due to long period of human, habitation, high population density, particularly in the highlands and unsustainable utilization of natural resources, most of the natural vegetation of Yemen has been depleted and some of the lands under cultivation are nowadays highly eroded. Moreover, improved agricultural systems, urbanization and heavy constructions have accelerated the ongoing generic erosion in the past decades.

Topographical features

Yemen generally is characterized by extremely diverse physiography, climate and soil. That is due to great changes in elevation raising from sea level to nearly 3,700 m, which form the highest peak in the Arabian Peninsula. In terms of ecology the country may be divided into four major zones, varying significantly from each other in total climatic and edaphic factors; namely:

1. Coastal plain: The coastal plain lies between the Red Sea and the Arabian Sea with a length of 1,920 km and includes:

Western plain: It lies between the Red Sea and the Western escapement. The altitude ranges between the sea level to about 300 m and 420 km long, and a width of 20-40 km. The plain covers a total area appr. 16,000 Km^2. There are several wadis that cut Tihama plain namely: Mor, Rima, Siham, Rusyan, Surdud and Zabid.

Southern plain: It lies between the Arabian Sea and the southern escarpment with altitude range between sea level to about 200 m. The plain stretch to about 1 500 km long and from 10-60 km wide. It includes the following wadies: Bana, Hassan, Ahwar, Hajer and Mayfa'a.

2. Mountainous regions and low altitude mountains:

Tihama foothills and low altitude Western mountains that include the mountains west of Hajja and Al-Mahweet governorate, Taiz mountains, around Madinet Al-Sharq, West Huth and West Al-Makhdeer (Ibb). The range of altitude of these mountains is between 1,000 to 1,800 m above sea level.

Southern mountains. They include mountains of Mukeyras, Al-Dhalaa, Yafea Al-Sufla, Jabel Eraf, Al-Awaleq Al Sufla, Lodar, Modia and Hadramout hills; and range between 1,000 to 1, 800 m above sea level.

High-altitude Mountains: They lie above 1,800 m and include mountains of Ibb, Dhamar, around Sana'a, Alturba, Saber, Reyma, Jabel Abran and Hajjah.

High eastern mountains: They form the division between the wadies flowing west into the Red Sea and East into the desert. They include mountains east plains of Dhamar and Amran, Huth east and north Rada,

[21] - Cf- Country Report on the State of Plant Genetic Resources for Food and Agriculture – FAO - February 2009

as well as mountains between Rada and Al-Bayda, and between Abyan and Al-Bayda. Their altitude is above 1,800 m above sea level.

Medium altitude eastern mountains: They lie between 1,200-1,800 m and drop gradually into eastern desert. They include mountains east Saada, around and West Merib, North Al-Bayda, Bayhan and North Attaq.

3. High plains: They include plains above 1,800 m such as plains of Saada, Sana'a, Dhamar, Rada'a, Qa Bakil Qa Haql and Qa Shara and those that lie in less than 1,800 m, including the Al-Qaeda plains.

4. Eastern desert (plateau): They cover the northern boundary of Yemen and drop gradually from 1,000 m towards the north east to less than 500 m and include the area east and north Merib and Ramlet Al-Sabaateen.

Environmental and Social Features and Vulnerability of Proposed Project Area

Environmental Features

Climate Change and Meteorological Variability

Yemen is characterized by unusually dry conditions. This is primarily due to two particularly important factors, namely (i) the situation of the coast that is rather well protected from the southern winds from the Indian Ocean and the Arabian Sea, as well as western winds from the Red Sea; and, (ii) the mountainous regions natural barriers in the North Central wadies which decreases the amount of rainfalls. The great part of the country is under the influence of transitional tropical conditions. Rainfall is not as abundant as found in areas with the same latitude thereby giving rise to variant tropical conditions.

The climate of Yemen varies mainly with altitude from a hot and dry desert climate in the low lying South East and West regions to a temperate in Southern, Central and Northern highlands. Based on climate, Yemen has traditionally been divided into five climatic zones, and these are: Coastal areas, Southern Uplands, Central Uplands, Northern Highlands, and Eastern plateau. Mean annual temperature ranges from less than 12° in the highlands to above 30° in the coastal areas. In summer, temperature may rise, up to 40° in lowlands and above 40° in the desert of eastern region. In winter temperature may decrease below zero in the highlands, where it may cause some damages to the crops due to the frost. Mean relative humidity ranges from 30% in arid zones of the eastern region to above 80% in coastal areas, and generally becoming less in winter during the months of January to April.

Climate and disaster risk screening performed as part of project preparation indicates that global warming will lead to higher-than-average rainfall and increased frequency of drought in Yemen. Vulnerability to climate change[22] and infestations of swarming locusts are exacerbating Yemen's dire food insecurity[23], creating a crisis within a crisis. In 60 years, climate change has triggered the strongest alterations in water temperature in the Indian Ocean. Warmer seas create more extreme rainfall as well as stronger and more frequent cyclones and strong winds, providing ideal conditions for locusts to hatch, breed, and disperse widely and rapidly. The geographical location of Yemen makes the country highly vulnerable to climate

[22] This project will address the vulnerability to climate-induced locust upsurge by strengthening capacity for ex- ante surveillance and control operations. It will support investments in monitoring and control of locust population, as well as build resilience by rehabilitating the livelihoods of locust-affected communities.

[23] Recent research (WFP-2020) show that a small swarm (1 km2) can comprise as many as 80 million locusts and can consume the same amount of food in one day as 35,000 people.

change risks and impacts, and significantly threatens food safety and security, and intensifies the development of locust swarms. Undoubtedly, Yemen's regional importance cannot be overstated when it comes to locust breeding and infestations. In fact, Yemen is one of the key desert locust breeding grounds, where swarms develop in several locations throughout the year and then disperse across the country and region, negatively affecting the food safety and security, and livelihoods of tens of millions of people across East Africa, the Middle East, and South Asia[24]. The situation is extremely alarming and deteriorating rapidly, with widespread breeding in the region progress and new swarms starting to form, representing an unprecedented threat to food security[25].

Land use pattern

Current data from FAO show that only about 2.91% of Yemen territory is, considered to be arable land, and less than 0.6% of the land is planted with permanent crops. About 6,801Km² of the land is irrigated. According to the United-Nations26, Yemen has 19,550Km² of forest and other wooded land, which constitutes almost 4% of total land area27. More specifically, the country has about 2 million hectares of marginal lands, grown once each 3-4 years; 3 million hectares as forest, and about 16 million hectares as natural range land and pasture.

Table 3- Some Yemen Statistics

▪ Yemen 2020 population is estimated at **29,825,964** people at mid-year according to UN data.
▪ Yemen population is equivalent to **0.38%** of the total world population.
▪ Yemen ranks number **48** in the list of countries (and dependencies) by population.
▪ The population density in Yemen is 56 per Km^2 (146 people per mi^2).
▪ The total **land** area is 527,970 Km2 (203,850 sq. miles)
▪ **38.4 %** of the population is **urban** (11,465,414 people in 2020)
▪ The **median age** in Yemen is **20.2 years**.

Source: https://www.worldometers.info/world-population/yemen-population/#:~:text=Yemen%202020%20population%20is%20estimated,year%20according%20to%20UN%20data.

According to latest UN data on worldometer (*i.e. 12/13/ 2020*), Yemen population is estimated at **29,825,964 people**. Yemen is about 527,970 Km², of which 1,47 million hectares are cultivated and nearly 65% are in rural areas; and about 56% of the population are involved in agriculture. Agricultural sector in Yemen contributes about 20% to the total internal revenues of the country; it employs around 54% of the total workforce. The agriculture and food sector is also the main source of employment for rural women in Yemen. 59% of rural women work in agriculture, although they face many constraints, including limited access to land ownership, finance, markets, livelihood activities, and information, aside from legal and cultural restrictions on economic independence. According to the Ministry of Agriculture and Irrigation statistics28, the total agricultural area is estimated at 1,668,858 ha, of which, 1,132,910 ha (68%) is cultivated while the uncultivated area was 535,948 ha (32%). Out of the total cultivated area, 528,643 ha (47%) is rainfed, 434,207 (38%) is well irrigated, 40 801 ha (4%) is spring irrigated, and 129,259

[24] According to FAO, as of mid-March 2020, 23 countries from Yemen to Pakistan to Tanzania have been affected, with risk of new outbreaks in the Sahel in June/July, and possibly North Africa by the end of 2020.
[25] According to WFP, the ultimate cost to end the 2003-2005 locus plague that invaded **11 Western African countries** with desert locust swarms and severely disrupted agricultural production in many areas already suffering from food security was estimated to be **$450 million** and caused an estimated **$2.5 billion** in crop damage.
[26] Yemen Biodiversity and Tropical Forest: 118/119 Assessment Report, United-Nations, October 2013.
[27] Cf. https://en.wikipedia.org/wiki/Geography_of_Yeme
[28] Cf- Country Report on the State of Plant Genetic Resources for Food and Agriculture – FAO - February 2009

ha (11%) is flood irrigated. The arable land is divided in 1,115,515 holdings, of which an estimated 69% are small farms (<2 ha), 29% are medium size holdings (2-5 ha), and about 2% are large holdings (>5 ha).

Hydrology: Rainfall patterns, water quality and irrigation services

Rainfall has generally a bimodal pattern with two rainy seasons, the first is during February, March and May, and the second in July to September and October which is the heaviest rainy season. The average annual rainfall varies from less than 50 mm in coastal areas up to 1,000 mm in the Southern uplands mainly around Ibb. In general, rainfall increases with distance from sea towards the foothills with 300-400 mm and then decreases gradually from the central highlands towards the capital Sana'a with an average of 250 mm and again increases towards Saada, Haja and eastern governorates.

Crop production system: Crop production system in Yemen is generally reflected by the availability of water supply as being the most important factor. The cultivated area may vary from year to year depending mainly on the amount and distribution of rainfall. Crop production system can be divided into two types as depending on water supply:

Rainfed farming system: This system can be classified into three categories:

The low rainfed system with rainfall average < 450 mm,

The moderate rainfed with rainfall average between 450–620 mm; and

The high rainfed system with rainfall average > 600 mm.

Major crops grown under rainfed farming are: sorghum, wheat, barley, millet and legumes. Barley is considered to be the base of dry land farming system in the highlands while millet is a marginal crop of lowlands and sand dunes.

Irrigated farming system: There are two types of irrigation under this system. These are flood irrigation, basically used in coastal region and the deltas. Crops predominantly grown under this system are sorghum, millet, cotton, cucurbitas, legumes, sesame and groundnuts.

Wells and springs irrigation farming system: It forms the base of intensive agriculture mainly for cash crops such as qat, vegetables, fruits and forage crops. Under such system intercropping and crop rotations can be easily utilized.

Agriculture & livestock

Agriculture has traditionally been the mainstay of Yemen's economy, reportedly generating more than 20 % of gross domestic product (GDP) {20.4 % in 2005 according to the Central Bank of Yemen} and employing more than half (54.2 % in 2003) of the working population. Three quarters of the rural population depend on subsistence agriculture for meeting their food requirements. However, U.S. Government (USG) and World Bank estimates suggest that the sector accounted for only about 8 % of GDP since 2008 Cereal areas have declined since the nineteen-seventies, but they remain the major crop, covering about 600,000 ha in 2000, (about 54 % of the cultivated area). Areas of rain-fed cereals are highly variable between seasons. Cereal yields are relatively low, between 0.6 and 1.6 tons/ha, averaging 1.2 tons/ha Sorghum is the most common crop.

Agricultural development is limited by factors such as soil erosion, sand dune encroachment, deforestation, and water scarcity. Yemen's overall water crisis threatens entire regions and represents the country's most critical issue. Yemen's annual rainfall is only about 125mm (about 5 inches) per year, consequently, agriculture in Yemen relies heavily on the extraction of groundwater and many aquifers are quickly and severely being depleted, falling an average of about two meters (2m) a year. The use of irrigation has made fruits and vegetables Yemen's primary cash crops. With the rise in the output of irrigated crops, the production of traditional rain-fed crops such as cereals has declined. According to the Central Bank of Yemen, the 2005 production of Qat, a mild narcotic heavily used by Yemenis, rose 6.7 % and accounted for 5.8 % of GDP. According to the World Bank and other economists, cultivation of this plant plays a dominant role in Yemen's agricultural economy, now constituting 10 % of GDP and employing an estimated 150,000 persons, consuming an estimated 30 % of all irrigation water and displacing land areas that would otherwise be used for exportable coffee, fruits, and vegetables.

Map 4: Seasonal trend of Vegetation Condition in Yemen over cropland

Source: CATS & FAO & Partners Agrometeorological updates, Sept.11-20, 2020

Livestock production makes up about a quarter of Yemen's agricultural market with nearly 80% of farms raising livestock. Women are prominent workers in animal production activities. The Agriculture and food sector is also the main source of employment for rural women in Yemen. 59% of rural women work in agriculture, although they face many constraints, including limited access to land ownership, finance, markets, livelihood activities, and information, aside from legal and cultural restrictions on economic independence.

Livestock in Yemen are mainly cattle, sheep, goats and camels. There are several breeds of sheep and goats in Yemen and the cattle are predominantly horned, small bodied Zebu (Bos indicus) with a thoracic hump. All cattle, sheep and goats are small. The average adult weight of cattle is 250 kg. Sheep and goats are 25 and 22 kg respectively. Camels are kept mainly in coastal areas and in the eastern desert. They feed on salty and thorny trees, shrubs and dwarf (Acacia, Ziziphus, Suaeda, Salvadora, Lycium). Their productivity is not well documented, but they contribute significantly to plowing and transport in remote areas. Donkeys are kept in rural areas and are usually left to graze freely. They are used for transport of

fuel, water, crop, fodder, and goods. Farm animals are kept for meat, milk, sour milk (laban), butter (ghee) and draught power, together with wool, skin and manure[29].

Biodiversity & forests (fauna and flora)

From a Yemen ecological standpoint, Scientists have identified over 3,000 plant species in Yemen, 15% are endemic. The Islands of Socotra, one of only 188 UNESCO World Heritage sites designated for unique and important nature, contains more than 800 plant species, with 260 being endemic. According to the WWF Global 2000 analysis, Yemen hosts 4 globally important eco regions key to international global diversity: (1) Red Sea, (2) Gulf of Aden/ Arabian Sea, (3) Arabian woodlands, and (4) Socotra.

Yemen has 7 amphibian species, 120 types of reptiles, 236 bird species, and over 85 categories of mammals. Loggerhead and green sea turtles remain under continuous threats from poachers who indiscriminately and illegally kill vast numbers each season. Taking range along the Yemeni coastal waters is the Dugong, a mammal closely related to elephants and manatee that weighs in up to 500 kg when full grown. In the high mountains, Arabian leopards, threatened with extinction, are of concern both in Yemen and Oman. Yemeni waters have a great diversity of fishes largely because of the upwelling phenomena in the southern water Gulf of Aden/Arabian Sea. The Yemen Sea is home to 416 recorded species and 169 recorded species from Socotra Archipelago. The Arabian Peninsula is an important "land bridge" between Africa, Asia and Europe for approximately three billion birds that annually migrate along north-south or east-west routes.

The impacts of swarms of desert locus will have some adverse impacts on the sustainability of this rich ecosystem and biodiversity in Yemen. That's why the YDLRP project will foster curbing the spread of desert locust swarms by implementing control measures, building a national monitoring and response capacity, and helping to restore the livelihoods of farmers in areas affected by locusts.

Socio-economic features

Population and demographics

The 2020 estimates put Yemen at about 29,825,964 inhabitants[30]. The high rate of annual population growth (3.01%), despite the ongoing near 7-year civil unrest, is attributed to the high fertility rate, caused by low female education and employment. Between 2000 and 2012, the urban population rose from 26% to 32%, whereby the rural population decreased from 74% in 2000 to 68% in 2010. Such decrease is perceived to be caused by an increased immigration to urban cities (rural exodus) and the effects of the war. About 46 % of the population is under age 15; slightly more than half are between 15 and 64; and less than 3% are 65 and older,

Yemen's citizens are almost exclusively Muslim with about 30 % belonging to the Zaydi sect of Shia, and about 70% following the Shafii school of Sunni. A few thousand Ismaili Muslims live in northern Yemen. While Yemen's constitution guarantees freedom of religion for Yemeni citizens, it is prohibited to try and convert Muslims or proselytize them; public schools provide instruction in Islam but not other religions; and only Muslims are allowed to seek public office.

[29] Yemen Biodiversity and Tropical Forest: 118/119 Assessment Report, United-Nations, October 2013.
[30] Yemen's Country Report contributing to The State of the World's biodiversity for Food and Agriculture, August 2016.

In rural Yemen people live in scattered settlements, which makes access to necessary services difficult. There is an imbalance in the population distribution between south and north governorates, as well as between rural and urban areas, putting a strain on available resources.

Figure 1: Ethnic composition

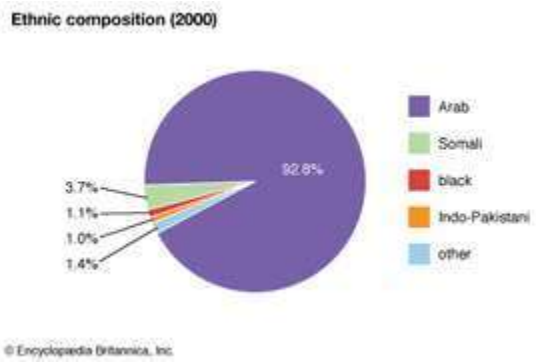


Table 4: Governorates of Yemen

Governorate	Capital City	Area [2] km²	Pop (2004) [3]	Map Key
'Adan	Aden	825	589,419	1
'Amran	'Amran	9,013	877,786	2
Abyan	Zinjibar	20,380	433,819	3
Ad Dali'	Ad Dali'	4,448	470,564	4
Al Bayda'	Al Bayda	10,487	577,369	5
Al Hudaydah	Al Hudaydah	15,407	2,157,552	6
Al Jawf	Al Jawf	46,170	443,797	7
Al Mahrah	Al Ghaydah	78,073	88,594	8
Al Mahwit	Al Mahwit	2,452	494,557	9
Amanat Al Asimah	San'a'	126	1,747,834	10
Dhamar	Dhamar	8,705	1,330,108	11
Hadramaut	Mukalla	195,626	1,028,556	12

Hajjah	Hajjah	9,376	1,479,568	13
Ibb	Ibb	6,031	2,131,861	14
Lahij	Lahij	14,003	722,694	15
Ma'rib	Ma'rib	19,529	238,522	16
Raymah	Hajjah	2,239	394,448	17
Sa'dah	Sa'dah	14,364	695,033	18
Sana'a	San'a'	13,730	919,215	19
Shabwah	Ataq	45,519	470,440	20
Ta'izz	Ta'izz	11,573	2,393,425	21
Suquṭra	Hadibou	3,796	175,020	22

Source : CATS & FAO Project Team, October 2020

Human Development Index

Education: According to World Bank indicators, almost 60% of Yemeni adults do not read or write. With most of the labour force concentrated in the agricultural sector, few Yemeni's ever develop advanced skills. The largely unskilled labour force is a result of the poor quality of Yemen education system.

Health (include issues of COVID-19, Cholera, IST/ HIV-AIDS): Yemen's health statistics are among the worst in the Middle East and at the lower spectrum of sub-Saharan African nations. According to the World Bank data survey, Yemen's 2011 infant mortality rate was 58 deaths per 1,000 live births (50% higher than the world average and twice the average of the Middle East). There is a significant gap in meeting the health care needs, especially for the poor. Inadequate health and social services are believed to be among the contributing factors to ongoing civil unrest and the secessionist movements throughout the country. The implementation of the current project YDLRP is expected to have some negative impacts on the well-being of Yemeni if no tangible mitigation measures are taken on time such as a strong and highly participatory and inclusive awareness raising on the safe acquisition, usage, and disposal of pesticides/insecticides containers.

The ongoing civil war conflict in Yemen has seriously devastated its health infrastructure, with a much disproportionate impact on women and children31, and more precisely vulnerable groups. This situation has subjected Yemenis to repeated disease outbreaks and malnutrition, and substantially increased vulnerabilities. Civilians continue to bear the brunt of the conflict, with close to 100,000 Yemenis having been forced to flee their home since the beginning of the year. After nearly seven years of violent conflicts and civil causalities, more than 12 million children and 6 million women of childbearing age need

[31] - The ongoing civil war in Yemen over the past near seven years has made it extremely difficul for woman or children to be at nowadays.

humanitarian assistance. Their health, nutrition, safety and education are already at risk as systems collapse as a result of the ongoing violent threats and fighting.

The situation of vulnerable people like displaced people, more than half of them women and 27% of whom are below age 18, migrants and refugees, as well as people in detention centers, is particularly concerning as they traditionally face barriers when accessing health care while living in harsh conditions. Yemen remains the world's fourth largest internal displacement crisis due to conflict. Over a million of pregnant women are presently reported malnourished. Furthermore, most of the 3.6 million displaced live in unsanitary and overcrowded conditions, making both physical social distancing, mask wearing and regular handwashing impossible. They are also often blamed for disease outbreaks like COVID-19 and Cholera. As COVID-19 pandemic hits hard and continues to spread throughout Yemen and in the sub-region, their future will be at even greater risk, if tangible measures are not immediately put in place; in addition to fighting the plight of desert locust swarms.

Social Welfare/Protection (include aspects of IDPs, Refugees): The social protection policies in Yemen32 came about as a result of the nature of the problems faced by the country and especially the challenges of poverty, human development and building civil society institutions. Thus the development plans over the past years aimed at integrating poverty reduction issues within the economic and social development plans, with a focus on the issue of the safety net, social protection and the social development of partnerships with civil society organisations in cooperation and coordination with international donors. The legal framework of social protection in Yemen depends on constitutional arrangements in the Constitution Article 24: “The State shall guarantee equal opportunities for all citizens politically, economically, socially and culturally”, and emphasised by Article 25, which states “The Yemeni society [is] based on social solidarity, based on justice and freedom and equality”. The framework therefore focused on social protection objectives and a set of integrated tools that seek through the activities of the organisation to achieve the principle of equal opportunities and maximise the life chances of members of the community, and at a minimum, to provide the satisfaction of basic needs. Laws were passed in various fields, including insurance and pension law no. 25 of 1991 and the Social Welfare Law no. 31 of 1996, in addition to the components of the Social Safety Net.

According to IOM’s Displacement Tracking Matrix (DTM) of June 16 2020, there are now over 46,660 internally displaced families (IDP) in Yemen since the beginning of this year. The IOM/DTM for June reported the highest numbers of displaced households in Hajjah (17,484 families), followed by Al Dhale’e (8,848 families) and Al Hudaydah (8,031 families), respectively. These displacements were combined results of both the on-going intense civilians’ fighting and flash floods due to recent heavy rain falls in these regions.

Poverty & Youth Employment: The dramatic deterioration of conditions in Yemen has translated into a significant worsening of the poverty level, especially amongst the most vulnerable and culturally disadvantages rural communities. More than 50% of Yemenis between the ages of 18 and 24 are unemployed (UNDP 2017). It is estimated that around 80% of the population (~24 million) lives below the poverty line (World Bank 2019). In addition to monetary poverty, up to 80% of households experience

[32] - Social Protection and Safety Nets in Yemen, Ali Azaki, December 2015

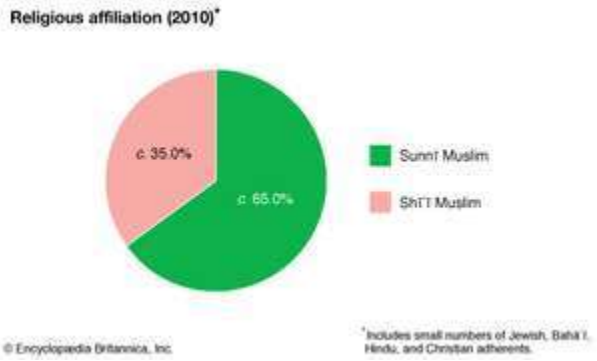
many overlapping monetary and non-monetary deprivations (World Food Programme 2020). Recent statistics on the situation in Yemen are as follows:

- Half of the population lives on less than $2 a day.
- Child malnutrition rates in Yemen are among the highest in the world.
- Increased political and religious violence in the country.
- Nearly 49% of Yemeni women are illiterate.

The average unemployment rate in Yemen between 1991 and 2017 was 13.09% with a minimum of 8.34% in 1994 and a maximum of 17.82% in 2010. Presently, all public services employee are without salaries for over 36 months.

Language/Culture & Religion (in the project targeted areas): Arabic is the official national language. English is also used in official and business circles. Virtually all Yemenis are Muslim. Fewer than 500 Jews (i.e. a fraction of the former population) also live in the northern part of the country.

Figure 2: Religious Affiliation



4. POLITICAL, STRATEGIC, LEGAL, AND INSTITUTIONAL FRAMEWORK GOVERNING ENVIRONMENTAL AND SOCIAL RISKS, IMPACTS & OPPORTUNITIES

Safeguard policies are essential tools to prevent and mitigate undue harm to people and their environment (biophysical and human) during the entire development process. When identifying and designing a project, safeguards standards should help assess the possible environmental and social risks, impacts (positive, negative, or cumulative) and opportunities associated with a sustainable development intervention, particularly in the case of YDLRP. During project implementation, safeguards standards should help define measures and processes to effectively manage risks and enhance positive impacts and/or opportunities. The process of applying safeguard standards can be an important opportunity for stakeholder consultation, participation, inclusion, and engagement, enhancing the quality of project actions and increasing beneficiaries' ownership and social accountability. The blending of all the above is the key to project sustainability, especially in a conflict, civil war-prone and FCV-labelled country.

4.1 Political and Strategic Framework

- National Adaptation Plan of Action (NAPA)

Key national policy, yet more recent and climate change specific though, is the NAPA. As stipulated by the UNFCCC, NAPAs provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and costs at a later stage. On 31 March 2009, Yemen's NAPA was endorsed by Cabinet Decree. The legal promulgation of the NAPA marks a major step for the Yemen and enhances the chances of the country to be eligible to priority development support under the LDC schemes, e.g. through the Global Environment Facility (GEF).

- National Biodiversity Strategy and Action Plan of Yemen (NBSAP)

The goal of the NBSAP is to reverse present negative trends by mobilizing the resourcefulness of the Yemeni people and applying international technical and financial support. Yemen aims at nothing less than the restoration and rehabilitation of its diversity of species, genetic resources, and ecosystems. Specific objectives were identified to govern the thrust of the action plan. These objectives spell out the principles to preserve and use in a sustainable way the irreplaceable biodiversity and natural resources of Yemen. The principles include: a) striving to maintain the integrity of Yemen's land and marine resources and their biotic wealth; b) respect for the intrinsic value of all forms of life, while uses need to be made both sustainable and equitable; c) pursuit of collaborative management agreements and institutions; d) indigenous natural resource management systems of the Yemen people will be supported, protected, utilized and seen as a rich natural heritage; e) responsible public management based on accountability, transparency, participation in decision making and a full analysis of impacts; and, f) the Precautionary Principle (as defined in the Rio Declaration on Environment and Development). The NBSAP is currently undergoing some updates.

- National Food Security Strategy

In response to Yemen's alarming food insecurity situation, the Yemeni government developed its National Food Security Strategy (NFSS), which was adopted by the Council of Ministers in February 2011. The NFSS key objectives are to reduce food insecurity by one third by 2015, to make 90% of the population food secure by 2020, and to reduce child malnutrition by 1 percent annually. The NFSS is multi-sectoral and

includes measures for restructuring the national budget, promoting rapid economic growth, improving risk management, investing in agricultural development and natural resource management, strengthening service delivery particularly for health, family planning, nutrition, and promoting women's empowerment. Because of the prevalence of food insecurity in rural areas, and the strong linkages between agricultural production and food security, a large part of the implementation of the NFSS is through the investment program for agriculture. In particular, the agricultural sector is to contribute to several key elements of the action plan, including goals to: (a) increase incomes through higher productivity and development of value chains; (b) promote high value alternatives to Qat; (c) improve targeting of public investments and improved service provision for agriculture and poverty-reducing rural development; and (d) promote women's empowerment through better access to agricultural assets and services.

- National Agriculture Sector Strategy

To tackle the persistent challenges of the Yemeni agriculture sector, the Government adopted in March 2012 a National Agriculture Sector Strategy (NASS) for 2012-2016. In line with the overall objectives of the NFSS, the NASS aims to increase growth, sustainability, and equity by raising agricultural output, and to increase rural incomes, particularly for the poor. Four specific goals are outlined: i) increase domestic food production through improving input supply, increased farmer awareness, and greater availability of agricultural credit; ii) fight rural poverty through increasing income of farmers, especially women, and continued promotion of rural development; iii) preservation of the environment and natural resources, and activating the role of community participation to ensure sustainability; and iv) improving market efficiency, lessening post-harvest losses and developing the capacity to export.

- NASS update (2013-2017)

Completed in 2013 and provides for new emphasis in production on: (a) improving productivity in rainfed agriculture; (b) more efficient agricultural water management; (c) an increased recognition of the role of rural women in meeting food needs, improving nutrition and protecting the environment; (d) a strong focus on improving productivity and sustainability of livestock production (as livestock is the principal asset and economic activity of the poorest and landless); and (e) diversification of cropping patterns into new or revived cash crops and into more nutritious foods. The NASS update also promotes for a new institutional emphasis on: (a) demand-driven and participatory approach factoring in the needs and views of the farmers, particularly the poorest from the bottom up, (b) a decentralized approach; (c) increased reliance on the private sector and on public/private partnerships wherever feasible, and (d) efficient use of scarce public finances. The NASS update is also consistent with the National Water Sector Strategy and Investment Program (NWSSIP, 2008-2015) which has its goal for agricultural water to maintain a profitable, economically efficient, equitable and sustainable agriculture.

- National Water Sector Strategy and Investment Program (NWSSIP)

The Government of Yemen is aware of the challenge that the country's water problems pose for water supplies and achieving food security and has taken some significant institutional steps over the past years. Strategic planning began in the early 1990s. In 1996, the National Water Resources Authority (NWRA) was created to implement an integrated approach. A water law was enacted in 2002, and in 2003 the Ministry of Water and Environment (MWE) was established. MWE prepared a consolidated strategy, action plan, and an investment Program 2005-2009 (NWSSIP), adopted and published by the government in 2004. In

late 2007, the government decided to prepare an update on NWSSIP 2009-2015 to adjust policy and program measures, and particularly focus on incorporating irrigation more fully into an integrated water resources management and regulatory framework.

The National Water Sector Strategy and Investment Program (NWSSIP) update for 2009-2015, prepared by the MWE, has been formulated to deal comprehensively with the water sector related issues. It also addressed discrepancies in the sub-sector (water resources, Urban Water Sector Support (WSS), rural WSS and irrigation) in order, to harmonize and promote the interests of all the stakeholders. The objectives of the NWSSIP are to:

• Ensure coordination among all partners working in urban and rural water supply and sanitation sub-sectors, within and outside the MWE.

• Ascertain that policies in each of these two sub-sectors are unified and that investments are equitably allocated among governorates according to unified rules and that no projects are duplicated, especially in rural areas, so as to ensure that investments complement each other.

• Ascertain integration of water policies and national policies of sustainable growth and poverty reduction.

• Ensure that sector financing effectively supports sector goals.

• Monitor and evaluate performance.

The YDLRP has made provisions in the implementation and achievement of the above policy objectives in the framework of the concept of comprehensive and integrated development for the improvement of agricultural production and achieving food security- both plant and livestock - along with poverty reduction.

4.2 Policy, Legal and Institutional Framework

This section discusses and summarizes the provisions of Government of Yemen's key policy, legal and institutional framework for environmental and social management in Yemen in general, and the safe and secure usage of pesticides in particular, and subsequently indicates how this ESMF complies with these requirements.

The section also discusses other international policies/standards/regulations on environmental and social as well as both FAO and WB Environmental and Social Safeguards Standard in terms of compliance and concurrence. Afferent to the YDLRP, that will be using authorized pesticides, the use of integrated pest control measures in Desert Locust control has to adhere to various applicable policies and laws nationally and internationally with the aim of managing the pests rather than seeking to eradicate them.

Multilateral Environmental and Social Treaties

The Yemeni Government is a signatory to several internationally binding multilateral environmental and social agreements. Among the international commitments, conventions and agreements, the following protocols on agro-biodiversity and natural resources, oceans and seas, hazardous materials and chemicals, atmosphere and air pollution, and health and workers' safety interfere with or are relevant to the YDLRP project activities:

Table 5: Some legally binding international texts on the environment and social dimensions:

Conventions / Agreements	**Date of adoption or ratification**
Climate and Atmosphere	
The Montreal Protocol on Substances that Deplete the Ozone Layer and its amendments	9/16/1987
United-Nations Framework Convention on Climate Change (UNFCCC)	June 30, 1994
Stockholm Convention on Persistent Organic Pollutants (i.e. a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically and accumulate in the fatty tissue of humans and wildlife).	December 05, 2001 January 9, 2004
Vienna Convention for the Protection of the Ozone Layer	December 19, 1994
Kyoto Protocol to the UNFCC	Dec. 11, 1997/Feb. 16,2005
Civil Responsibility for Damage from Oil Pollution,	April 14, 1979
Paris Agreement	April 22, 2016/Nov.4,2016
Land and physical cultural resources	
The Convention on the Protection of World Cultural and Natural Heritage	September 14, 1982
Biodiversity and Natural Habitats	
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	3/3/1973 & 6/22/1979
Convention on Biological Diversity (CBD)	December 1st, 2005
Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitats	Jan. 24, 2000
Convention on the Conservation of Migratory Species of Wild Animals (CMS) → (P#100)	December 1st,2006
Other: Environmental Modification, Hazardous Wastes, Law of the Sea, the Rio Declaration on Environment and Development, The Universal Declaration of Human Rights, and The International Labor Organization (ILO) Conventions.	

Source: CATS – October 2020

National Regulatory and Legal Framework for the E&S applicable to the Project

Several policies, strategies, and plans developed in the past by Yemen are relevant for the proposed project. These are presented below for context, noting that in the current conflict situation they are overall dormant. The YDLRP design has been well-informed by these policies.

Environmental and Social Policy, Strategies and Law in Yemen

The environmental and social related polices and laws in Yemen include inter alia: the Environment Protection Law (EPL) number 26 of 1995, forming the basis for environmental protection, issuance of permits, and environmental and social impact assessments (ESIAs). The provisions of this law are implemented through Executive Regulations (by-Law 148-2000), issued by a decree of the Council of Ministers to protect the environment, natural resources, society, and health. In addition, the law is designed to protect the national environment from activities practiced beyond national boundaries and to implement international commitments ratified by the Republic of Yemen in relation to environmental protection, control of pollution, conservation of natural resources, and such globally important environmental and social issues, such as ozone layer depletion and climate change.

The law equally stipulates the incorporation of environmental and social considerations in economic development plans at all levels and stages of planning for all sectors. It also requires the preparation of ESIAs for projects proposed by the public and private sectors. However, to date there is still no regulatory framework to support the implementation of the EPL and the provision of undertaking ESIAs for projects is not strictly enforced. ESIA studies should be undertaken by an independent authority.

Equally important, environmental standards and specifications have been prepared by the former Environment Protection Council as annexes to the Executive Regulations, covering potable water quality, wastewater quality for agriculture, and ambient air quality, emissions, noise, biodiversity and protected areas. These include standard application forms intended for use by all relevant government bodies. Also, there are other policies, strategies, and programs in Yemen to safeguard the broader Environment (physical and natural). The list of these policies, strategies and programs are:

- National Environmental Action Plan;
- Environment & Sustainable Investment Program;
- Biodiversity Strategy;
- Environmental (and Social) Impact Assessment Policy for the Republic of Yemen;
- Reports on the State of Environment (by Environment Protection Authority [EPA]);
- Evaluation of Future Development of the EIA System in Yemen etc.;
- National environmental and social laws and regulations, and the operating procedures of SWF;
- The 1990 Reunification Constitution of Yemen;
- Labor Law,[33] Act No.5 of 1995, includes Occupational Health and Safety (OHS) requirements for workplaces that need to be applied in the project.

[33] More details regarding Yemen Labor Laws are included in the project LMP document.

- The Labor Law (Law 5/1995) states that women are equal to men in all aspects without any discrimination, and that equality should be maintained between women and men workers in recruitment, promotion, wages, training, social insurance. It also regulates work time for pregnant women.
- The Labor Law regulates the rights and wages of workers, their protection, occupational health and safety. In addition, the Social Insurance Law regulates retirement compensation.

- Yemen has ratified ILO Convention Number 138 on Minimum Age for Admission to Employment (Law 7/2001). The Convention establishes a minimum age for admission to employment.

- Yemen has also ratified the ILO Convention 182 on the Worst Forms of Child Labor. It refers to child labor as work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling by depriving them of the opportunity to attend school, by obliging them to leave school prematurely; or by requiring them to attempt to combine school attendance with excessively long and heavy work.

Pesticide Law in Yemen

The Pesticides Law was decreed in 1999 (Law No. 25 of 1999) and includes seven chapters and 36 articles. Executive regulations for enforcement are to be issued by resolution of the Minister of Agriculture and Irrigation. A registration guide and executive regulations were prepared to facilitate enforcement. Penalties for violations are stated. The law's objectives are to regulate the handling, registration, and inspection of pesticides and to avoid the poisonous effects on humans, and animals, the environment, and economically beneficial insects. The competent authority for enforcing the law is the General Directorate of Plant Protection (GDPP) of the MoAI, and the Directorate is to coordinate its work with the EPA. The Pesticides Law provides the national legal basis for the application of the World Bank's ESS 3: Resource Efficiency and Pollution Prevention and Management. The list of prohibited and smuggled pesticide in Yemen is attached in Annex 4.

To better control the quality of imported pesticides, the government established the "Pesticides Formulation Laboratory". In 1999, Parliament approved the Agricultural Pesticides Act. Procurement of pesticides is envisaged under the project. Precautions to avoid excessive and improper pesticide use are required. A mechanism will be put in place to demonstrate Integrated Pest Management procedures and to develop a farmer education program that stresses good and safe practices for storage and application of pesticides.

Water Law

The Water Law was issued in 2002 (Law No. 33 of 2002) and modified in 2006 after the creation of Ministry of Water and Environment (MWE). Its by-law was issued in 2011 by the Cabinet decree. The law defines water resources as any water available in the republic's territory and its share of common waters jointly owned with neighbouring countries. This is comprised of ground water, surface water, wastewater after purification, and saline water after desalination. The law's main objective is to regulate, develop, sustain and increase efficiencies in water utilization, protect from pollution, transport, and engage the beneficiaries of water installations in participatory management, investment, development, operation, maintenance and preservation at the various stages of development. Water is considered as a common property accessible to all.

Management of water resources is entrusted to the National Water Resources Authority (NWRA), which assesses the resources, classifies water basins and zones, and prepares the national water plan, which is considered as one of the components of national economic and social planning. Drinking water and domestic use have absolute priority. Then in declining priority, watering livestock, public utilities, irrigation, industrial purposes, minimal level of environmental needs. For these uses, water distribution and transport should be done according to sanitary means.

The responsibility of sustainable water management in the irrigation sector and the setting up of operation and maintenance of irrigation structures is delegated to the Ministry of Agriculture and Irrigation (MAI). Moreover, MAI should provide protection from floods, soil and wadi banks erosion, maintain agricultural terraces and prevent the expansion of industrial or other infrastructure at the expense of wadi or rainwater runoff channels. Existing and acquired water rights prior to the issuance of the law will be maintained, except in special cases when fair compensation will be ensured. Traditional water rights of rainwater harvesting and natural runoff flow in relation to irrigation shall be maintained. The same applies for the traditional rights on natural springs, streams, and creeks. The Water Law and its by-law are a notable achievement in Yemeni legislation and provide important legislation for environmental and social management of YDLRP proposed activities.

Cooperatives Societies and Unions Law (Law No. 39 of 1998)

Law 39 of 1998 relates to Cooperative Societies and Unions, the organizational and legal reference for all cooperatives and cooperative unions in the Republic of Yemen. This law is relevant to the YDLRP since it addresses community mobilization and engagement in terms of collective actions that would lead to better community involvement in the design, implementation and operationalization and maintenance of the coping measures and the income generation activities.

Law no. 39 of 1998 grants a relevant Ministry and its departments and branches in the governorates the right to supervise and assure compliance with relevant laws, and provide advice and technical assistance to the cooperatives to plan their activities as well as to attend their General Assembly meetings. It defines five specific types of cooperatives. Any other type of cooperative, such as Agricultural Cooperative Union (ACU) and its branches in the country can be created according to the provision of Article 142, which states that it is lawful to establish other cooperative societies, according to provision of this Law, in other services. More specifically, Article 142 stipulates that a decree of establishment under appropriate line Ministry shall be developed and forwarded to the Ministry of Social Affairs and Labor for approval and issuance.

Water User Associations (WUAs) which were supported by water law are eligible under the law 39 of 1998. These associations have the privileges granted to it by law, as well as the support of the Water Law.

4.3 Applicable WB/FAO and Yemen Environmental and Social Safeguards Standards/Policies

4.3.1 Proposed applicable WB/FAO Environmental and Social Safeguards Standards to YDLRP

This project has been screened against WB and FAO environmental and social safeguards standards, consistently with applicable national environmental and social management regulations. These 10/8 safeguards standards covering respectively the main environmental and social questions that must be

considered when starting the preparation and/or implementation of a project and determining social and environmental safeguards compliance and performance, using best international practices.

Table 6. Correspondences between WB & FAO Environmental and Social Safeguards Standards/Policies

WB Environmental and Social Framework – Environmental & Social Standards (ESS)	FAO Environmental and Social Safeguards (ESS)
ESS1 – Assessment & Management of Environmental and Social Risks & Impacts ESS9 – Financial Intermediaries ESS10 – Stakeholder Engagement and Information Disclosure	ESS1 – Natural Resources Management
	ESS8 – Gender Equality
ESS2 – Labour and Working Conditions	ESS7 – Decent Work
ESS3 – Resource Efficiency and Pollution Prevention & Management	ESS5 – Pest and Pesticide Management
ESS4 – Community Health and Safety	ESS7 – Decent Work (partially)
ESS5 – Land Acquisition, Restriction on Land Use and Involuntary Resettlement ESS10 – Stakeholder Engagement and Information Disclosure	ESS6 – Involuntary Resettlement and Displacement
ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources	ESS2 – Biodiversity, Ecosystems, and Natural Habitats
	ESS3 – Plant Genetic Resources for Food & Agriculture
	ESS4 – Animal – Livestock and Aquatic Genetic Resources for Food and Agriculture
ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	ESS9 – Indigenous Peoples and Cultural Heritage
ESS8 – Cultural Heritage	

Source: CATS, October 2020

There are no apparent material differences between FAO and WFP ESS policies. In any case ESF will take precendence if such occur.

4.3.2 Gap Analysis between National laws and ESF

FAO carried out a gap analyisis to compare the national laws and ESF provisions. In general, the below cases have been identified:

- National requirements and ESF objectives are aligned, and complement each other. FAO will apply both the ESF and the national requirements.
- National requirements and ESF objectives are not aligned and there is a gap between them. FAO will apply the ESF.
- ESF does not include National requirement , FAO will apply the national requirements

5. IDENTIFICATION & ASSESMENT OF POTENTIAL ENVIROMENTAL AND SOCIAL SAFEGUARD RISKS, IMPACTS & OPPORTUNITIES OF DLRP

5.1 Overview of YDLRP Environmental and Social Risks, Impacts and Opportunities

The potential adverse environmental and social impacts from the implementation of some activities from component 1 (Surveillance and control measures), component 2 (Livelihood protection and restoration) and component 3 (Coordination and early warning preparedness), more precisely sub-component 1.2 "Improving control measures", sub-component 2.2 (Rehabilitating agricultural and pastoral livelihoods) and, sub-component 3.1 (Improving the infrastructure and institutional capacity of the national locust control centres) that will support, inter alia, the procurement and application of pesticides and biopesticides[34], the restoration of affected communities livelihoods, as well as the physical and technical rehabilitation of key research centres (DLCCs). The main potential environmental and social risks and impacts are associated with: (i) the procurement, transport, handling, storage of the pesticides, dosage during treatment and disposal of empty pesticide containers; (ii) the risk of polluting fragile ecological habitats such as wetlands, national parks and water bodies; (iii) risks of contaminating pasture, local water sources and sensitive agronomical areas, (iv) risks of poisoning and contamination of field officers who are directly involved in handling and spraying operations, as well as communities who might be exposed to pesticides; and at a much lesser extent, (v) likely acquisition of land for household related food and income generating activities (horticulture, beekeeping/honey production, etc.) and/or the construction of new DLCCs. Accordnily, PPMP will be used by the project and during the implementation period as well as the Ressetlement Framework.

As regards to (i) sub-component 2.1 (i.e. *safeguarding food security and protecting human capital for enhanced resilience & support the provision of short-term employment opportunities to beneficiaries under the CFW program of the Yemen SFD, focusing primarily on engaging women*), such opportunities (described in more details under Project description) could potentially include clearing dead locusts from affected agricultural lands, planting crops, rehabilitating small reservoirs, collecting untreated locusts for feed and fertilizer, (re)introducing pollinators, and providing childcare near CFW sites for working women. Women may also receive training related to health and nutrition and hired as community health workers in project targeted areas; and (ii) sub-component 3.1, activities (i.e. construction of 1 new DLCC in Aden, plus 3 regional centres/units in Hodeida, Shabwa and Sieun; and rehabilitate the infrastructure and operational capacity of DLCCs in Sana'a which the ongoing crisis has affected severely).

These interventions under sub-components 2.1 and 3.1 may cause risks and impacts related to construction works (i.e. dust, debris and other solid and liquid waste generation, ground/surface water contamination, and social annoyance and community safety issues (arising from increased traffic, blocked streets, noise, dust, unsafe construction sites, and other sources) as well as risks related to occupational health and safety for workers, particularly women, most of whom are illiterates. These environmental and social risks and impacts are expected to be small in size mostly site-specific, reversible and of low

[34] - Namely the three groups of pesticides reviewed and recommended by the FAO Locust Referee Group: **A. <u>Conventional pesticides</u>**: organophosphates (*chlorpyrifos, fenitrothion, and malathion*) and pyrethroid (*deltamethrin*); B. **Insect Growth Regulator** (*Teflubenzuron*); C. **Bio-pesticides** (*Metarhizium acridum*). The choice of a particular insecticide depends on the specific circumstances and dominant features of the areas concerned.

magnitude, however easily mitigated and manageable, typical of moderate social and environmental risk category projects, by simply following appropriate measures, within the framework of a fragile and conflict-driven environment.

From a social standpoint, by restoring lost assets and providing temporary employment opportunities through the SFD, especially to poor and most vulnerable segments of the beneficiary communities (i.e. women, youth, elderly from the poorest rural households, especially the work-capable individuals of the most-in need ones, etc.), the proposed project will deliver some positive impacts such as a robust social protection response to farmers, livestock owners, beekeepers, and other primary producers experiencing losses as a result of the desert locust swarms crisis (i.e. female farmers, small farm affected households, etc.); but also have some health associated risks for (i) field officers and other locust control personnel adirectly involved in handling insecticides and conducting spraying operations, as well as (ii) local populations exposed to some health risks, especially in areas where spraying is carried out and also through the consumption of pesticide-contaminated food grown in sprayed areas, or the inadvertent/systematic re-usage of insecticides containers for households consumption[35].

Lastly, CFW activities as well as capacity building sessions could possibly exclude vulnerable and very poor groups such as households headed by women, youth/minor child and elderly tenant farmers and sharecroppers. Livelihood restoration activities risk bypassing some of the producers, who have suffered the most from the desert locust swarms crisis, including female and/or youth laborers, small-scale farmers, livestock producers, and beekeepers who are highly dependent on these activities[36].

As regards to construction and rehabilitation activities of some DLCC, though efforts will be made to establish the new centres on government owned lands, lands acquisition[37] from other sources cannot be excluded because the physical locations' footprints of the new centres have not yet been identified at this stage and, will most likely not so be prior to project implementation[38]. Mitigation measures for community health and safety and the management of workers will be detailed in the Labour Management Procedures (LMP) that will be developed and outlined as part of the ESMF[39]. The LMP of the project [40] will describe specific COVID-19 preventive measures (i.e. social distancing, facial mask wearing, and safety hygiene requirements such as coughing in the corner of the elbow, handwashing, avoiding handshaking, and, wherever needed eye and hair coverage to further avoid or contain the airborne rapid spray of the deadly virus.

For subprojects that involve the use of pesticides, the already prepared PPMP included measures for procurement, transport, handling, and storage, application of pesticides and safe disposal of containers. FAO has produced series of international guidelines and codes of conduct on pest and pesticide management that will be applied during the course of implementation of the project such as the "International Code of Conduct on Pesticide Management" which includes measures for transport,

[35] A stand-alone PPMP has been prepared for the project to mitigate the potential negative impacts during DL control operation.
[36] A stand-alone SEP has been prepared for the project to mitigate the potential negative risks and impacts to stakeholders.
[37] - If private land is needed for the construction of new centers, site-specific Resesttlement Action Plans (RAPs) will need to be prepared, this means identify number of affected people and provide compensation to eligible project affected people (PAP) before the start of construction activities.
[38] A stand-alone RF will be prepared for the project to cover all issues regarding land
[39] A stand-alone Labor Management Procedures (LMP) referred to in this section has been prepared for the project.
[40]To manage environmental and social safeguards under this project, SFD will apply its current Environmental and Social System, which includes an Environmental Safeguards Officer and a Social safeguards Officer supported by a social and environmental safeguards officer as a team assistant in Sana'a and a team of social and environmental officer and a GBV Officers/focal points at each of the two governorates levels. The Environmental and Social System was developed by several active World Bank–financed projects, including ECRP and SAPREP, and includes procedure for sub-project screening and assessment.

storage, application, disposal and monitoring of pesticides, as well as, the "Guidelines for Personal Protection When Handling And Applying Pesticides".

For subprojects under component 2.1 and 3.2 and depending on the results of the screening hereby detailed in the ESMF, site-specific Environmental and Social Management Plans (ESMPs) will be prepared for both sub-components, including preventative actions and mitigation measures to address any potential adverse environmental and social impacts. The ESMP and/or C-ESMP will be prepared by the project PMU and SFD, submitted for consultation, clearance of the World Bank, and disclosed before the implementation of any activity. For sub-component 3.2 RPF will be prepared as a stand-alone instrument.

Being an Emergency operation intervening in a highly hostile environment due to the persistence of the ongoing near 7-year old civil war, the YDLRP's ESMF will (i) help to mitigate potentially high adverse environmental and social impacts streaming from the selection and implementation of sub-projects by hiring an experienced and devoted Third-Party Monitoring Agency (TPMA) to monitor environmental and social safeguards key actions, as well as related environmental, GBV/SEA/SH and social development and inclusion and help ensure project compliance and performance throughout the project lifecycle ; and, (ii) be amply consulted upon with all key stakeholders and publicly disclosed both in-country and on the websites of the FAO and the World Bank Group, accordingly, prior to project effectiveness.

5.2 Breakdown of Impacts per Component

Complementary to what is stated above, the key findings on the YDLRP project foreseen positive and negative impacts in the participating Governorates of the affected desert locus swarms areas could be summarized as follows:

5.2.1. Potential Positive Impacts of the Project

The Potential positive impacts of YDLRP include among others are:

- Combating the damage created by the widespread desert locust swarms in Yemen,
- Protect fragile livelihoods (farming, livestock, source of income generating activities, etc.) from desert locust swarms infestation and subsequently enhance the food security of affected communities through livelihood support interventions in the project targeted areas throughout the country,
- Provision of opportunities to (re)claim human capital and asset losses due to dessert locust swarms,
- Support vulnerable households, particularly women, elderly and disabled, but also to youth (i.e. young farmers) to gain access to livelihoods support,
- Feed/fodder distribution and essential agricultural inputs for building/restoring livelihoods resources,
- Restocking of livestock, rehabilitating rangelands, provision of necessary veterinary services including vaccination for prevention of disease outbreaks,

- Provision of necessary Human health, including awareness raising on COVID-19 services to beneficiary communities, especially in desert locus swarms infected/affected rural areas,
- Provision of employment opportunity for both pesticides spraying operators, youth, women health workers and poorest rural farmers whose livelihood resources have been seriously depleted, and
- Reduction of poverty and food insecurity throughout Yemen, especially in the remote areas.

5.2.2. Potential Negative Impacts of the Project/ Component 1

In general, the potential impacts and risks associated with component 1 are the environmental and community and animal health and safety impacts relating to waste and pollution caused by the spraying of insecticides, impacts relating to the improper storage of pesticides, impacts relating to occupational health associated with handling and spraying of pesticides, and impacts relating to sexual abuse and exploitation. Accordingly, the PPMP (a stand-alone instrument but appendix part of ESCP document) of this project will be guided and act in line with this comprehensive proposed mitigation measures specified in this ESMF and PPMP documents.

Some of well-known potential impacts and risks on environment and humans including socio economic impacts are as follows:

Risks to the environment:

- Pollution of ecologically sensitive habitats such as wetlands, national parks, protected areas, and water bodies (streams, rivers, wells, ponds, swamps, tanks, etc.).
- Loss of biodiversity,
- Air and atmosphere pollution through dust emissions, and pollution due to unused and obsolete pesticides, and poor disposal or mis-usage of empty pesticides containers, among others.
- Risks to animal (livestock and wildlife endemic) health,
- Greenhouse gas emissions and climate change risks,

Social and Socio-economic risks:

- Risks to community and workers' health and safety,
- Noise production due to moving, small ULV engines and vehicles on and from the project sites for a wider and more efficient spray of pesticides,
- Risks of losses of main sources of income generating activities, such as beekeeping, livestock breeding and small crop farmers.
- Risks of exclusion of vulnerable people and culturally underserved or mis-represented groups, particularly IDPs living in settlement camps with agriculture-driven income generation activities types,
- Inadequate prior information for communities in target areas about impacts of pesticide use for locust infestation management, availability of compensation for assets and human affected by pesticide spraying beyond the defined buffer zone and livelihood support, particularly for the most illiterates,
- Low capacity at governorate and district levels and coordination gaps between sector offices including technical capacity limitation on the part of implementing offices,

- Lack of or poor/ineffective awareness raising campaign on the risks, impacts and/or opportunities as well of pesticides among the local community (with special attention to the toddlers, elderly and illiterates),
- Lack of occupational health and safety of the labour force and neighbouring communities' exposure to health and safety, especially exposure to pesticides and likely correlated impact of COVID-19 pandemic (i.e. systematic usage/wearing of PPEs, enforcement of safeguards measures: social distancing, facial mask wearing, use of gloves and glasses, use/wearing of hair protection cups, etc.,
- Risks of involving dominant clan over the weakest ones (i.e. risk of monopolization of focus/actions),
- GBV/SEA/SH [41]as well as child labor and discrimination based on sexual/religious orientation risks,
- Risks of elite capture (especially with political, cultural, and religious motivation, etc.)
- Risks of overlooking of historically underserved regions and vulnerable community; and Potential exacerbation of vulnerable livelihoods of IDPs/refugees and/or homelessness in project areas and worsening of conflicts among the pastoralists, but also between herders and farmers (animal divagation)

5.2.3. Potential Negative Impacts of the Project/Components 2 and 3

Rehabilitation and construction sub-projects under components 2 and 3 are expected to result in significant social benefits and positive environmental impacts. Potential negative environmental and social impacts of component 2 and 3 sub-projects will be minor and of temporary nature during the construction/rehabilitation of small-scale water infrastructure projects and such impacts will include dust, noise, waste generation, disruption to traffic and movement, health and safety; social conflicts between stakeholders as a result of the project activities, ignorance of community needs, natural resource rights concerns, impacts relating to mistargeting and the lack of transparency and favoritism in their screening of recipients of cash for works and in the livelihoood restoration programs, occupational health and safety for community and workers, and impacts relating to the occupational health and improper use of provided productive assets . These impacts would be mitigated by implementing appropriate mitigation measures. Table 7 identified some key impacts and mitigation measures. In addition, the site specific ESMP will be prepared based on the results of the screening checklist as well as the SFD preparedness checklist.

Project component 2 and 3 activities may result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices).

As the project will target small scale water infrastructure by rehabilitation activities, which may involves excavations, demolition, movement of earth, flooding or other changes in the physical environment. This activities may not target the rehabilitation of Cultural Sites directly, they may be located in the vicinity of cultural heritage sites and consequently produce unintended negative effects on such sites.

FAO and SFD will avoid and/or mitigate any impacts on cultural heritage through alternative project siting and design. The impacts on Cultural Heritage resulting from project activities, including mitigating

[41] Section 6.3 in this ESMF include more details and guided the GBV Action Plan.

measures, may not contravene the national legislation, or its obligations under relevant international treaties and agreements.

Where potential adverse impacts are unavoidable, appropriate mitigation measures will be identified and incorporated as an integral part of the social and environmental assessment process. Where potential adverse impacts may be significant, a Cultural Heritage Management Plan should be developed as part of the Environmental and Social Management Plan (ESMP).

For projects with potential adverse impacts, qualified and experienced independent experts will assess the project's potential impacts on Cultural Heritage using, among other methodologies, field-based surveys and involving meaningful, effective, and informed stakeholder consultations as part of social and environmental assessment process.

5.3 Possible Mitigation Measures

For those identified potential negative impacts and risks stated above for all components, the Project through this ESMF has made provisions for consideration during the implementation of the project lifetime. Moreover, o*verview of risks, impacts and mitigation measures per component, and ESS are detailed in table 7 below. In addition a draft Environmental and Social Mitigation matrix with further details about responsibility, timeframe and cost is attached in Annex 13.*

Table 7. Interrelated Impact/Risk Description and Proposed Mitigation Measures

Potential Impacts	Mitigation Measures
ESS1 – Assessment & Management of Environmental and Social Risks & Impacts	
C1	
- Impacts of soil and land resource deterioration due to the misuse or mismanagement; - Impacts related to solid waste produced by workers (trash and plastic bags) accumulating and polluting the environment - Impacts related to pollution of ecologic habits, contamination, and loss of biodiversity or expose aquatic and wildlife to intoxication	- Site-specific Pest and Pesticide Management Plans (PPMPs) will be prepared including contract clauses for implementation and the mitigation measures to minimize the potential negative impacts. For example, control areas with bodies of water will be avoided to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (when hand-held sprayers are used) to 1 500 m (in case of aerial spraying), and wells or water holes in the target area for treatment should always be covered. It is also recommended that beehives be moved away (at least 3 km) from the treated area. Human re entry periods, livestock withholding periods and pre-harvesting crop intervals are strictly observed during anti-locust campaigns. Negative environmental impacts will be minimized by avoiding blanket spraying and conducting targeted control operations. Moreover, communities in general, and beekeepers in particular, will be alerted and sensitized before/during/post the planned control operations. - Workers will be trained on safe disposal of solid waste and requested to adhere to waste disposal guidelines

Potential Impacts	Mitigation Measures
- Disposal, spillage and left-over pesticide. - Improper disposal of empty containers - Left-overs in wrongly disposed containers cause persistence spillage and soil contamination	- Adherence to FAO Guidelines on safe disposal of pesticide and empty containers. - Provide the teams with pesticide drum cleaners and crushers. - Designated officers should be deployed and capacitated to monitor and enforce inspections advising on strict management, import control and quality control to ensure compliance to protect human health and environment. - Training of all the persons involved in disposal on safety and the provisions of this PMP.
C2 & 3	
- Risk of purchasing poor quality hybrid seeds.	- The hybrid seeds will be procured from local markets, which go through the MAI registration and certification process. - The risk of purchasing poor quality seeds will be mitigated by ensuring well defined technical specifications and MAI certification.
- The risk of using pesticide to pollinators.	- Biopesticides will be used and sprayers willl be instructed to avoid the spraying near beekeeping area or to inform the beekeepers to move their beehives to a safe place.
- Influence the flora cover, cutting trees and working in pastoral areas.	- Avoid disturbing of flora cover and cutting trees near the rehabilitated/constructed structures. - Avoid the works in the pastoral areas and maintain the flora and plant cover.
- Biological Resources- - Flora and Fauna Removal or disturbance of natural vegetation ; loss or disturbance to a unique, rare or threatened plant community.	- Cutting of trees will not be allowed. - Compliance with conservation of biodiversity national guidelines.
- Construction / rehabilitation may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities.	- Use dust control measures onsite, such as water spraying for dust suppression; - Regulate site access; - Cover lorries transporting friable construction materials and spoil; Prohibit open air burning; and Maintain machinery and vehicles in good working conditions to minimize emissions.

Potential Impacts	Mitigation Measures
– Construction and rehabilitation activities can have major impacts on the surrounding environment, such as alteration or damaging natural habitat during from constructions materials, water run-off that cause other flooding hazards, and improper dumping of construction / rehabilitation waste.	– Avoiding damaging natural habitat during constructions or minimize it (proper site selection, use environmentally friendly materials, prepare materials off-site, etc.) – Collect generated solid waste and transport them to locally designated and authorized dump site. – Concrete mixing is to be undertaken on a hard surface. for safe removal and disposal of relevant waste – All concrete waste is to be collected, recycled if possible, and removed from the site for disposal at an appropriate disposal site.
– Soil Disturbance during rehabilitation/ construction	– The soil of the rehabilitated structures shall be removed properly to the inner side or near the site. Then it should be returned later after the completion of rehabilitation or transported to nearby adjacent land.
– Erosion and sedimentation	- Soil removed through excavation should be used as back filling or immediately removed from the project to allocated disposal site. - Constructionwill be avoided during periods of anticipated rainfall to prevent any soil erosion. - On completion of construction, all leftover materials are to be removed from the site and disposed of, appropriately.
– Accumulation of debris / sediments in the irrigation canals.	- Remove the sediments to the allocated locations - Rebuild / backfill for the canal banks. - Use the fertile clay sediments for farms to enrich the soil or establish new arable lands.
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Social Risks under component 2 & 3	
– - Impacts relating to the lack of transparency, discrimination of marginalised groups and corruption in the	- Before implementation starts, a beneficiary committee will be established, which will consist of local leaders, Water User Association (WUA), farmers, women's groups, etc. The role of this committee is to ensure beneficiaries are selected openly and fairly. No activities

Potential Impacts	Mitigation Measures
selection of the project recipients; – - Impacts related to conflict eruption and social disputes due to lack of consideration to the different stakeholders' needs and interests and mishandling water ownership, use and property rights; – - The selecting of agriculture areas for interventions may cause social conflicts between beneficiaries.	can start unless it's free from any social conflict that could hinder the project implementation. They prepare a consent form among beneficiaries to clarify the land ownership and any potential social conflict, especially with regard to water resources and access to water and land resources. - The design of the targeted location is part of a holistic approach for protecting all the affected area. Scope of work should be identified and agreed with the community. - The interventions in areas which may lead to social conflicts will be avoided.
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– Social conflict that may cause the stopping of project	- Land ownership should be inspected, verified and documented in court before the implementation. - Documentation of land donation in court before the implementation - Make public proclamation of the donated land
– Conflicts on water shares	- Water usage plan should be developed with water shares division document or by using the traditional water rights and shares and sign minutes or locally called (RAGM or Basirah) to legalise and regulate the water use. - Define the real beneficiaries and made water shares division document / apply the traditional water rights and shares.
ESS2 – Labour and Working Conditions : As the projects activities will be in small nature and in scattered locations, the project will not anticipate labor influx.	
- Poor working conditions	- The project has prepared a Labor Management Plan (LMP) that will be applied during the implementation phase of the project.
- Exposure to health and safety risks and COVID-19 effects.	- Provision of personal protective equipment (PPE) to all workers involved in the project activities. - In all activities of the project, COVID-19 national guidelines will be followed.
Component 1	

Potential Impacts	Mitigation Measures
- Lack or uncompleted protective gear and absorbent materials. - Improper use and spray of pesticides. - Improper labeling leading to wrong usage, cleaning of sprayers and equipment.	- Provision of personal protective equipment (PPE) to all pesticide handlers and users and that they wear them correctly. - Handling of pesticides and spraying will be made only by skilled trained staff. - Pesticide handling and spraying will be ensured in the respect of good practices in line with PMP, including respect of spraying parameters, buffer zones, protected areas, etc. - Refreshing training should be organized for safe use of pesticides; spraying operations; proper calibration of sprayers and provisions of the PMP before the start of the control campaign. - Ensuring that proper sprayer maintenance is carried out.
- Poisoning of staff during handling and spraying operations either accidentally or during the normal course of their work	- Provision of medical diagnosis services for stakeholders to determine their contamination/ toxic levels and examining them for acute or chronic poisoning symptoms when such need arises. - For field officers, to reduce risks of overexposure to chemical pesticides, all field officers and spray operators will be equipped with appropriate personal protective equipment and pumps to limit handling of chemicals. In addition, all operators will have access to the Materials Safety Data Sheet and relevant materials to contain and absorb accidental spills. - Acetylcholinesterase kit will be delivered by the project. The Human Health and Environmental Monitoring Team can monitor the incidence of exposure to chemical pesticides (organophosphates) in the blood of the operators (before, during and after the anti-locust campaign) and thus to detect, evaluate and correct if needed, any negative effects (overexposure or poisoning). - An assessment of control operations will be ensured by pesticide residue analysis in order to monitor impact of control operations on non-target organisms and to detect, evaluate and correct if needed, any side effects.
- Impacts related to main accidents scenarios, such as pesticide spills, pesticide fires, accidental poisoning or exposure, chemical burns	- An Emergency Response Plan will be prepared as the template annexed with the PMP for each site to address the main accidents scenarios.
Component 2 and 3	
- - The risk of employing children	- Prohibiting the selection of underage workers to construction sites by applying age verification before the employment of workers.

Potential Impacts	Mitigation Measures
- impacts related to lack of children protection and children work due to high need of money among poor families;	
- On-site accidents/injuries: - -Eye infections/injuries as a result of dust or cutting and shaping stones; - -Hands and feet injuries from excavation, stones cutting, transportation and shaping; - -Dehydration from high temperature; - -Fall of people or animals into excavation; - -The fall of backfilling materials and stones on labours; and - - The risk of snake bites in the construction sites.	– Proper safety measures shall be taken at construction site locations. – Training and awareness raising will be provided to all workers on relevant aspects of occupational health and safety associated with their work, including machinery operation before starting work and continue the same throughout the implementation period. Any worker failing to follow these on-site safety training instructions will be dismissed in accordance with local labor laws. – Enforce using PPE. – Provide on-site drinking water. – Encircle excavation with ropes to safeguard pedestrians and animals and use warning signs to alert pedestrians to dangers. – Provide proper structural support for construction/ rehabilitation sites to avoid collapsing. – Provision of first aid kit at work sites with anti-toxin / anti-venom for snake bitessnakebites.
ESS3 – Resource Efficiency and Pollution Prevention & Management	
Component 1	
- Improper selection of pesticides	– Comply with FAO guidelines for selecting appropriate pesticides for locust control and ensure adequate inspections are carried out in procurement process.
- Damage during shipment, leakage/spillage	– Technical specifications developed to ensure durable characteristics of the drums (thick, resistant to chemical substances, sealed) as well as the arrangement of the drums, i.e. four drums per wooden pallet (dimensions are specified), the four drums are wrapped together with plastic films to prevent the drums from bumping into each other during transport.
- Spillage and leakages, fumes' and fire. Spills if not cleaned or	– Pesticides should not be transported with any foodstuffs and should be covered and well labelled.

Potential Impacts	Mitigation Measures
decanting and replacing - Lack of knowledge by pesticides drivers and distributors. - Wrong transportation exposing products to human and environment. - Insecurity & theft leading to loss of pesticides.	– Drivers transporting pesticides should be trained on accident prevention and dealing with emergencies such as spillage or fire during transportation. – Training of handlers and users (personnel) on safe use and management of pesticides. – Further details in link to DL guidelines vol. 6 page 41: – http://www.fao.org/ag/locusts/common/ecg/347_en_DLG6e.pdf – Insurance clause will be integrated in procurement of pesticides and transportation agreement.
- Poorly built store, lack of ventilation and floor space leading to containers wrongly stored. - Spillage, corrosive containers. - Prolonged storage of products causes caked formulations.	– Ensure proper storage facility in terms of site and design. – Further, adherence to the appropriate store management by applying the rule of the thumb i.e. first in first out and provision of right store equipment and materials to curtail or minimize store accidents, leakages and spillages. – Safe storage of the pesticides in the proposed locations and controlled/ documented release of the pesticides. – In each store, a bucket with sand, a shovel and resealable bags should be present. In the event of a pesticide spill, put sand on the liquid on the ground to absorb the pesticide, collect this sand and put it in a closed bag + decant the pesticide into an undamaged drum and label this new drum well.
Components 2 and 3	
- Borrow pits and quarrying disturbance	– Approved quarry and borrow pit sources should be arranged (official or community approval) and any potential effect such as rock quarry debris should be cleaned from the quarry site and disposed of appropriately. – The transportation vehicles of the construction materials from the different quarry sites should follow the following: – Properly collect, load, transport, unload the construction materials using well maintained equipment to suitable trucks / vehicles or sometimes use donkeys in mountainous area with suitable load and put more emphasize on the safeguards requirements. – Guide the drivers to follow the driving safety instructions. – The use of explosive is prohibited in all quarry sites and alternative ways will be used for stone cutting.
- Landscape disturbance	– On completion of rehabilitation/ construction, all leftover materials are to be removed from the rehabilitation/ construction area to the allocated location.
ESS4 – Community Health and Safety	
Component 1- Locust monitoring and control	

Potential Impacts	Mitigation Measures
- Poisoning of local population or their agriculture assets or livestock/ bees during and after handling and spraying operations ; - The use of inappropriate pesticides and formulations; - Spraying of resources that are for consumption (wells, crops, other water sources); - Unnecessary exposure during pesticide handling, transportation, storage, and spraying operations.	- Carry out comprehensive, participatory and inclusive awareness-raising campaigns and provide relevant and timely information to local communities on pesticide treatment schedules and potential negative impacts; - Provide public awareness and clearly inform local population about safety precautions using different approaches (i.e. local radio, TV, leaflet with local language, public presentation) and prepare contextualized communication strategy; - Systematic use of personal protective equipment (PPE) by staff involved in control operations and pesticide management; - Use of good practices and efficient techniques during control operations, use of less environmentally hazardous pesticides, respect of protected areas and buffer zones; - Adequate pesticide management, i.e. handling, transportation, storage; collection and disposal of empty pesticide containers;
- Community health and safety risks relating to project activities during the implementation especially COVID-19 and cholera infections	- Apply COVID-19 and Cholera precaution measures and raise the awareness of community during implementation in line with national guidelines. - Activities that bring groups of people together must be avoided, unless necessary, and only then with strictly enforced precautions such as social distancing, facial mask wearing, and handshaking avoidance.
Social Risks under component 1	
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– Sexual abuse by spray teams on community members	- Sensitization of involved government agencies on compliance with environmental and social safeguards (sexual abuse, gender violence, inclusivity among others). - Informing communities on available grievence mechanisms in place
– Health and safety of affected communities	- Awareness creation and communication activities to communities where spraying is carried out. - Extension material and mass media campaigns will be prepared/ensured so that local populations adopt the required safety measures before, during and after treatments for themselves, their cattle and their crops.

Potential Impacts	Mitigation Measures
– Loss of livelihood due to DL damage	- Conduct rapid social impact assessment to enable formulation and implementation of livelihood restoration programmes during and following control of the locust. - Training on surveillance and monitoring so that farmers and pastoralists can be part of the early warning which at the end will limit the impact of the DL infestations.
– Exposure to poison through consumption of contaminated food grown in sprayed areas	- Promote awareness to ensure that communities respect the re-entry time for their livestock and withholding periods for their harvests. - Avoid spraying near or around water bodies to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (ground spraying) to 1 500 m (aerial spraying), and wells or water holes in the target area for treatment should always be covered.
Components 2 and 3	
- Impacts related to occupational health and safety for community near rehabilitation and construction sites associated risks such as accidents during earth work excavation, cutting, breaking, quarrying, and transferring of stones…etc	- Site-specific Environmental and Social Management Plans (ESMPs) will be prepared including contract clauses for implementation including: - Barricade the work areas to prevent entry of unauthorized personal to the construction areas; and - Place adequate signboards to divert pedestrian and community members away from the construction works.
C1,C2 and C3	
- Impact of looting the procured assets under the project (especially the pesticide).	- Project assets will only be kept and stored in fenced and secured areas and buildings guarded by security personnel. - An emergency prepardness plan will be prepared acceptable to the Bank and consistent with the ESS4 and it is Good Practice Note on the use of Security Personnel.
- Impact that may affect the security personnel works under the project activities. - Increased risk of Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and	- For each component and based on geographical coverage, security personnel will be prepared before and during the implementation. - Coordination with local security authorities/community leaders, workers training (security briefing etc.) incident reporting, emergency preparedness, etc. Issues related to GBV risk; requirements for confidential and survivor-centered grievance redress mechanisms; and Codes of Conduct will also considered. .

Potential Impacts	Mitigation Measures
Sexual Harassment (SH)	
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ESS5 – Land Acquisition, Restriction on Land Use and Involuntary Resettlement	
- Land Acquisition	- Resettlement framework will be developed as a stand-alone document. - All the rehabilitation and construction activities under the component 2 will be selected to be owned by the public or to be donated for public use. Alternatively, some interventions will be implemented in private ownership for each beneficiary. The project will also ensure land owners are not coerced into land donation. - For component 3 the land to construct the DLC is owned by the government MAI and a letter of agreement or minutes will be prepared by MAI to cope with the World Bank ESS5.
ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources	
- The measures will be implemented to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchyprovided in ESS1	
ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities : N/A	
ESS8 – Cultural Heritage	
As the project will target small scale water infrastructure by rehabilitation activities, which may not target the rehabilitation of Cultural Sites directly, they may be located in the vicinity of cultural heritage sites and consequently produce unintended negative effects on such sites.	FAO and SFD will avoid and/or mitigate any impacts on cultural heritage through alternative project siting and design. The impacts on Cultural Heritage resulting from project activities, including mitigating measures, may not contravene the national legislation, or its obligations under relevant international treaties and agreements. Where potential adverse impacts are unavoidable, appropriate mitigation measures will be identified and incorporated as an integral part of the social and environmental assessment process. Where potential adverse impacts may be significant, a Cultural Heritage Management Plan should be developed as part of the Environmental and Social Management Plan (ESMP). For projects with potential adverse impacts, qualified and experienced independent experts will assess the project's potential impacts on Cultural Heritage using, among other methodologies, field-based surveys and involving meaningful, effective, and informed stakeholder consultations as part of social and environmental assessment process.
ESS9 – Financial Intermediaries : N/A	
ESS10 – Stakeholder Engagement and Information Disclosure	
- stakeholder engagement	- Stakeholder Engagement Plan will be implemented thought the project implementation and updated if needed.
- Concerns and risks during the identification and implementation of	- Consultation with stakeholdersstakeholder during the sub-project phases will be carried out by SFD field consultants and all concerns and risks identified will be addressed and used to inform project deviations where required.

Potential Impacts	Mitigation Measures
component 2 activities	
- GRM communication and feedback	- The developed GRM for the project should be made available to project beneficiaries, informed of its free and fair accessibility, as well as implemented in a proper way. - Addressing gender and vulnerability dimensions of the operation including gender-based violence (GBV/SEA/SH) as well as child labor, etc. - The project has prepared GBV Action Plan which will be implemented and defined the potential project GBV issues thus during implementation, measures should be taken in accordance with the project GBV action plan. - The project implementing teams will regularly access and manage the risks of SEA/SH and other forms of GBV extending from project activities, including key infrastructure elements as well as the receipt of cash-for-work schemes in component 2 (sub-component 2.1) by women and other vulnerable groups and sexual exploitation and abuse, as well as sexual harassment risks such as sexual favours for registration or release of funds (and/or the use of child labour to maximize gains).
- lack of consultation and involvement of local communities.	- This will be mitigated by consultation, communication, GRM procedures as detailed in SEP.
– Effects of gender blindness, gender based violence, sexual abuse and exploitation typically associated with catastrophic events; – Negative impacts related to discrimination against women and children elderly and persons with disabilities during project beneficiarie selection; – -	- Sensitization of communities and relevant partners on gender related matters - Informing community on FAO grievence mechanisms in place for potential anonymous complaints. - Ensuring that proper monitoring is carried out through call centers and field visits
- Access to natural resources may be changed, and some beneficiaries could	- Before subproject implementation starts, a beneficiary committee is established which consists of sheiks, Water User Association (WUA), and farmers, women's groups, etc. The role of this committee is to ensure no activities can start

Potential Impacts	Mitigation Measures
see their access negatively affected (particularly water). This could result in conflict.	unless it's free from any social conflict that could hinder the project implementation. A consent form is prepared and signed by beneficiaries to clarify the land ownership and any potential social conflict, especially with regard to water resources and access to water and land resources.
- Complaints	- A complaints register will be kept on site and this will feed into the SFD GRM. Details of complaints received will be incorporated into the monthly reports as part of the monitoring process informing FAO managment that will take appropriate action according to established GRM.

In addition to the abovementioned constructive mitigation measures, the YDLRP will also:

- Ensure that the pesticides transportation, storage, disposal and management should strictly follow the 2003 FAO Guideline on Desert Locust Guidelines, section six Safety and environmental precautions. Further, the project will follow the provisions outlined in the ESMF (consistently with those also outlined in the PMP, with specific guidance under each environmental and social standard. The preparedness of the MAI should also provide its pesticide storage plan, including options for central and regional storage facilities.
- Establish basic but strict Community Communication Protocols: while the project should adopt a comprehensive community-driven communication and outreach strategy, with specific provisions to be included in each sub-project site-specific ESMP and relevant contractors' contracts. The given protocol should include proper but short and precise messaging for : (i) safe and secure pesticides spraying, (ii) type of pesticide spraying strategy, (iii) potential impacts and risks on humans, livestock, livestock feed, human and livestock water wells, and, (iv) grievance mechanism to provide feedback.
- Ensure the avoidance of any form of Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA). Sexual Harassment (SH), and or usage of child labor by relying on the FAO Guidance Code of Ethics and Professional conduct, Yemeni Law and the applicable WB/FAO Environmental and Social standards.

Gender Equality:

In the absence of equity and equality, certain project envisioned actions could have some impacts on gender bias/relations in the given communities of the 5 participating districts. Impacts could be the aggravation of disequilibrium both in terms of economic power between men and women, intellectual resources, and the know-how, and between local communities traditionally established or communally called/labelled "autochthones" and newly establish immigrant communities.

In line with the FAO Gender Policy aiming to achieve equality between men and women in sustainable agricultural production and rural development for the elimination of hunger and poverty FAO will carry out activities adhering as much as possible to the following Gender Equality Objectives:

- Women participate equally with men as decision-makers in rural institutions and in shaping laws, policies and programs
- Women and men have equal access to and control over decent employment and income, land and other productive resources
- Women and men have equal access to goods and services for agricultural development, and to markets
- Women's work burden is reduced by 20% through improved technologies, services and infrastructure
- Percentage of agricultural aid committed to women/gender-equality related projects is increased to 30% of total agricultural aid

To ensure gender equality objectives are adequately applied throughout the project activities, FAO will ensure that the following actions will be taken:

- Preliminary review in defining the selection criteria to identify the beneficiary of the related project activates ensuring gender equality objectives are incorporated adequately.

- Ensure the inclusion of the gender equality in the pre-assessment exercise through collection of data of the household in the targeted districts, taking into consideration local culture in terms of economic power between men and women;

- Ensure the gender equality selection criteria's have been adequately applied in the selection of the beneficiaries.

5.3 The Without Project Scenario:

As stated above, the overall vision of this project is to sustainably improve the livelihood and living conditions of Yemeni farmers and herders faced with ongoing desert locust swarms outbreaks, by helping to "control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations". The country FCV and project areas context speak volumes of the difficult conditions farmers and herders are current faced with in the project intervention areas, with the outburst of desert locust swarms threatening the sustainability of communities' livelihoods. The YDLRP contribution is foreseen to bring way more positive benefits than adverse risks and impacts, which, as determined by its substantial risk rating are moderate in scale, mostly site specific and easily manageable.

Consequently, the without project contribution will most likely further increase the current constraining factors in a context of impactful climate change regime and devastating desert locusts swarms outbreak, and hinder more the future of theses beneficiary farmers and herders livelihoods and living conditions.

This is to, simply further justify, the timeliness, and overall relevance of YDLRP in supporting the Yemeni Government's efforts and recipient communities' vision to sustainably fight the plight of desert locusts and foster a better future for their lives.

6. SOCIAL IMPACT ASSESMENT (SIA) COMMUNITY HEALTH, SAFETY AND SECURITY ACTION PLAN (CHSSAP), AND GENDER-BASED VIOLENCE ACTION PLAN (GBVAP)

6.1- Social Impact Assessment (SIA)

The intensification of the crisis in Yemen since 2015 led to the suspension of the Social Welfare Fund (SWF), leaving the already vulnerable SWF beneficiaries without any social protection support. Increased food and non-food basic commodity prices, loss of assets and livelihoods, and internal displacement, have further exacerbated the situation. The crisis is still ongoing, and the depletion of these already scarce livelihood sustainability resources is further going to be hindered by the plight of the desert locust swarms that is currently threatening the whole of Yemen, especially in the agriculture prone zones, and along the whole costal shoreline. The Yemen Desert Locust Response Project (YDLRP) funded by the World Bank (WB) and prepared and implemented by the FAO for the Government of Yemen (GoY) for a duration of 3 years.

To better understand the ground-truthing rationale this operation, a Social Impact Assessment (SIA) is envisioned to better uproot, grasp, and help understand the strategic vision of this operation. Although, light in itself; this SIA will enable to fulfil its very purpose of shedding lights on the best ways forward to ensuring women, elderly people, youth, disabled and most vulnerable segments of the population who might be disproportionately be affected or impacted by the foreseen activities under the YDLRP.

Purpose and Objective of the Social Impact Assessment (SIA)
Social Impact Assessment (SIA) is one of the requirements of the World Bank's Safeguard standards (ESS), which sets out the borrower's roles and responsibilities for assessing, managing, and monitoring social and environmental risks, impacts and opportunities associated with a project supported by the World Bank through Investment Project Financing. While the implementation of the proposed YDLRP activities will not result in serious negative environmental impacts, it could potentially cause adverse social risks and impacts. The project environmental and social risk rating remains Substantial. The objective of the SIA is to assess potential social risks, impacts and/or opportunities of the project and propose viable, implementable mitigation measures that are gender and vulnerability sensitive. The project aims at targeting about 80% women, and will spare specific time to educate, council and strengthen their technical capacity.
Due to ongoing access restrictions to the country that are exacerbated by the COVID-19 pandemic and the ongoing nature of the project, the SIA has been prepared based on a rapid desk review of primary and secondary sources as well as the feedback gained to date from stakeholder engagement activities.

The SIA:

- ✓ Enables stakeholders to understand the scope, content, organization, and activities of the Project;
- ✓ Ensures a uniform level of understanding in the interpretation and application of policies and guidelines for all stakeholders;
- ✓ Provides the necessary tools to guide the implementation processes of YDLRP activities by reiterating appropriate institutional arrangements, coordination mechanisms as well as lines of authority and control mechanisms; and
- ✓ Ensures that the requirements for transparency, equity and accountability are consistently met.

The SIA is prepared consistently with its applicable legal and regulatory framework, namely by (i) complying with national environmental and social laws and regulations, and (ii) meeting the requirements

of the World Bank's Environmental and Social Standards (ESS), including the World Bank Group Environment, Health and Safety (EHS) Guidelines; and the World Bank guidelines on stakeholder engagement during COVID-19 (see copy in the annexes).

Classification of project recipient communities

A- Affected parties

Affected Parties are those groups of people that are directly influenced (actually or potentially) by the project and/or have been identified as most susceptible to potential risks and impacts associated with the project and, who need to be closely engaged including, local community members, and other parties that may be subject to direct impacts from the Project. Specifically, the following individuals and groups fall within this category:

- Farmers, pastoralists, and agro-pastoralists communities.
- Community workers.
- Rural populations at large who will lose crops, livestock, and livelihoods, because of the spray.
- IDPs (Internally Displaced People).
- Field officers directly involved in pesticides handling and spraying operations.
- Populations at risk in areas in which spraying is carried out.
- Plant Protection Directorate staff under MAI (*i.e. project personnel and associates*).
- Local NGOs involved in mobilization and preparation of communities' readiness for implementation.
- Ministry of Agriculture and Irrigation (MAI) as surveillance/monitoring sensitization and provision of control personnel.
- Water Users Associations (WUA) as local resources and management.
- Social Fund for Development (SFD) as an expert entity in agriculture and outreach.
- Main implementing agency FAO and other UN agencies likely to be involved (*i.e. WHO, WFP…*).
- Contracted workers, consultants, scouts, vehicle, and small and light aircrafts operators.

B- Other interested parties

These are considered to have either high interest but low mandate or high mandate but low interest. Other interested parties of the projects' stakeholders include:

- Politicians (leadership in the north, central, coastal, and south Yemen).
- National Institutions with a role in this operation within MAI.
- Directorate of Plants Protection.
- Desert Locust monitoring and control center; and
- Project Implementation Unit (PIU) at both Sana'a and in the field (*Eden & Houdeida*)
- Social Fund for Development (SFD) with extensive outreach to beneficiaries around the country.
- Tribal, ethnic, cultural, religious authorities.
- Ministry of Water and Environment (MWE).
- Ministry of Public Health and Population (MPHP)
- Agriculture Research Institutions (*i.e. Sana'a and different branches throughout the country*).
- Other local NGOs and CBAs (*i.e. Farmers Organization, Youth and Women Farmers Association, etc.*).
- The public at large.

C- Disadvantaged/Vulnerable individuals or groups

Disadvantaged or vulnerable individuals or groups are those peoples or groups highly vulnerable to potential project impacts and often do not have a voice to express their concerns or understand the risks, impacts and opportunities of the project. They may be disproportionately impacted or further disadvantaged by the project as compared with any other groups due to their vulnerable status, and usually require special arrangement to ensure their equal representation in the consultation, participation and decision-making process associated with the project. Their vulnerability may stem from person's origin, gender, sexual and/or religious orientation, age, health condition, disability, economic deficiency and financial insecurity, disadvantaged status in the community (e.g. minority groups), dependence on other individuals or natural resources, etc.

Awareness raising and stakeholder consultation, participation, and engagement with disadvantaged or vulnerable individuals or groups on the project must consider such groups or individuals' concerns sensitivities, and cultural differences to ensure a full understanding of project activities and benefits. Engagement with these disadvantaged and vulnerable groups and individuals often requires the application of specific measures and assistance aimed at the facilitation of their participation in the project related decision making so that their awareness of and input to the overall process are commensurate to those of the other stakeholders.

Within the proposed Project, the vulnerable or disadvantaged groups may include, but not limited to, the following:

- Historically underserved and disadvantaged communities in coastal plains along the Red Sea and Gulf of Aden, western interior parts of the country, and central and eastern parts of the country.
- Affected households, those reliant on cropping activities and already facing food insecurity.
- Elderly people in hard-hit areas and facing food shortages.
- Female headed households.
- Children and youth heads of households
- Internally displaced persons.
- People with disabilities.
- Poor people, including ex-pastoralists.
- Illiterate persons.

Disadvantaged and vulnerable groups within the targeted YDLRP communities and affected by the project will be further confirmed and consulted upon during environmental and social assessments practices/exercises through dedicated means, as appropriate.

Since the project has a national coverage, the socio-cultural and religious composite of YDLRP stakeholders varies from one region to another, and therefore, to tangibly address its foreseen safeguards, OHS and GBV/SEA/SH risks and impacts, proposed mitigation measure should factor these social differences into the awareness raising and capacity strengthening campaigns, throughout the project lifespan.

6.2- Community Health Safety and Security Action Plan (CHSSAP)

Purpose

Spray of pesticides to fight the plague of Desert Locusts swam and construction of storage and operational management or research centers facilities activities including traffic movements, security

activities and emergency events can disproportionately impact the local community. Interactions with the local beneficiary community will be managed in a sensitive way to avoid any adverse or unplanned impact.

The Employers' aim is: *To avoid or minimize the risks and impacts to the health, safety and security of the YDLRP affected community that may arise from proposed spray of pesticides, CFW and/or construction activities (including security actions), paying particular attention to vulnerable groups, especially women, elderly, children, youth, disable, etc. (WB–ESS1&ESS4)".*

Objectives

The specific objectives of this Community Health, Safety and Security Action Plan (CHSSAP) are:

• Set out Employers (FAO)'s requirements to manage health, safety, security and overall project triggered wellbeing of the local community during the spray of pesticides, CFW and/or construction activities (i.e. risks and unforeseen impacts from use the usage, spray, poor handling and disposal of pesticides and pesticides containers, of hazardous materials, road traffic movements and localized dust and noise at and around construction sites, unsafe gathering and disposal of sprayed dead locusts of seriously affected ones;

• Provide standard practices to avoid, minimize or compensate for the impacts onto the affected riparian community around the agricultural fields and/or locust swarms breeding areas, and from indirect impacts of likely influx of workers seeing employment and/or better living conditions;

• Manage risks and impacts posed by security arrangements (*i.e. particularly by attracting rebellion groups nearby project activities sites, and/or the kidnapping of women/youth in nearby communities; etc.*) to those outside the Project site;

• Define the roles and responsibilities for implementing the communities' protection and control measures.

Management Measures and Actions

Potential Risks and Impacts

Activities that could impact the health, safety and security of project affected communities are as follows:

• Deterioration of environmental and social health conditions increasing the potential for contamination by pesticides, and the diseases due to the high concentration of pesticides on/around project impacted zones, which also is affecting the overall hygiene quality;

• Pressure on already limited healthcare services to support the increased potential cases of affected people,

• Increased risk of Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) as a result of an influx of employment and/or business seekers and cash income (CFW);

• Changes to community safety from anti-social behavior (*i.e. customarily unaccepted behavior in society*);

• Community exposure to hazardous materials and dangerous substances that may be released by the project,

• Nuisance impacts (dust, noise, smoke) from site preparation, earthworks, spray of pesticides, CFW and construction activities;

• Increase in potential for disease (*i.e. vector borne, communicable and/or non-communicable disease*) through the introduction of non-local workforce including potential increased exposure to health risks such as HIV/AIDS and other sexually transmitted infections (STIs), and COVID-19;

As asset creation activities target all household members, the immediate effects of the changes in the vulnerability profile due to COVID-19 might be limited. Households with high dependent status (children, elderly, disabled, etc.) would already be taken into consideration during the community/households targeting phase of the activity. However, a complete suspension of community/households' asset activities could be expected in order to ensure either safe distance between participants/households and or self-isolation. Containment would likely result in the suspension of all activities by order of Government and or decision of FSAC partners to suspend due to risk of infection through congregation of people. This would mean that the activity itself would need to be stopped as there are few individual level asset creation / livelihoods activities that could be undertaken 'in isolation' not requiring oversight.

Sensitive receptors

Prior to jumpstarting the pesticides spray operations as well as site-specific civil works on site, FAO, Government agencies and/or construction Contractor will review and verify key sensitive receptors nearby or on the site and along the identified and selected spray delivery itineraries and take these into account in their risk assessments and development of relevant procedures. FAO and/or construction contractor will provide documented records to demonstrate this. Moreover, the following vulnerable groups will be given the utmost specific attention when planning such sensitive activities:

• Women and young girls;

• Children/Toddlers,

• The elderly and widows;

• Disabled people;

• Children who may be more vulnerable to certain health effects such as infectious diseases and acute/ chronic respiratory tract infections from exposure to dust, smoke, and other airborne pollutants;

• Poor households; and

• The landless; those without access to, or ability to, own land.

MANAGEMENT OF IMPACTS

General requirements

Table 8 defines the FAO's minimum requirements for management of CHSS matters.

Table 8: Summary of Management Actions during Spray of Pesticides Operations/Construction

CHSS Item #	Issue	Objective/ Requirements	Action / Mitigation Measure(s)	Timing/ Action	Responsibility	Means for Verification
1	Lack of dedicated project/FAO contact with community can lead to community frustrations and mixed messages	Foster and nominate an FAO Focal P person for all communicatio ns with the communities (*as prescribed in the Project SEP*)	• Engage / nominate a Community Liaison Officer (CLO) or Community Focal Point (CFP) to facilitate community interactions • Ensure communities know how to contact the Project • Ensure communities are aware of FAO's expectations in implementing the project, particularly on the behavior of workers and security personnel and how to raise grievances relating to worker or security guard conduct (*i.e. including making sure communities know this can be done in a confidential manner*).	Pre-Spray of Pesticide s	FAO's Social, Environmental and GBV officers to ensure that the specialized DL control team under the MAI appoints responsible team member to handle community issues under their lead	Evidence of smooth and effective communication stream with project affected communities on CHSS issues
2	Lack of factual interaction with communities to inform them about project activities and likely impacts that may result in poor and negative perceptions	Awareness raising campaigns around key risks and impacts, as well as some opportunities	• Notify community of potential impacts and develop communication, safety, and awareness raising measures (*such as educational campaigns*) to alert and inform community members about specific project impacts (i.e. spray of pesticides,…).	Pre-Spray of Pesticide s	FAO focal point (Supported by the specialized DL control team under the MAI)	Minutes of meetings
3	Inadequate managemen t of Community impacts can lead to loss of social license to operate safely	Ensure proper planning to understand community concerns and to proactively manage community risks	• Ensure good and proactive relationship with the specialized implementing partners (DL control team under the MAI and SFD) (e.g. HSE) to properly handle community issues together with FAO's Safeguards and GBV team • Record and adequately report all formal interactions with the recipient Community	Through out Project lifecycle	Specialized DL control team under the MAI and SFD Staff	CHSS procedures approved by FAO and the WB prior to the physical start of works on site
4	Impacts on community H&S from project design and infrastructur e (planning of spray activities, acquisition, used and disposal of pesticides containers	Reduce health, safety and environmental and social risks through the design of the project and the spraying operations	• Plan activities to avoid impacts on communities, where these are unavoidable seek FAO's approval for activity to be undertaken: • Consider natural hazard risks (*i.e. flood risk, seismic risk, weather risk (rainy season), etc.*) in Project design as these could easily increase the risk factor for this project. • Address CHSS risks in all activity risk assessments and specify actions to manage impacts to neighboring communities in relevant site procedures, method statements, directives, and instructions, • Develop specific method statements prior to the start of any works to be approved by FAO on the protection and management of any permanent households within 50m of any construction activities	Pre-Spray of Pesticide s, pre selection of the CFW activities	Specialized DL control team under the MAI and SFD field teams	Approved by FAO prior to the start of pesticides spray operations

CHSS Item #	Issue	Objective/ Requirements	Action / Mitigation Measure(s)	Timing/ Action	Responsibility	Means for Verification
			• Ensure scenario-based Emergency Preparedness and Response Plan is in place to cope with such eventuality Which will be prepared for the sub-projects activities			
7	Lack of local administration (*municipal level*) capacity to address Project emergencies.	Ensure that local emergency services are not overwhelmed by the requirements of the Project and to provide some training where gaps exist	In accordance with the Emergency Response: • Provide community/emergency services with Project emergency contact information and procedures • Hold regular drills with local emergency services/community at an appropriate frequency • Understand local community resources for handling emergencies (*fire, falls from height, elevated rescues*) and set procedures for interaction.	Through out Project lifecycle	Implementing Partners	Emergency drill schedule Evidence of liaison with local emergency services Adequate on-site medical services EPR procedure approved by FAO prior to start of works on site.
8	Lack of GRM	Ensure that GRM are disseminated and effective to receive the stakeholders complaints and concerns	A complaints register will be kept on site and this will feed into the FAO and SFD GRM. Details of complaints received will be incorporated into the monthly reports as part of the monitoring process.	Through out Project lifecycle	FAO/ MAI and SFD	

Source: CATS, December, 2020

Project specific requirements

Specific considerations for this Project are listed here and elaborated in the table below.

Table 9: CHSS - project specific requirements

CHSS Item#	Issue	Requirement/ Objective	Action / Mitigation Measure(s)	Timing	Responsibility	Means for Verification
9	Community awareness raising Campaign	Undertake regular consultation of Community Health Workers (CHW) with local community	• In addition to general project information disclosure, specific awareness raising information should be provided to recipient communities on issues related to both their health and livelihoods: I. To farmers and livestock owners, but also fishermen operating either on rivers, lakes, ponds or the coastal areas on information about the pesticides sprays duration, nature, type, means of, and likely risks of used products during these operation, and ways they will be sprayed all over their respective regions/districts II. Education and awareness on the following topics: - The spread and prevention of infectious diseases such as HIV/AIDS, COVID-19, STIs. - The road and traffic safety (*movement of vehicles engaged in the spray and/or construction operations throughout Yemen*). - The construction of research centers, warehouses/storage facilities - The prevention and rapid response to GBV/SEA/SH, child labor, etc.	Throughout Project lifecycle, particularly during project	FAO safeguards and GBV team in Aden & Hodeida, if not through CFPs	Community consultation & participation Log Evidence of awareness raising campaigns + number of participants + Systematic wearing of prescribed personal protective equipment (EPI)

CHSS Item#	Issue	Requirement/ Objective	Action / Mitigation Measure(s)	Timing	Responsibility	Means for Verification
10	Health and safety awareness	Promote health & safety awareness campaigns in the community and wider area for the overall benefit of the area	• In close coordination with the regional/district health authorities at the health centers close to the project area, carry out periodic awareness raising campaigns on the danger of pesticides, the safe, secure, and sustainable use, storage and disposal of pesticides and empty containers, STIs and HIV/AIDS throughout the project areas, targeting beneficiary local communities, with special attention to women of various age groups, children, elderly, and disables. • Develop "Clean Community Campaigns" (*waterborne diseases, malaria, dengue, etc*.). These can be supported by the CHW and managed by local community-based organizations (CBOs) in partnership with communities with potential incentives to communities based on their performances in satisfactorily implementing the recommendations.	Spray Operations team + Facilities construction	FAO Safeguards and GBV teams & Contractors' EHS officers	Health review & evidence of effective awareness raising campaigns + Systematic wearing of prescribed personal protective equipment (EPI)
11	Information, Education and Communication (IEC) awareness	IEC campaigns in the community and wider area for greater benefits of the area in general	• Support community- driven IEC raising campaigns to promote improved knowledge and awareness of tuberculosis (TB), other infectious diseases (i.e. lung, respiratory) and their associated determinants; • Explore ways of strengthening health systems with government and key partners for improved detection and treatment of TB+ cases.	Spray Operations team + Facilities construction	FAO Safeguards and GBV teams & Contractors' EHS officers	Evidence of effective outreach educational campaigns
12	Disease Outbreak	Consider requirements for serious disease outbreak incidences for the protection of both the workforce & the beneficiary communities	• As part of the general outbreak risk management, develop and implement a disease outbreak preparedness and response procedure (*that include potential zoonotic/livestock diseases and responses for outbreak of Covid-19*) that include business resilience and recovery elements. These will need to consider interaction with a broad range of stakeholders including the local community, district as well as national health authorities + CBOs.	Spray Operations team + Facilities construction	FAO Safeguards and GBV teams & Contractors' EHS officers	Disease outbreak incidence strategy (DOIS)
13	GBV/SEA/SH	Manage integrated GBV/SEA/SH prevention and action program	Develop and implement an inclusive and participatory GBV Action Plan (GBVAP) that outlines: • How the project will put in place the necessary protocols and mechanisms to address the GBV/SEA/SH risks and impacts; &, • How to address any GBV/SEA/SH incidents that may arise throughout project lifespan. The GBVAP should include: • A GBV/SEA/SH "***zero tolerance policy***" (including a code of conduct-CoC) including agreed sanctions for the ***Accountability and Response Framework*** (ARF). These should be provided by the contractor and consultants as part of the C-ESMP • Specific arrangements for the project by which GBV risks and impacts will be addressed, including: • ***Awareness* Raising Strategy** (ARS), which describes how workers and local communities will be sensitized to GBV risks, and the worker's responsibilities under the CoC;	Spray Operations team + Facilities construction	FAO Safeguards and GBV teams & Contractors' EHS officers	GBV Action Plan is correctly implemented

CHSS Item#	Issue	Requirement/ Objective	Action / Mitigation Measure(s)	Timing	Responsibility	Means for Verification
			• ***Referral Pathway***: Identification of qualified GBV service providers and setting up a referral pathway so GBV survivors will be referred, and the services which will be available (*i.e. health, legal, social protection, psychosocial, ...*) Establish a GBV Accountability and Response Framework, to be finalized with input from the contractor, should include at minimum: • Set up GBV Allegation Procedures: How the project will provide information to employees and the community on how to report cases of GBV CoC breaches to the GRM. • GBV Allegation Procedures to report GBV issues to service providers, and internally for case accountability procedures which should clearly lay out confidentiality requirements for dealing with cases; & • Mechanisms to hold accountable alleged perpetrators associated to the project; The GRM process for capturing disclosure of GBV; and, a referral pathway to refer survivors to appropriate support services. • Disciplinary action for violation of the CoC by workers. It is essential that such actions be determined and carried out in a manner that is consistent with local labor legislation and applicable agreements. • The Contractor's supervision consultant and FAO GBV officer should carefully monitor and report on the effectiveness of the implementation of the GBV Action Plan to prevent and mitigate most GBV risks and impacts associated with the project. Reporting should be done, on a monthly basis (*once or twice, depending on the necessity*).			
14	COVID-19 outbreak	Manage prevention measures	• If leaving a partially constructed asset unfinished may present environmental or physical risk – e.g. unfinished water harvesting structures may lead to a risk of flooding – than alternative arrangements such as the contracting of commercial service providers should be considered. Assessment of risk and appropriate mitigation measures should be based on inputs from technical teams, engineers and/or government counterpart; • Ensuring construction tools allocation per workers and not sharing with others; • Integrate FSAC "Standard Operating Procedures (SOPs)/Recommendations for continuation of the implementation of FAO emergency projects in the context of COVID-19" in the Letters of Agreements with implementing partners; • Dissemination of awareness raising materials on safety measures related to COVID-19, as well as awareness raising sessions at the project sites; Distribution of cash through FAO subcontracted Financial Service Providers	Throughout Project lifecycle, particularly during project	Implementing partners and FSPs	Third-party monitoring reports

CHSS Item#	Issue	Requirement/ Objective	Action / Mitigation Measure(s)	Timing	Responsibility	Means for Verification
			(FSPs) ie bank branches and guiding FSPs on ensuring safety measures (availability of hand sanitizers, posters, mandatory use of face masks, etc.) in collecting cash by beneficiaries. Ensuring the application of "staggering approach" (serving certain number of beneficiaries a day) in the distribution of cash by the FSP to avoid crowding at the bank branches.			
15	Health and safety risks for CFW community workers	Manage mitigation measures	• All CFW community workers and Control team will be provided with adequate PPE throughout the implementation of the project, and will be provided with on-job training regarding the OHS and how to identify risks associated with the project activities as it will be detailed in the ESMP's.	Throughout Project lifecycle, particularly during cfw activities	Implementing partners FAO IU	SFD quarterly reports and Third-party monitoring reports
16	Health and safety risks for Desert Locust Control Centers (DLCCs) during operation phase	Reduce health, safety for DLCCs during the operation phase.	• All DLCCs will be provided with first aid kits and fire fighters and necessary training to prepare emergency plan.	During operation phase	FAO/ MAI	Field visits and quarterly reports

Source: CATS, December, 2020

PLAN MONITORING

Performance Monitoring Indicators for community, health, safety and security risks are set out in table below.

Table 10: CHSS key performance monitoring indicators

CHSS Ref #	KPI	Target	Frequency (*Timing/Phase*)	Monitoring Measure / Method for verification
1	Community Health & Safety	Review community health accidents/incidences in local hospital, on a monthly basis, (i.e. intoxication, STI, HIV/AIDS, waterborne & respiratory diseases, Malaria, …)	Monthly (*1 or 2x*)	Record of accidents/ incidences
2	GBV/SEA/SH	Assess number of cases of GBV/SEA/SH in all project sites and report to the GBVO in both Eden/Hodeida and Sanaa and resolved within a reasonable timeframe.	Monthly (*1 or 2x*)	# of cases recorded and adequately dealt with
3	Community Grievances Redress efforts	All community grievances received and acknowledged by the CFO/LO within **48 hours** from receipt and aimed to be resolved within **30 days** reported to the Safeguards and GBV team in Sanaa.	Monthly (*1 or 2x*)	% Resolved grievances

Legend: KPI=Knowledge Performance Indicator ----////----- Source: CATS, December, 2020

6.2.1 Assessment of Security Risks and Security Arrangement

The security situation in the country may impact the project activities. The potential security risk may include the following:

- Looting of the procured assets under the project (especially the pesticide).
- Potential delay in project activities as a result of direct or indirect interference in project activities or due to the security clearance procedures in sensitive areas.
- Armed conflict and political tensions may lead to temporary suspension or re-allocation of sub-project activities or may prevent the implementation of some activities, such as the desert locust control, especially if there are near the desert locust breeding areas.
- Targeting of and potential damage to the pesticide trucks during the transportation and distribution to the desert locust centers (DLC).
- Targeting of and potential damage to the pesticide warehouses in the DLC or MAI offices

FAO will take the overall responsibility to ensure the appropriate security arrangement, which will include but not be limited to the following measures:

- The project assets will only be kept and stored in fenced and secured areas and buildings under (private or government) security personnel.
- Coordination with related government entities to facilitate the issuing of the security clearance permissions at central and governorate levels.
- DE confliction procedures will be applied for the pesticide trucks and allocated pesticide warehouses.
- For cash for works (cfw) activities, SFD will secure the safe dispatching of workers dues by contracting with financial service providers to reach the rural/urban areas stakeholders in the targeted areas.

Coordination with local security authorities/community leaders, workers training (security briefing etc.) incident reporting and emergency preparedness will be undertaken.

In addition, FAO, MAI and SFD will monitor the situation and follow appropriate security mitigation measures during the implementation of the project activities and will prepare, adopt, and implement a stand-alone Security Personnel Management Plan consistent with the requirements of ESS4, in a manner acceptable to the World Bank.

If the security personnel, including those of the government, will be engaged for other purposes, the security management plan will be prepared and implemented, acceptable to the Bank and consistent with the ESS4 and its Good Practice Note on the Use of Security Personnel (such as background screening, proportionate use of force, training, equipment, and monitoring of possible abusive/unlawful act).

6.3- Gender-Based Violence Action Plan (GBVAP)

According to the World Bank research group (2018)[42], no country, community, or economy can achieve its potential or meet the development challenges of the 21st century without the full and equal participation of women and men, girls and boys. The World Bank is therefore committed to closing gaps between males and females globally for lasting impact in tackling poverty and driving sustainable economic growth that benefits all (World Bank, 2018).

According to a 2013 WHO analysis, worldwide, about 35-40% of women have experienced either non-partner sexual violence or physical and/or sexual intimate partner violence (IPV); both manifestations of Gender-Based Violence (GBV). Every community in which the World Bank has operations includes women or girls who have experienced or will experience GBV. Globally, the Women Business and the Law report of 2018, found that out of 189 economies surveyed, 69% of them were found to have legislation addressing sexual harassment in employment. Experience elsewhere has proven that sustainable development project, such as YDLRP, involving moderate to major civil works can increase the risk of several forms of GBV, in particular sexual exploitation and abuse (SEA), and sexual harassment (SH) (hereafter referred to SEA/SH), in both public and private spaces, by a range of perpetrators and in a number of ways, such as (i) Projects-driven changes in the communities that cause shifts in power dynamics between community members and within households (*i.e. male jealousy, abusive behavior, etc.*); and, (ii) Job opportunities for women and girls limited by the lack of appropriate means of transportation options.

The socio-cultural and technical barriers that women face, such as the burden of women having the responsibility of most of the chores in the household with little assistance from men, the gap in literacy levels, socio-cultural barriers on women's mobility and language barriers, causing women to have less access to training and information. The unpaid work, the time burden and due to these, the lack of time for women and youth to participate in meetings, trainings and platforms for decision making. The lack of political empowerment of women is visible in the lack of women's involvement at the level of local development planning and management. This situation is worsened by less female extension officers targeting opportunities for women to attend trainings, making women less connected to new agricultural practices and technologies.

In the YDLRP project area, women have smaller plots, have often less fertile and more degraded land, have less access to small tools and to animal traction because family fields and male-owned land are prioritized in the usage of tools. Moreover, women have less extension services on their fields to assist with advice on use of fertilizer, pesticides and irrigation technology; and as a result, yields in women's fields are much lower.

Because of different access to resources, women and men make different decisions in choice of crops, varieties, mixed cropping and related activities in each step of the value chain. Women are involved in the production of crops (women are assisting in planting, weeding, harvesting, storing, and cleaning before selling) and are major actors in the processing, distribution and sales activities, which are affected by climate change and desert locust plague events. Post-harvest activities carried out by women are affected by climate change and desert locust plagues either because of change in quality of the product, difficulties to access clean water, fuel wood, difficulties to dry and to store produce, and difficulties to harvest enough for the household.

[42] - The World Bank is committed to closing gaps between males and females globally for lasting impact in tackling poverty and driving sustainable economic growth that benefits all (World Bank, 2018)

Women are involved in forestry mainly in collection of Non-Timber Forest Products (NTFP) and, in the project intervention zone, in particular in the collection and processing of olive nuts, locust bean fruits and vegetables which are providing an income to women; a coping mechanism when other crops fail, especially in the aftermath of the devastating locust swarms. Even if the forestry sector and forest management mechanisms are often male dominated, some women have started tree nurseries to benefit from development initiatives.

Women are primarily responsible for collecting water. The spray of pesticides all over the country, and particularly in locust affected areas, will affect the availability of quality water for the household (HH) and therefore affect women's time burden negatively. Quality water rights and water governance is often linked to land rights and so women are less formally involved in water resources management.

While men opt for migration when natural disasters, such as desert locus invasion, destroy the household livelihoods resources, women are more limited because of the domestic responsibilities and the traditional roles and gender division of labor. When men migrate, women have to cope with the post-disaster situation and take care of the household, decide on how to provide enough income for food and the needs of the family. In climate change and desert locust plague related disasters contexts, an increase in gender-based violence has been documented. As such, barriers for effective participation of women and increased conflicts on access to pastures, water, and land will increase tensions and could lead to higher number of cases of Gender Based Violence (GBV). Finally, natural disasters effects on crop yields can lead to higher indebtedness' of the households and this can as well contribute to more tensions at the household level and incidences of GBV.

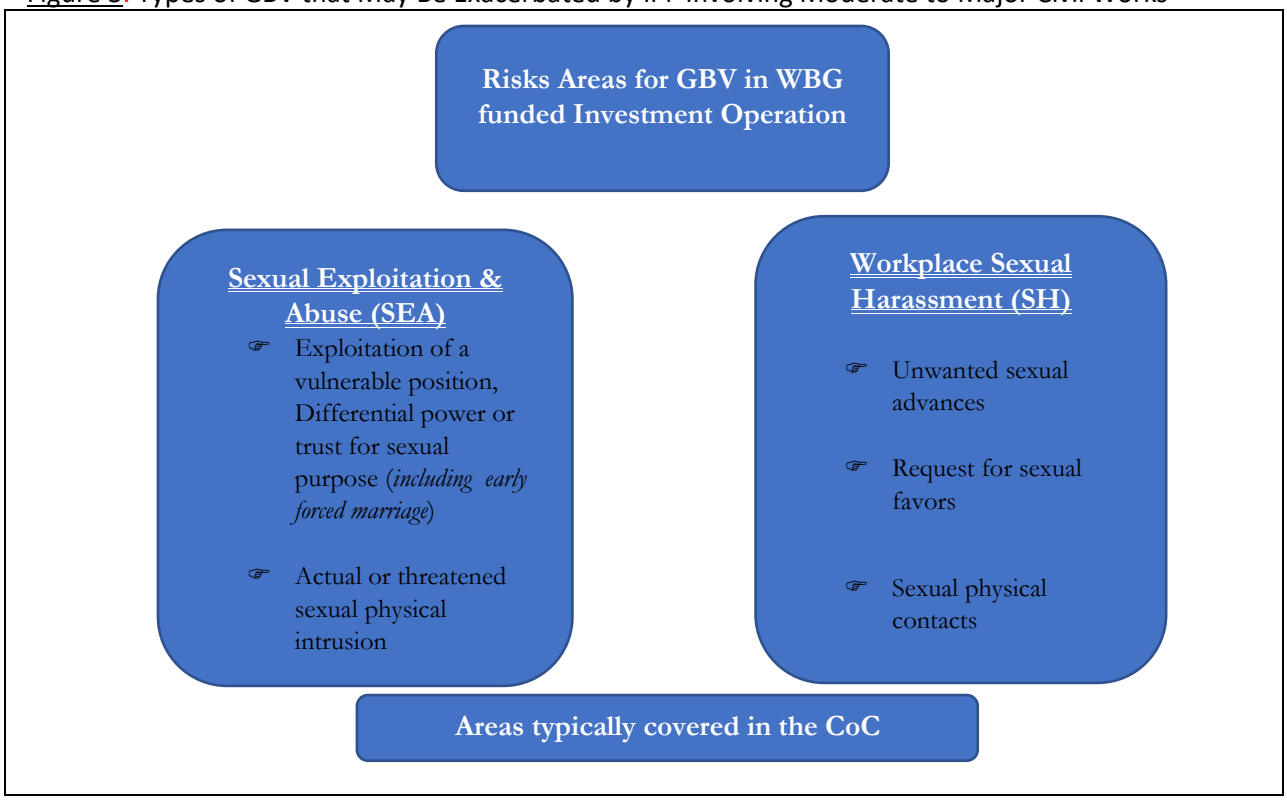
According to the 2015 Inter-Agency Standing Committee Gender-based Violence Guidelines and the UN Glossary on Sexual Exploitation and Abuse 2017, Gender-based violence (GBV) is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially-ascribed (i.e., gender) differences between males and females. It includes acts that inflict physical, sexual or mental harm or suffering, threats of such acts, coercion, and other deprivations of liberty. These acts can occur in public or in private. It includes three equally important factors, namely **(i) Sexual exploitation** (SE)that is understood as any actual or attempted abuse of a position of vulnerability, differential power or trust for sexual purposes, including, but not limited to, profiting monetarily, socially, emotionally or politically from the sexual exploitation of another human-being; (ii) **Sexual abuse** (SA) defined as actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions; and, (iii) **Sexual Harassment** (SH) seeing as any unwelcome sexual advances, request for sexual favors, and other verbal or physical conduct of a sexual nature.

The ESF's Environmental and Social Standards (ESSs) set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts associated with projects supported by the World Bank. While the ESF itself does not explicitly mention SEA/SH, various ESSs are in alignment with the recommendations of the World Bank Good Practice Note (GPN) for addressing GBV/SEA/SH, including:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts;
- ESS2: Labor and Working Conditions;
- ESS4: Community Health and Safety; and
- ESS10: Stakeholder Engagement and Information Disclosure.

Though there are four broad categories or manifestations of GBV that may be exacerbated by World Bank-financed IPF involving moderate to major civil works; precisely only two of them, namely SEA and workplace SH are the types of GBV most likely to occur in or be exacerbated by IPF. Our risk identification and mitigation of these forms of GBV will therefore be primarily focused on them.

Figure 3: Types of GBV that May Be Exacerbated by IPF Involving Moderate to Major Civil Works



Source: CATS – December, 2020

In the very context of World Bank-financed operations such as YDLRP, project beneficiaries or members of project-affected communities (women, girls, men, and boys) may, sometimes, experience SEA and/or SH. Bank-financed projects may introduce goods, benefits, or services to a project-affected community, either momentarily or indefinitely. Likewise, project workers may broker access to the goods, benefits or services that are Bank financed. This creates a power differential between project workers who uses access to the goods, benefits, or services to extract gain or favor from those who seek them. The power differential is created when a project worker has real or perceived power over a resource that can then be used to leverage or pressure a community member into an unwanted sexual act[43]. If the project worker uses this differential power to extract sexual gain, he is sexually exploiting a project beneficiary.

World Bank developed tool for Task Teams to assess the risk of GBV, particularly SEA will be applied to the project. The tool helps Task Teams understand the issues and risks of GBV in the project areas. It takes into consideration both project-specific details, such as labor influx levels, as well as the country context where the project takes place. Through 25 questions, 12 to be answered by the project team and 13 that are prepopulated, the tool draws on information to give each project a risk 'score' based on

[43] - SEA occurs against a beneficiary or member of the community, whereby SH occurs between personnel/staff and involves any unwelcome sexual advance or unwanted verbal or physical conduct of a sexual nature.

the responses to the questions. The questions are meant only as a starting point, and are not intended to be exhaustive. The risk score is calculated on a scale of 0 to 25: projects that score 0-12.25 are considered 'Low' risk; 12.5-16 'Moderate' risk; and projects that score 16.25-18 represent a 'Substantial' risk, and project that score 18.25-25 are considered 'High' risk projects.The GBV Risk Assessment Tool is designed to be applied at the outset of a new Project[44]. Thus the project GBV/ SEA risks rating will be developed during the implementation phase where deemed necessary.

The Gender-Based Violence Action Plan broadly proposes a variety of activities and targets for each of the project components and outputs that should enable the project to contribute to empowerment of women and girls, through their participation, capacity building, institutional and regulatory systems and gender sensitive planning and development for improved management of locust affected areas. By its end, the project is expected to achieve increased resilience of health and well-being, and food and water security of the most vulnerable people including women and girls and improved socioeconomic conditions of women and girls through technical and financial assistance to gender specific activities and for the vulnerable farmers (i.e. CFW) of Yemen.

At the household level the relations between women and men will be improved through the implementation of gender norms in the areas of shared responsibilities and shared decision-making on incomes, secured access to land for investments in women's production and processing units, women's mobility and participation of women in trainings, meetings and decision-making processes.

Diagnosis and referencing

The 1990 unification Constitution of Yemen (Article 40 and 41) stipulates that all citizens are considered equal before the law and that *"**Every citizen has the right to participate in the political, economic, social and cultural life of the country**"*. Nevertheless, recent literature clearly show that gender discrimination is still prevalent in Yemen. This perception is further supported by Article 31 (that technically contradicts article 40) by stating that "***Women are the sisters of men...they have rights and duties, which are guaranteed and assigned by Shari'a and stipulated by law**",* which somehow has seemingly nullified the equality extended by the Yemeni Constitution due to its use as a base for discriminatory laws. According to activists, this is due to the specific reading of Shari'a, which restricts the "***Rights of Women***". Today, many Yemeni activist women believe that Shari'a can be interpreted to further include women in the social, political, economic, and cultural life of the country.

As stated above and furthermore, Gender-based violence (GBV) is one of the human rights violations that worsen in times of emergency, such as in Yemen. In the case of some development projects, women and adolescent girls are often particularly exposed to the risks of sexual violence, exploitation and abuse, denial of resources and harmful traditional practices. Men are also concerned. According to a UNFPA Yemen factsheet (October 2017), about 2.6 million of women and girls are at risk of GBV, and over 52,000 women at risk of sexual violence including rape.

GBV has significant and lasting effects on the health and psychosocial and socio-economic well-being of those affected. According to consultations with stakeholders, especially women, there are several cases

[44] **Good Practice Note,** Addressing Gender Based Violence in Investment Project Financing involving Major Civil Works , **28 September 2018**

of GBV in the project areas. Some of the stakeholders met underlined the fact that victims of GBV always prefer to remain silent, not to talk about it given the socio-cultural constraints and weight on these issues.

Code of Conduct (CoC)

Applied under the coordination of YDLRP and the Sana'a PMU, a dedicated consultant will help develop a code of conduct with the support of the Safeguards and GBVO team. It must be signed by all those working on the various project sites (Sana'a, Aden and Hodeida). Indeed, the GBV prevention protocol within the framework of the implementation of this emergency Project is fundamentally based on the development and adoption of a Code of Conduct (CoC) covering the commitment and responsibility of the Implementing Partners / Contractor (*i.e. collective code of conduct, involving the implementing partners /contractor as an entity*), but also the staff of the implementing partners /contractor and all other people involved in its implementation.

- Implementing partners / Contractor's personnel;
- Staff of the control mission;
- Security services and providers (security forces);
- Consultants, sub-contractors, and other service providers recruited under the Project.

The Code of Conduct will be developed by a dedicated consultant and it will include an Action Plan. It will specify the audience of the training on CoC and SEA/SH GRM, in particular, laborers and communities (more specifically, CFW beneficiary households), timeframe and the frequency of the training, as well as responsible parties for conducting the training. Worth noting, that the GRM is an integral part of the Letters of Agreements between FAO and implementing partners, as part of which FAO personnel arrange training sessions for IP representatives on handling GRM (awareness raising among communities and beneficiaries, GRM procedure).

This code of conduct must be prepared and signed by all the structures or associated partners of the Project. The signing of the code will confirm the commitment of the Project and all stakeholders individually, to fight against all forms of violence based on gender or committed against children, but also to report, in complete confidentiality, all suspected or actual acts. of GBV committed by one of the actors of the Project. The clauses relating to the prevention of acts of gender-based violence and the code of conduct must be included in all tender documents launched as part of the implementation of the Project. All external stakeholders must comply with these requirements and pay particular attention to the protection of children and women and report any act of sexual abuse.

GBV monitoring and support framework

Prevention

The adage that "*prevention is better than cure*" applies to the field of gender-based violence in terms of its individual and collective consequences. The main objective is to awaken the awareness of the actors (i.e. FAO, contracting company, control office, etc.) and of the project beneficiary communities. It is:

Sensitization/Awareness Raising and Information

Three (03) information and awareness raising sessions are planned at the start and during the implementation of the Awareness project. An NGO specializing in the management of GBV should be recruited by the company in the project intervention area to carry out Information, Education and Communication /Communication (EIC) campaigns in the project-affected neighborhoods, villages, and districts.

Behavior Change (IEC) on GBV/SEA/SH and information signature of the code of conduct by the staff of the contracting company and the Control Office Company staff, the Control Officer and any person working on the YDLRP sites or any person recruited under the project will be required to sign and strictly observe the code of conduct prescriptions. Indeed, it is incumbent on all these actors to take measures to prevent GBV/SEA/SH within their own structure. They should ensure that all their personnel working on the various spray and/or construction sites have good knowledge of GBV/SEA/SH. Before the start of civil work, all recruited staff must receive training on GBV/SEA/SH and a refresher session every quarter. All these sessions must/ought to be recorded and adequately filed under the project.

Support for "surviving" victims

Case registration
Any victim must be immediately accompanied to the selected/designated NGO to provide this specialized service. The NGO receives the GBV incident report and then takes care of the treatment procedure.

Supported
When it is proven that a person is a victim of GBV/SEA/SH, the NGO will seize the contractor, the control office, FAO and the National Committee for the Fight against Gender-Based Violence (CNLVBG) for responsibility for the victim at the expense of the actor considered to be the aggressor (i.*e. contractor, control office and any person intervening on the site or recruited within the framework of the project*). Support will concern the following components:

- medical,
- psychosocial,
- legal and judicial,
- Reintegration (wherever deemed possible).

Institutional roles and responsibilities of the GBV control mechanism:

The coordination of prevention and response activities to GBV at the country level is ensured by the National Committee for the Fight against GBV in Yemen, particularly at each regional office, through a structure based on several levels of coordination (district/village).

For the YDLR Project, the coordination framework will be as follows:

- the established GBV control committee, which is the operational technical body for project implementation monitoring & evaluation (inclusive of the GBVO). It will take care of GBV victims in collaboration with the designated/selected NGO. The NGO to be recruited will also work on identifying key players and decision-makers to form the GBV Control Committee at the project level;

- YDLRP will monitor the support and mobilization of financial resources from the aggressor. Where aggressor is determined to be resourceless project will financially support the immediate care of the victim;
- The given NGOs will have for mission, among other things, the registration and transmission of the complaint to the YDLRP's PIU, control office and to the contractor, support the affected survivor to/at the survivor's reception center, follow-up and assistance to the victim until his successful reintegration into the community/society. Indeed, the mechanism provides that in case of GBV, the filing of the complaint is made at the level of a women's organization, in particular a designated NGO which intervenes in the field of assistance to GBV/SEA/SH survivors which in turn calls on the social and welfare services depending on the type and level of violence suffered by the survivor.

GBV/SEA/SH Risks The GBV/SEA/SH risks related to the implementation of the project are: Sexual harassment, sexual exploitation and abuse, physical violence, moral violence, sexual violence, negligence, Stigmatization, refusal of care, discrimination, sexual favours for registration or release of cash. They will be continuously updated, to adapt the proposed responses.

Reporting procedure

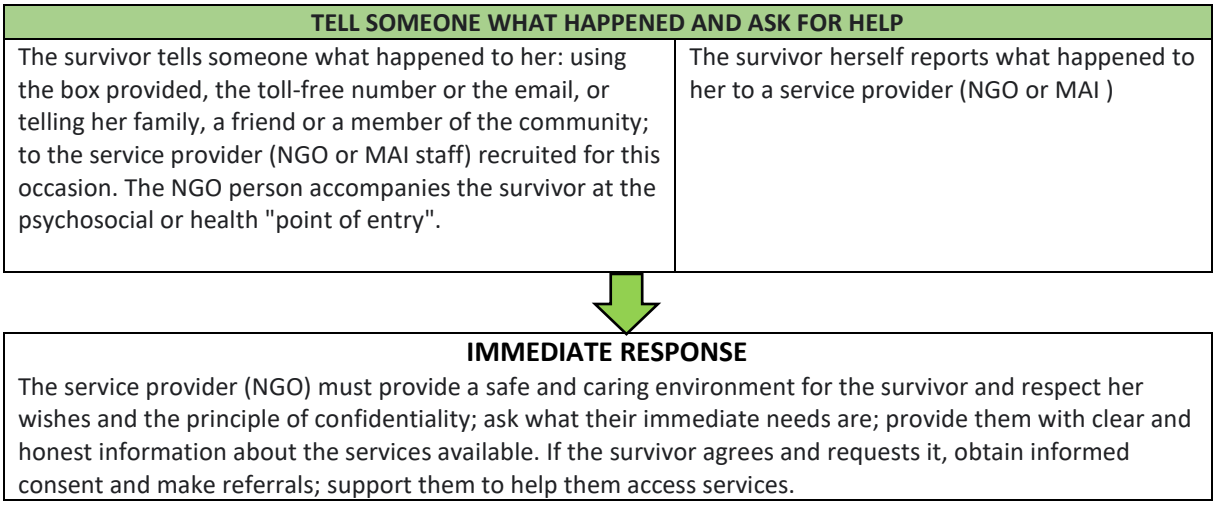
Within the contracting company, the reporting of cases will be done through several channels: boxes made available to staff and partner structures, email (the NGO will provide a functional email address), existing hotlines (*Law enforcement emergency call/help line numbers: Police, etc.*). This procedures will follow the protocol of the GRM respecting the proper reporting channels.

The principles/procedures for reporting are:

Guarantee of anonymity, confidentiality, security and assessment of residual risks,

Guarantee of human dignity, confidence. In accordance with the standard operating procedures for the care and prevention of GBV adopted by Yemen, the care will include a medical and psychological response, support towards a safety and security response and a legal response.

Figure 4: Signaling and referral diagram



Medical / health entry point [*the service provider must tell the survivor the name of the medical center (s) that fulfill this role*],	Entry point for psychosocial support [*Indicate the name of the psychosocial service provider (s) fulfilling this role*]

IF THE SURVIVOR WANTS TO BRING LEGAL ACTION / COMPLAINT - OR - IF THERE ARE IMMEDIATE RISKS TO THE SAFETY AND SECURITY OF OTHERS the NGO must refer and accompany the survivor to the police - or - to legal aid for information and assistance for referral to the police.	
Police / Security [The NGO will give the survivor specific information on the security actor (s) to contact - specifying where to go and how to contact them]	**Legal aid advisers or protection officials** [the NGO will tell the survivor the names of organizations working to help and protect against GBV

RESPONSE FOLLOWING IMMEDIATE RESPONSE, FOLLOW-UP AND OTHER SERVICES Over time and depending on the survivor's choices, the NGO must monitor the progress of the treatment of cases, constraints, additional needs in terms of assistance / support.			
Heath Care	Psychosocial Services	Protection, Security and justice actors.	Basic needs such as safe shelter, services for children, etc.

Source : CATS, December, 2020

For all cases of violence directed to the care services previously identified, the care will include:

The medical response

Health care providers must ensure confidential, accessible, compassionate and appropriate medical care for survivors / victims of GBV, in an environment of safety. Where the aggressor is unable to finance the medical response project will finance it. For sexual violence, medical care includes at least:

- An examination and a written description of the victim's conditions, including injuries and bruises
- Treatment of injuries/bruises
- Collecting minimal forensic evidence
- Psychological/emotional support
- Medical documentation (*issuance of a free medical certificate for the survivor for all cases of GBV, but at the expense of the contractor/company*)
- List of psychological, legal/judicial assistance services, security, social reintegration;

Psychosocial response, emotional support, and safety and security response

The company, through the designated NGO, will work in close collaboration with the response and care structures for survivors of GBV/SEA/SH existing at national and regional levels and with the competent services listed in the directory of services support for GBV in Yemen.

For cases of sexual harassment, exploitation and/or sexual abuse:

- All cases must also be systematically reported to the YDLRP PIU within 24h without providing specific details to preserve confidentiality but with clear information on: the nature of the case; the linkage with the Project; the age and sex of the victim/survivor, if available, and referral to services if this was the case.
- A space for survivors to report SEA/SH incidents and provide a safe, ethical, and survivor-centered response should be created and facilitated by trained individuals and/or NGO.

Monitoring and evaluation:
In accordance with the principles of ethics, security and confidentiality, no information that could identify the survivor/ victim her family and the perpetrator should appear in a data report. These must be kept secret and very confidential, Monitoring makes it possible to share the progress of case processing, constraints, additional needs in terms of assistance/support. This role will be performed by the NGO which is the GBV focal point of the Project, which will be the interlocutor of the reporting and support services.

The principles to be observed in the documentation and follow-up of cases:

Complete the incident report forms in accordance with the set-guidelines;

- Ensure the absolute confidentiality of information gathered;
- Respect the survivor;
- Keep the completed incident forms in locked cabinets

Depending on the seriousness of the case, periodic (either a bi-weekly or a monthly) report will be prepared to report on the status of the management of registered GBV complaints. The following key information should be included in this report:

- Number of cases of gender-based violence and violence against children reported
- Types of incidents (definition or categorization of cases)
- Number or percentage of incidents (by type of incident) according to:
  o the time of day (*morning, afternoon, evening, night*)
  o of the place in general (*without forgetting that too precise mention of a place can easily identify a survivor*)
  o the survivor's age, marital status or other demographic information
  o the relationship between the abuser and the survivor
  o the number of aggressors;
  o the age of the abuser and other demographic information
  o services received, referrals made and pending actions
  o results of medical, social, psychological, legal care, etc. (*i.e. number of cases treated and closed, number of cases under treatment, constraints, etc.*)
  o Sanctions taken internally wherever applicable.

These reports will be supplemented by an analysis to be carried out continuously throughout the duration of the implementation of the Project. The results will be shared with the populations and Project staff. This essential information will allow FAO, the contractor, the control office and YDLRP to better adapt or orient prevention and care activities (awareness raising messages, redefinition of targets, valorization and capitalization of lessons and experiences, including missed opportunities), and to better collaborate with community stakeholders and workers on the site, particularly women, young girls and elderly.

Monitoring indicators

The indicators to be followed in the implementation of GBV cases management are listed in the below table:
Table 11: Monitoring indicators

Sector	Prevention	Response
General	Number of training / awareness campaigns on GBV / SEA/SH prevention organized per month; Number of people sensitized (men & women) on the prevention of GBV/SEA/SH per month; Number of people affected by the Code of Conduct; Number of employees or service providers who have signed the code of conduct.	Number of registered GBV/SEA/SH cases; Number of GBV/SEA/SH cases taken care of within the deadline; Number of cases of GBV/SEA/SH linked to the project; Number of referred GBV/SEA/SH cases GBV/SEA/SH cases follow-up report prepared for the period.
Medical	Number of monthly awareness sessions on the medical aspects of GBV/SEA/SH; Number of follow-up forms completed by GBV committee members reporting on the medical aspects of GBV/SEA/SH.	Number of girls / women who received medical care within 72 hours of rape; Number of GBV Survivors referred to medical structures.
Psychosocial	Number of girls / women who received psychological care within 72 hours of rape Number of GBV Survivors referred to medical structures.	Number of GBV/SEA/SH survivors followed up as part of an individual care plan.
Justice	Number of monthly awareness raising sessions on legal aspects related to GBV/SEA/SH; Number of follow-up forms completed by members of GBV committees that report on legal aspects.	Percentage of GBV/SEA/SH survivors who filed a complaint; Percentage of gender-based violence complaints that resulted in a summons Number of GBV Survivors (*girls/women/men/boys, transgender*) who have benefited from legal and/or judicial assistance

Source: CATS, December, 2020

Information/Awareness raising program, environmental and social education & Communication

Context

A coherent program of information, awareness and environmental and social education and communication in the beneficiary neighborhoods of YDLRP intervention areas can significantly contribute to mitigating the likely negative impacts of the project, in particular issues related to gender-based violence (GBV/SEA/SH).

The program will allow the development of targeted methods and the implementation of appropriate information, awareness and education actions for populations, contracting company staff and the control mission to prevent violence on/towards women, children, the disabled, elderly, etc.

Definition

The communication, education, awareness raising and public consultation and participation program is a public policy and change management tool that aims to encourage and mobilize individual or collective actions to respond to the environmental and social issues generated by the project, including GBV. It is based on a series of tools for communication, information exchange, social marketing, education and training programs as well as participatory processes.

Goals

The general objectives of this Environmental and Social Education awareness raising information program are:

- maintain or even improve the quality and the living environment of the beneficiary populations;
- take all measures to prevent GBV/SEA/SH;
- encourage the beneficiary population of the project, the personnel of the companies and of the FAO and/or contracting company's control mission to adopt a behavior aimed at respecting human rights
- Inform all project stakeholders on the survivor care circuit, and its absolute confidentiality.

Principles

To achieve these objectives, the Information, Awareness raising, Education and Communication program will be based on the following principles:

• Communication

It concerns the establishment of a multi-partner dialogue, to identify and make known the expectations of each, and the dissemination of information, to strengthen the action capacities of actors and beneficiaries. To this end, the FAO-led PIU will develop a community-driven and victim-centered communication plan.

• Education and Training

Education and training promote awareness raising and empowerment schemes by developing and updating community-centered knowledge about GBV/SEA/SH prevention and avoidance.

• Sensitization/Awareness Raising

Public awareness raising reveals interest in knowing the drivers, risks and consequences of GBV/SEA/SH and promotes the behavioral change of populations.

• Public Consultation and Participation

Public consultation and participation is an iterative process that goes throughout the project lifespan. As such, it stems from the need to conduct a consultative and participatory approach in the implementation of preventive and protective community and victim-centered actions against GBV/SEA/SH. It ensures the relevance of the measures adopted and greatly facilitates their easy and sustainable implementation due to the suitability and openness mindset of the beneficiaries. As a result, it guarantees the easy acceptance and integration of the project into its receiving environment.

Activities

The activities of this proposed program could be focused on:

- *Conferences/workshops and public talks/brainstorming*
  - o The organization of public conferences/workshops;
  - o The organization of public talks/brainstorming;
  - o The organization of community driven and centered activities in the neighborhoods.

- *Education actions by*
  - o Production and distribution of newsletters and prospectuses

o activities in schools/madrassas/community centers, etc.

- *Actions to support capacity building at the local level:*
  o Create and/or maintain support staff for continuous awareness raising and education
  o Encourage grassroots community associations and associations with a human rights defense interest to manage the programs and provide them with the necessary equipment (*i.e. necessary, technical support, protection and mainstreaming means, etc.*).

- *Awareness raising campaigns to further mobilize the population*
  o This involves carrying out citizen engagement/mobilization campaigns to promote the participation of women, young people, populations and local communities in awareness-raising and education and communication sessions.

- *Campaigns to support the development of NGOs*
  o This involves leading community-centered campaigns to support the development of NGOs, associations and groups with an interest in the protection of human rights, victims' rights and in particular the establishment and training of community-relay facilitators.

Target people
The capacity building, information and awareness raising plan will target all/key project stakeholders:

- Pesticides/insecticides spraying teams
- Construction companies and their subcontractors
- Control mission (either from FAO, the Government or independent entity, etc.)
- Authorities and administrative services
- Municipal authorities
- Security and law enforcement agencies/forces
- Local people living around the works (*religious/cultural leaders, women, young people and community leaders/neighborhood leaders, student, volunteers, etc.*)

Communication media and channels likely to be used
Several types of communication media could be used to inform and raise awareness among site workers, residents, and end-users. Among these communication media, we can retain the following:

- The posters

They can be prepared to better disseminate the site's internal regulations/bylaws which are the set of rules, including environmental and social aspects, including prevention of OHS and GBV/SEA/SH, on the site (*i.e. good environmental, social, GBV/SEA/SH code of conduct*), to which the personnel (*altogether: managers, technicians, workers and laborers*) must absolutely comply on the site. This also include the safe monitoring with neighboring/adjacent/riparian communities.

Posters must be displayed at strategic locations throughout the various project site (*i.e. display panels, workshops, offices, camp, vehicles, billboards, etc.*) and in key public places.

The posters will be posted at the places indicated from the start of work in the project intervention areas and renewed at least every quarter, considering the effect of wear due to long exposure.

- The brochures

The brochures and/or pamphlets can be made up and relate to both the site-workers as well as the neighboring populations and users of the various project areas, considering cultural disparities. In this case, the information and awareness raising topics to be disseminated will be very specific (*i.e. prevention and support services for GBV/SEA/SH, etc.*). The prepared brochures will be distributed to neighboring populations and to users of the works areas as the activity execution period approaches and periodically if possible.

- Group interviews

These are explanatory and discussion meetings on various topics concerning GBV/SEA/SH. They constitute an interactive channel to inform and broaden awareness raising not only of site personnel, but also the local populations of the various project intervention areas. Group interview, including focus-group sessions can be organized periodically (i.e. once a quarter). They are organized either by an NGO specializing in GBV and/or FAO-led GBVOs in each of the regions.

Training on GBV/SEA/SH, Grievance/Complaints/Case handling mechanism

Goals

The general objectives of this training program are:

- Train those responsible for handling complaints in empathetic and non-judgmental listening to treat each survivor with care, respect and dignity so that she/he is able to tell her/his story in her/his own words, while ensuring that she/he can keep her/his story for her/him;
- Educate actors on the importance of consent from the survivor who must be aware and understand all available options and their consequences;
- Learn how to provide victims with comprehensive, detailed and communicated information in an easy-to-understand manner about services and the complaints/grievance/case mechanism;
- Know the procedures for reporting/taking charge of and securing (*i.e. confidentiality, protection, respect for dignity*) of victims of sexual abuse/harassment and of the people who report them, and of the sanctions provided for by law and by the Project regulations;
- Make everyone aware of the complaints/grievances' management mechanism: who to contact, the different stages, regardless of the entry point, into the care-circuit; and the other available courses one could still explore in case of unsuccessful stream.

Targets

Training sessions can also be organized to build the capacities of grassroots community organizations, NGOs, structures specializing in GBV/SEA/SH. To this end, it is interesting that from the onset of the site, that the project organizes and runs, through an NGO specializing in GBV, an awareness-raising / training session on the one hand for the technical managers of the foreseen works/activities (i.e. drivers, supervisors, and controllers of works, security guards wherever necessary, etc.) all project staff and not

just technical managers, even those intervening temporarily; and on the other hand the neighboring populations on the core drivers/triggers and basics of GBV/SEA/SH.

Such an activity has the added advantage of familiarizing the staff and key players with specific actions on the prevention/avoidance of GBV/SEA/SH in the performance of their respective tasks, duties; and to make them more aware, conscientious, and autonomous in the implementation of these important actions.

As the work progresses and depending on the capacity building needs of core/key stakeholders, other training sessions on specific themes such as the fight against GBV/SEA/SH, the process of taking charge of survivors, social reinsertion of victims, etc. can be successfully and sustainably organized.

These will be led by professionals in the field. In addition to this, the project can make broadcasts via local radio stations, involving community leaders if possible, to ensure communication that meets its objectives.

GBV Complaints/Grievance Redress Mechanism:
According to consultations with stakeholders, especially women, victims of GBV always prefer to remain silent, not to talk about it given the socio-cultural constraints on these issues. The complaints/grievance redress mechanism is akin to the GBV impact process.

It provides that in the event of GBV, the complaint is lodged at the level of an NGO which intervenes in the field of assistance to GBV, which in turn makes use of the National Police and/or the Social Services on duty, depending on the level of violence suffered by the victim.

The victim can also directly contact the Social Services of the locality to explain her/his situation than necessarily going through an implementing partner (NGO or MAI) and the rest of the process remains the very same. Once seized, the national police initiate legal proceedings in the matter when the violence is proven by a medical certificate. If the victim has suffered trauma, she/he will be referred to the local Social Center for care. In caring for the victim, one of the most important points concerns his social reintegration.

7. ESMF PROCEDURES FOR SUB-PROJECTS/ ACTIVITIES SAFEGUARDS TOOLS

This section outlines the YDLRP-ESMF coordination and implementation, including the environmental and social screening procedures, approval, and implementation and reporting systems. To avoid or minimize the adverse environmental and social impacts of YDLRP, the steps in the Subproject/Activities Screening and Approval procedure are set out below.

For substantial environmental and social safeguards risk project like the YDLRP, FAO and the World Bank require the development of site-specific environmental and social management plan (ESMP) and site specific Pest Management Plan (PMP) or other safeguards tools such as the Waste Management Plan and for the other components involving mainly procurement of agricultural production/processing inputs at farm/household level, contract provisions covering environmental safeguards and OHS measures will be used as the most appropriate safeguard instrument. to set out the measures and actions required for the project to manage and effectively mitigate foreseen environmental and social safeguards risks and achieve compliance with the applicable Environmental and Social Safeguards Standards (ESS). The ESMF will list the commitments and actions the YDLRP project will undertake to achieve compliance with the

applicable eight (08) Safeguards Standards, namely ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, ESS10 throughout the entire project lifecycle.

Whenever a change management in the project occurs and that leads to a reclassification of the project during the implementation stage of this project, and new risks are identified, the ESMF will be reviewed concurrently/in line with the project environmental and social commitment plan (ESCP).

Mitigation Measures Checklist

By design, the project is expected to have far greater environmental and social benefits than adverse social and environmental impacts. The potential adverse environmental and social impacts from the project are likely to be small in scale and limited in size. Spatial and temporal distribution of impacts that would result from the project activities in components 1, 2 and 3 above, as well as the corresponding sub-projects, namely subcomponent 1.2, subcomponent 2.2 and subcomponent 3.1 require specific attention, particularly during project screening and implementation.

However, it is recognized that such impacts, if they are not identified early enough during the planning and preparation stages, and their site-specific mitigation measures adequately integrated into the project planning and implementation, can most likely accrue into much larger impacts, which handling will result in an incremental cost, often unaccounted. Given the fact that minimum impacts sub-projects are eligible and such impacts could be easily mitigated using sensible site selection criteria, good construction/rehabilitation and/or responsible pesticides usage practices in harmony with the local culture and diligent management practices in the operational phase[45].

Approach to Enhance Project Implementation

This ESMF is not being used solely as a compliance process: it goes beyond compliance and takes a proactive approach in design. Similarly, the grievance redress mechanism (GRM) included in this document is not just about being a last-resort mechanism; rather, the GRM is about creating a project culture of transparency with built-in feedback systems. As such, the ESMF is taken as a positive aspect that helps the project coordination units in identifying and developing activities for greater environmental and social co-benefits. To ensure, that the social and environmental issues are addressed properly in accordance and in compliance with both the WB and the FAO Safeguards Standards, all project activities shall systematically undergo a thorough screening, assessment, review, and clearance process before the physical execution of project activities.

This chapter describes the process for ensuring that environmental and social safeguards concerns are adequately addressed through the proposed institutional arrangements and procedures used by the project for managing the identification, preparation, approval, implementation and reporting of sub-activities. The detailed environmental and social safeguard process is listed below:

Step 1: Defining Sub-Activities and Eligibility Check

[45]As mitigation measures must be taken into account as part of the sub-project design and costs, the ESMP does not need a separate budget allocation. However, it is imperative that activities' costs reflect the resources needed to fully implement the ESMP.

As mentioned above, by design, the project is expected to have far greater social and environmental benefits than adverse social and environmental impacts. The potential adverse environmental and social impacts from the project are likely to be small in scale and limited in size. Nonetheless, it is recognized that such impacts can accrue into much larger impacts if they are not identified early enough during the planning cycle and their mitigation measures duly integrated into the project planning and implementation.

Considering activities to be implemented in each project site will be, very similar, in nature, size and scale across the implementation area, it is proposed that screening for potential risks and impacts is undertaken at sub-activity level. Sub-activities constitute a valid tool to identify expected impacts, mitigation, and monitoring measures. In this context, sub-activities will be identified during the inception phase in Year 1. For each sub-activity, physical sites will be identified along with activities, including capacity building/training and stakeholder engagement information specific to each selected site throughout Yemen's participating Governorates, regions and wadis.

Subprojects/activities have to be screened against the following environmental and social screening checklist to check their eligibility for YDLRP action or financing. Activities having one or more nature stated below are not eligible for funding under the YDLRP.

- Activities that may cause long term, permanent and/or irreversible adverse impacts (e.g. loss of major natural habitat).
- Activities that may have significant adverse social impacts and may give rise to significant social conflict.
- Activities that have high probability of causing serious adverse effects to human health and/or the environment other than during spray to control pests

If the answer to any one of the questions indicated above is 'Yes', then the subproject/activity should be rejected unless the features can be avoided by changing other safe pest management action. If on the contrary the answer is 'No', then proceed to the next step.

Step 2: Environmental and Social Risk Screening of Sub-Activities

During project implementation stage, once the physical footprints of subproject activities are known, FAO's environmental and social screening checklists (see Annex 14-1 & 14-2) will determine if a sub-activity will require a site-specific Environmental and Social Management Plan (ESMP). While the nature, magnitude, reversibility, and physical location of impacts are main elements in the screening of sub-activities, however, the screening rating results of the screening checklist will be a main factor in deciding whether or not a site-specific ESMP/ PMP is required for a sub-activity.

The same goes for the PPMP and the RPF, whenever deemed necessary, site specific Pest and Pesticides Management Plan (PPMPs) and/or RAPs will also be prepared for the given sub-project activities.

Two screening checklists have been developed to screen the activities under the YDLRP. The first screening checklist is for component 1 (Annex 14-1) related to the implementation of desert locust control activities and based on the screening rating a site specific PPMP will be prepared based on the stand alone PPMP. The second screening checklist is for component 2 and 3 (Annex 14-2) which related to civil work activities

(construction/ rehabilitation) for small water infrastructures and of DLC and based on the screening rating a site specific ESMP will be prepared based on this ESMF.

The following sections explain the steps that should be followed in screening sub-projects/activities.

First, for component 1, the field control team would check the sub-projects eligibility, then the responses of the check list will be concluded to check the risk rating. If the responses indicated more than one medium risk impacts, a site-specific Pest and Pesticides Management Plan (PPMP) for Deseret locust control management will be prepared for each breeding area (summer and winter) under the sub-project. If the responses indicated low to medium risk impacts apply the general mitigation measures in the PPMP. For the site-specific PPMP it will be prepared by FAO and submitted for World Bank clearance.

Second, for components 2 and 3, the SFD team and FAO PIU team would check the sub-projects eligibility, fill out the checklist, and conclude the responses of the screening checklist to check the risk rating. If the responses indicated more than one medium risk impacts, a site-specific Environmental and Social Management Plan (ESMP) for sub-projects under components 2 and 3 will be prepared for each sub-project. If the responses indicated low risk impacts provision to contracts, LoA, AAP will be the used safeguards tools. For the site-specific ESMP it will be prepared by FAO and SFD as a grouping of sub-projects under one activity and submitted for World Bank clearance before the commencement of work in the field. For the other safeguards tools, the most appropriate safeguards tools will be reported to the World Bank before the field activities and the screening checklist will be attached with all the tools as annexes or at earlier stage of the screening.

For a sub-activity that requires a site-specific ESMP, such activity must include a set of mitigation measures with monitoring and institutional arrangements to be taken during the implementation phase to correctly manage any potential adverse environmental and social impacts that may have been identified.

FAO will undertake environmental and social screening exercise using the Environmental and Social Screening Checklist (ESSC) annexed to this ESMF. Once the physical footprints of its implementation sites and beneficiaries are determined, a screening checklists will be completed per sub-activity and signed off by the safeguards specialist at the Project Management Unit (PMU) level. The results of the screening checklists will be aggregated by the safeguards specialist. This document will be sent to the FAO's Environmental and Social Management (ESM) Unit in Rome for review and endorsement, with copy to the partner institution, the World Bank for concurrence or just for information. FAO will exclude high risk subprojects.

Screening of sub-activities involves:

- Checking that involved activities are permissible (as per the legal and regulatory requirements of the project); and
- Determining the level of environmental and social assessment required based on the level of expected impacts and opportunities.

The E&S screening checklist (ESSC) will result in the following screening outcomes: (i) determine the category for further assessment; and (ii) determine which environmental and social assessment instrument to be applied. Pre-implementation safeguards documents (i.e. one per sub-activity) will be

prepared by the environmental and social safeguards specialist in the PMU[46] prior to the implementation of activities and sent to ESM Unit in FAO Headquarters in Rome for final review and endorsement, as well as World Bank clearance of safeguards tools.

The documents will outline the following information relative to each sub-activity:

a. Description of the activities to be carried out in all sites

b. Description of each implementing site; Geography and specificities in terms of activities; and Beneficiaries and stakeholders.

Step 3: Environmental and Social Risk Management (Monitoring and Reporting)

Sub-activities classified as substantial/moderate risk based on the environmental and social risks identified during the screening process will then be required to develop site-specific ESMPs / PMP that include information on the mitigation actions, the indicators, budget and timeframe where the completion of such mitigation actions are expected. While the nature, scale, magnitude, reversibility, and location of impacts are main elements in the screening of sub-activities, however the screening rating results of the screening checklist will be a main determining factor in deciding whether or not a site-specific ESMP/ PMP is required for a sub-activity.

The site-specific ESMPs (and/or PMPs or RAPs), in addition to the elements listed above, should include:

- Mitigation Measures: Based on the environmental and social impacts identified from the checklist, the ESMP should describe, with technical details, each mitigation measure, together with designs, equipment descriptions and operating procedures as appropriate.

- Monitoring: Environmental and social monitoring during the implementation of the sub-activities to measure the success of the mitigation measures. Specifically, the monitoring section of the ESMP provides:

    - A specific description and technical details of monitoring measures that include the parameters to be measured, the methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions.

    - Monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and to furnish information on the progress and results of mitigation, e.g. by semestrial/annual audits and surveys to monitor overall effectiveness of this ESMF.

- Third-Party Monitoring (TPM): Environmental and social safeguards monitoring by a TPM agency will be an integral part of the overall project monitoring system. The methodological approach of the TPM agency for monitoring will also include measures and tools on collecting data, its analysis and reporting on quarterly basis with regards to environmental and social safeguards.

[46] The ESSC could also be prepared by the Safeguards consultants, reviewed and approved by the FAO Sana'a-based Environmental and Social Safeguards Specialist , verified by the ESM Unit in HQ for final review and endorsement by FAO, with copy to the World Bank for consistency purpose and the ESSC will attached with ESMP.

• Institutional Arrangements: The ESMP should also provide a specific description of institutional arrangements, i.e. who is responsible for carrying out the mitigating and monitoring measures (for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting and staff training).

Additionally, the ESMP should include an estimate of the costs of the measures and activities recommended so that the necessary funds are included. The mitigation and monitoring measures recommended in the ESMP should be developed in consultation with and participation of all project affected/impacted groups to incorporate their concerns and views in the design of the ESMP. Once the pre-implementation documents with ESMPs are endorsed by the ESM unit in FAO Headquarters in Rome, the safeguards specialist from the PMU will ensure ESMPs are included and reported upon, along with stakeholder engagement in the context of the monitoring plan.

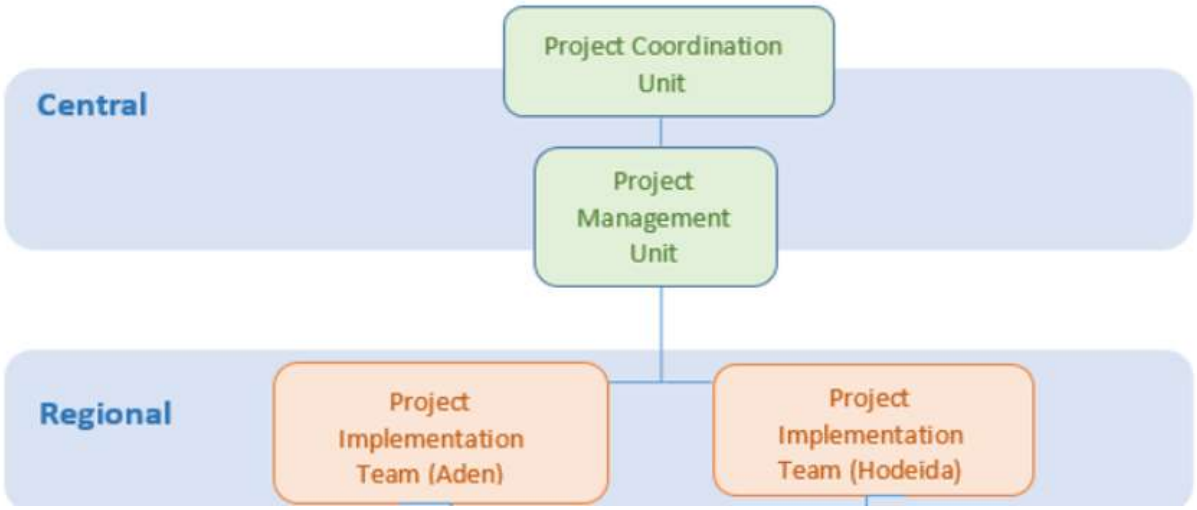
In this context, field staff will be responsible for monitoring the progress, as relevant, in the monitoring plan, as well as to identify any potential risks that may emerge throughout the implementation phase. This information will be compiled in progress reports and templates will include a section on E&S risk management, where the above information will be adequately reported upon.

Information from progress reports will be received by the environmental and social safeguards specialist in the project management unit (PMU) who will compile the information received in the progress reports, as well as that related to grievances received from project affected persons to feed in a semi-annual report on Environmental and Social Safeguards Performance to be endorsed by the ESM unit in FAO Headquarters in Rome.

8. SAFEGUARDS IMPLEMENTATION ARRANGEMENTS (SIA)

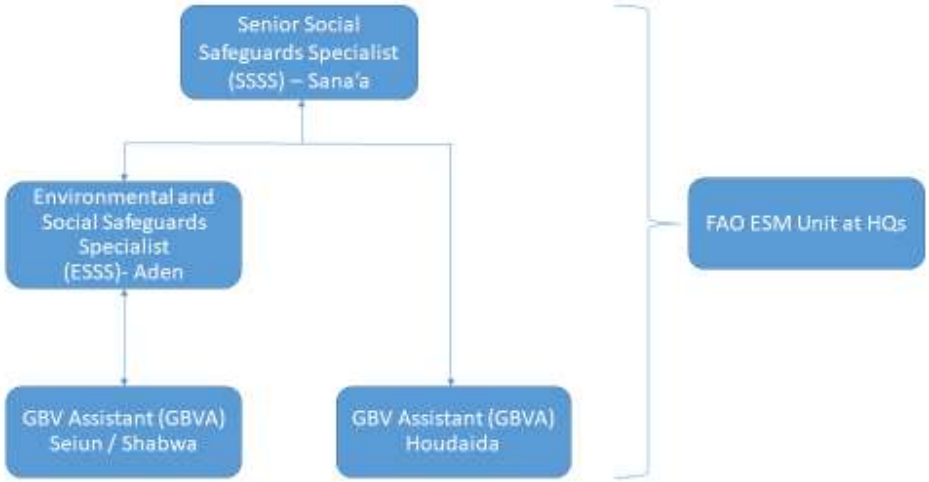
Note : In liaison and collaboration with the World Bank and SFD, FAO will establish a management and implementation structure which is organized in two main territorial levels, namely central and regional, drawing from the set-up created by SAPREP. At the central-level in Sana based hub the project will have a Project Management Unit (PMU), while at the regional level, two Project Teams (PITs) will be established in the FAO sub-office in Aden and Hodeida hub.

Figure 5: FAO-PMU Main Organigram



The implementation of the environmental and social safeguards will be entirely led by FAO safeguards team and will follow the project implementation arrangement seen here above (Figure 6 above) and organized as below:

Figure 6: Organigram of the YDLRP Safeguards & GBV Team Structure



Source: CATS – November 2020

The PMU staff, at central level (Sanaa), will include, a Senior Social Safeguards Specialist (SSSS) based in Sanaa while Environmental and Social Safeguards Specialist (based in Aden) spearheading the entire FAO

program portfolio in Yemen, the duo will be assisted by two GBV Assistants and will oversee the their work in each location.

These 2 teams (SSSS and GBVA in the Norther and ESSS and GBVA in the South will work collaboratively to lead the day-to-day implementation of the safeguards and GBV agenda in each region). As a duo/tandem, they will report to the SSSS Sanaa to review and approve (under the leadership of the YDLRP Manager) their workplan and weekly activities on safeguards compliance and overall project performance on Safeguards and GBV aspects. The full team (SSSS, ESSS, GBVAs) will liaise with the SFD safeguards team to ensure consistency in the safeguards handling on all project activities, including those of Component 2.2 implemented by the SFD. The Safeguards team will guided by the FAO ESM Unit at HQs on the overall (i) safeguards compliance, (ii) sustainable performance, (iii) quality assurance of all safeguards and sustainability performance documents of YDLRP prior to sharing them with the World Bank, (iv) strengthen the technical capacity of and coach the PSGT throughout the project lifecycle.

The safeguard team will also work in tandem with both the National and each of the two Regional Environmental Protection Agencies Officer (NEPAO & REPAO) to ensure full consistency and compliance with applicable national legislations; as well as with the WBG Social and Environmental Safeguards Specialists (SESS) to ensure consistency with WBG and FAO safeguards standards and procedures throughout the project lifecycle.

ESMF Monitoring and Evaluation

Project Monitoring & Evaluation

Currently FAO M&E conducts multiple impact assessment studies for the project they implement: Baseline Surveys, Post-Distribution Assessments, and Impact Assessments, etc. The Baseline Surveys, conducted regularly, will employ a hybrid approach that uses FAO Field Monitors. An Impact Assessment to evaluate the project performance and achievements will be conducted once all data have been analyzed, activities implemented, and results validated by FAO Yemen. As concurred FAO Yemen will submit to the World Bank technical report on the project activities every six months via an agreed upon template will be reporting on quarterly basis.

Sub-Project Monitoring and Evaluation

Monitoring and reporting will be supervised by FAO staff, and whenever needed with the participation of the World Bank project team including safeguards. Participating Governorates, and communities' members through their representatives, should be trained to undertake both compliance monitoring and impact monitoring, as part of their capacity building packages. This will be done throughout the sub-project cycle namely:

- During the planning phase, communities will participate in the identification of indicators for monitoring the mitigating measures;
- During the implementation phase, monitoring the execution of any works with respect to environmental and social aspects (i.e. systematic enforcement of the core pre-requisites prior to handling pesticides),

- During the operation and maintenance phase, the overall environmental monitoring (including monitoring human-natural resources conflict, human and animal health, occupational health and safety issues, etc.) and alerting on any emerging environmental hazards in conjunction with the ongoing sub-project activities. Communities will pass on their observations and concerns through the local FAO Project staffs in Aden and Hodeida who will then report accordingly to the PMU team in Sanaa for consideration.

ESMF Implementation Timeline

As outlined in the ESMF, the day-to-day implementation of the ESMF for the YDLRP in Yemen, will be directly led by the FAO project team particularly the Coordinator, and the safeguards team (SSSS, ESSS, and GBVAs) supported by the FAO ESM Unit at HQs. The foreseen duration of the YDLRP is three (03) years (2020-2023).

The estimated total ESMF budget for safeguards implementation is: $ 675,300; including capacity building and strengthening of SSSS, ESSS, GBVAs and all involved parties in the abovementioned institutional arrangement. The ESMF budget will be limited to the budget allocation under YDLRP PAD and the respective funding agreement.

No	ACTIVITY	INDICATOR	YEAR 1				YEAR 2				YEAR 3			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	CAPACITY BUILDING & Strenghtening													
	Awareness raising Campaign on CHSS													
	Awareness raising Campaign on GBV/SEA/SH													
	E&S SCREENING AND ASSESSMENT													
	1. Identification of sub-activities	List of Sub-Activities												
	2. Environmental and Social screening in sub-activities	E&S Screening Checklists												
	3. E&S Assessment and drafting of additional site-specific safeguards instruments for standard compliance per activity	Pre-implementation documents per sub-activity												
	MONITORING AND REPORTING													
	1. Monitoring and reporting on Safeguards compliance (i.e. safe spray and handling of pesticides) and GBV performance	Progress reports (site-specific ESMP, PMP, RAP, …)												
		Semi-annual Compilation of E&S safeguards performance												
	STAKEHOLDER ENGAGEMENT													
	1.1 Central Level Characterization and Consultation Process Planning													

	1.2 Governorate level Consultations													
	1.3 Local Level Consultations													
	1.3.1 Consultations with Disadvantage Groups (including IDPs & Refugees)													
	1.3.2. Consultations with women and Youth													
	1.4 Consultation with MAI & EPA + SFD and Other													
	1.5 Validation of Information													

Source: CATS – October 2020

9. STAKEHOLDER CONSULTATION, PARTICIPATION, INCLUSION AND ENGAGEMENT

Objective and Stakeholders Identification

The proposed Project is being prepared under the World Bank's Environment and Social Framework (ESF). As per the Environmental and Social Standard 10 (ESS10): Stakeholders Engagement and Information Disclosure, implementing agencies should provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation. A stand-alone Stakeholder Engagement Plan (SEP) has been prepared for the project and include more details.

As stated earlier, from the onset, the formulation, design, and preparation of the YDLRP project is being done in a participatory, consultative, and inclusive fashion. However, given the ongoing near-seven years of civil unrest and political turmoil, as well as the prevalence of COVID-19, many anticipated consultations were only completed virtually. The team managed to exchange with a handful of key stakeholders prior to finalizing the ESMF (see Annexes 1-A, 1-B & 1-C).

Overall, this comprehensive engagement stream was deemed to be crucial in order to both grasp the best of the ongoing ideas and literature; and thereafter develop a solid project that fosters "ownership" from the get-go, so to create more "social accountability" which ultimately will lay out the ground or foundation for a "sustainable development" endeavour that would likely be of direct and tangible benefit to the recipient rural communities, especially the most vulnerable ones to desert locus swarms and the climate change challenges, such as women, youth, elderly, landless and disables persons.

Stakeholders were originally established during preliminary discussions between the Ministry of Agriculture and Irrigation (MAI), the SDF and both FAO and the World Bank, during the drafting of the concept note and preparation of the project. These discussions helped to identify the ministries, departments and managing agencies likely to be involved. During subsequent field visits links were further

established with civil society/farmers organizations (CSO/FOs and community-based organizations (CBOs) working in the project area in desert locust affected areas, and mutually affected by climate change issues.

Public Consultation and participation meetings with farmers, youth, women (including female farmers) and ethnic minorities living and working in the project areas were held to better understand the respective populations' specific and different needs, priorities and key concerns regarding the plight of the desert locust swarms, depending on gender and/or social status; but also preferred method(s) of grievance redress. Participants were told about potential positive and negative impacts (individuals and/or cumulative) of the project, and whilst all confirmed their unconditional support for and interest in the project (i.e. which is timely as the hoper bands begin to develop, especially in rural areas.), iterative discussions will be further confirmed at village level once the project has been approved, and thereafter, throughout the project lifespan. This approach has been taken and adopted so to avoid losing trust and engagement of the recipient communities.

Because stakeholders' inclusive consultation, participation and engagement is an iterative process, these streams of consultation and participation will be upheld and continuously exercised throughout the lifespan of the project. Each of these consultations will be duly recorded and appropriately filed as part of YDLRP documentation for consistency and transparency purpose, and easily accessible to the broader public.

Stakeholders' Consultation, Participation and Engagement (SCPE)

During Project Formulation Phase – As stated above, from the onset of YDLRP's formulation phase, an inclusive consultation and participation process has been put in place with the very sole purpose of encouraging more stakeholders' engagement by (i) fostering "ownership", that is expected to lead to more (ii) "social accountability", which altogether are ground to more (iii) "sustainability". Current sustainable development literature, beyond its three (03) internationally recognized principles (social, environment and economic), stipulates that, in a nutshell, the sustainability of each sustainable development operation is undoubtedly founded on these two key pillars: Ownership and Social Accountability. The 'rule of thumb" goes as follows: *The earliest stakeholders are associated in the design, preparation and implementation of a development investment, the more engaged/obliged they feel and are, and the greater the project outcomes will/might be*. While stakeholders' consultation, participation and/or engagement is an iterative process and is exercisable throughout the project lifespan; the earliest it is started, the greater the expected outcomes; and therefore, the more successful the project becomes.

In short, and thus far, stakeholders' consultation and participation has enabled an exchange of invaluable information about the YDLRP and other projects alike (i.e. past and/or ongoing, in the project area or its surroundings) with all identified stakeholders, who, throughout the process, were able to freely express their points of view, expectations, concerns, and suggestions. More details of the public consultation and participation once the interviews are completed.

Public Dissemination/Disclosure

Public dissemination of relevant information on the project, particularly safeguards related instruments, simplifies the effective participation of all stakeholders. Necessary project related information will be publicly disclosed by FAO and the Government of Yemen in due course, ensuring it is accessible, appropriate and considerate/respectful of local beneficiaries' cultures. Particular attention should also be

paid to the needs of specific community groups that may be directly or indirectly affected by project's implementation (i.e. poverty level, literacy, gender, language).

For projects with substantial risks rating such as YDLRP, FAO and the WB, publishes relevant project information as early as possible, and at the very latest 30 days prior to project approval. The 30-day period only begins when all requested pertinent project information documents have been prepared, approved, and made available to the broader public, particularly those directly impacted by the foreseen project activities.

As stated above, the World Bank and FAO are compelled to comply with its social and environmental safeguards standards and policies core requirements by publicly disclosing all relevant project documents/safeguards instruments[47], on its website (i.e. www.fao.org/environmental-social-standards/disclosure-portal/en/) but also in-country/Yemen, at least 30 days prior to project appraisal.

The project environmental and social safeguards tools such as ESMP's, will be translated into local language and physical copies will be available at local FAO, SFD branches or MAI offices.

[47] According to whichever applies e.g. environmental and social analyses, environmental and social impacts assessments, environmental and social management frameworks, and other relevant documentation, etc.

10. GRIEVANCE REDRESS MECHANISM – GRM

Complaints Management Procedure - CMP

FAO is committed to ensuring that its programs are implemented in accordance with its environmental and social obligations. In order to better achieve these goals, and to ensure that beneficiaries of FAO programs have access to an effective and timely mechanism to address their concerns about non-compliance with these obligations, the Organization, in order to supplement measures for receiving, reviewing and acting as appropriate on these concerns at the program management level, has entrusted the Office of the Inspector-General (OIG) with the mandate to independently review the complaints that cannot be resolved at that level.

FAO will facilitate the resolution of concerns of beneficiaries of FAO programs regarding alleged or potential violations of FAO's social and environmental commitments. For this purpose, concerns may be communicated in accordance with the eligibility criteria of the Guidelines for Compliance Reviews Following Complaints Related to the Organization's Environmental and Social Standards[48], which applies to all FAO programs and projects (Guidelines for Compliance Reviews Following Complaints Related to the Organization's Environmental and Social Standards).

Concerns must be addressed at the closest appropriate level, i.e. at the programme management/technical level, and if necessary, at the Regional Office level. If a concern or grievance cannot be resolved through consultations and measures at the project management level, a complaint requesting a Compliance Review may be filed with the Office of the Inspector-General (OIG) in accordance with the Guidelines. Program and project managers will have the responsibility to address concerns brought to the attention of the focal point.

Project-level grievance mechanism

The project will establish a grievance mechanism at field level to file complaints. Contact information and information on the process to file a complaint will be disclosed in all meetings, workshops and other related events throughout the life of the project. In addition, it is expected that awareness raising material be distributed to include the necessary information regarding the contacts and the process for filing grievances.

The Project Management Unit (PMU), particularly the environmental and social safeguards and GBV specialists will be responsible for addressing incoming grievances regarding environmental and social standards; as part of the safeguards performance monitoring, the Project Coordinator of the YDLRP will be responsible for documenting and reporting on any grievances received and how they were addressed.

The following steps will be taken upon receipt of the complaint:

1. Receipt of a feedback/complaint and its registry in the system, capturing details of the caller and the nature of the feedback;

2. Sharing complaint in a generated report template to the respective staff members for addressing, based on the classification of the complaint;

[48] Available online at: http://www.fao.org/3/a-i4439e.pdf

3. Resolution – within 5 working days. In case, the issue cannot be solved by the closest appropriate level, the complaint will be sent further, as described in the "Resolution" section below;

4. Inform the complainant not later than 7 seven working days after receiving the case;

5. Closure of the complaint.

FAO has its already established GRM, a communication mechanism to build trust and confidence with local communities by promoting a culture of transparency and accountability. The steps to apply the GRM from PAP perspective will be as follows:

- During the awareness sessions and sensitizing activities conducted to PAP about the project (objectives, activities, services, criteria, and other aspects), focus will be given to the GRM and the different channels by which beneficiaries can reach FAO GRM or other mechanisms of relevant stakeholders including local authorities. The awareness will also include the distribution of FAO leaflets that include details and instructions about FAO GRM.
- When PAP provides complaints or feedback, FAO GRM assigned staff will be receiving the complaints and feedback according to a specific Standard Operating Procedure (SOP). It includes steps for logging the complaints, analyzing and categorizing, referring and following up, resolving, and communicating the PAP with feedback.

PAP will have different channels to reach FAO GRM or other relevant stakeholders' mechanisms, including phone calls and face-to-face discussions during field visits or project partners, allowing illiterate PAP to deliver their complaints or feedback. During field visits, FAO and its partners will provide verbal messages about the GRM for illiterate PAP and ensure they understand how to reach out if they have any complaints or feedback. The role of the community committees will be utilized - when applicable – to deliver feedback from FAO and its partners to illiterate PAP.

Local authorities will be engaged in the GRM and have important roles in sensitizing the communities about the mechanisms in place to receive complaints and feedback, as well as to respond and address received complaints through the available channels with authorities. Letters of Agreements (LoAs) with the Ministry of Agriculture and Irrigation (MAI) will include some parts highlighting the importance of activating MAI's complaints channels to receive any complaints from the field. The role of other local authorities such as local councils, district managers, SCMCHA representatives in DFA areas' districts, and other relevant authorities will be involved and can receive complaints from PAP and refer them to MAI or FAO to be addressed. In addition, FAO team will also provide capacity building to MAI's extension service staff, who will be in direct contact with PAP and increase their awareness about the GRM.

FAO will ensure responding and resolving complaints at a field level as needed through the available channels and mechanisms. The role of authorities and their mechanisms will be utilized to enhance timeliness and effectiveness of the response to PAP complaints and feedback. In close consultation and coordination with FAO project team and relevant authorities, field units and staff from MAI will address complaints that can be resolved locally. MAI's operation units will share their regular reports to FAO, which will include actions to address any received complaints, which FAO GRM staff will also log in FAO GRM.

SFD has a robust system for GRM, we have a team around 14 persons who are dedicated to GRM in HQ and all branches. The system enable receiving anonymous complaints and the system has many channels of reporting complaints as below:

- Project site boxes
- SMS
- Hotline
- Face to face
- Emails
- Social media
- Fax
- P.O box
- Online complaint- https://chm.sfd-yemen.org/ar/

Grievance Redress Mechanism Structure:

The complainant files a complaint through one of the channels of the grievance mechanism, which will be set up (email address, telephone number(s), contact person or physical address) before project implementation. This will be sent to the PMU, where the Social and Environmental Safeguards specialists, who also acts as the GRM Focal Person, will assess whether or not the complaint is eligible. The confidentiality of the complaint must be ensured throughout the process.

Eligible complaints will be addressed by the PMU Safeguards Specialist together with the Project Coordinator of the PMU. The Project Coordinator will be responsible for recording the grievance and how it has been addressed if a resolution was agreed upon. If the situation is exceptionally complex, or the complainer does not accept the resolution, the complaint must be escalated to a higher level (FAO Yemen Representation), until a solution or acceptance is reached.

If the situation is still not resolved, the grievance will be escalated to the FAO Regional Office for Near East and North Africa. If the situation is still not resolved, the grievance will be escalated to the FAO Office of the Inspector-General.

For every complaint received, written proof of receipt will be sent within seven (7) working days; afterwards, a resolution proposal will be made within ten (10) working days. In compliance with the resolution, the person in charge of dealing with the complaint may interact with the complainant, or may call for interviews and meetings, to better understand the situation. All complaints received, their responses and resolutions, must be duly registered and recorded.

Internal processes

1. Project Management Unit. The complaint can directly contact the PMU either in writing, or orally. At this level, received complaints will be registered, investigated and solved by the PMU.

2. FAO Representative. The assistance of the FAO Representative is requested if a resolution was not reached and agreed upon in level 1.

3. FAO Regional Office for Near East and North Africa. If necessary, the FAO Representative will request the advice of the Regional Office to resolve a grievance or will transfer the resolution of the grievance entirely to the regional office, if the problem is highly-complex.

4. Only on very-specific situations or complex problems, the FAO Regional Representative will request the assistance on the FAO Inspector General who pursues its own procedures to resolve the problem.

Resolution

Upon acceptance a solution by the complainer, a document with the agreement should be signed, clearly indicating the terms of the resolution.

Table 13: GRM handling timeframe

Level of Redress Mechanism	**Details**
PMU	Must respond within 7 working days. Contact details to be established before project implementation.
FAO Representation	In consultation with PMU, must respond within 5 working days. E-mail: FAO-YE@fao.org Tel: +967 1 432681/2 or 432683 direct Fax: +967 1 432686
Regional FAO Office for Near East and North Africa	Must respond within 5 working days in consultation with FAO's Representation. E-mail: FAO-RNE@fao.org Tel: (202) 3331 6000 to 3331 600Fax: (202) 3749 5981, (202) 3337 3419
Office of the Inspector General (OIG)	To report possible fraud and bad behavior by fax, confidential: (+39) 06 570 55550 By e-mail: Investigations-hotline@fao.org By confidential hotline: (+ 39) 06 570 52333

Source: FAO website.

Confidentiality

FAO maintains confidentiality at all times and any beneficiary wishing to make a formal complaint about FAO's programme and/or ways of working is able to do so in an accessible way. Staff treats complaints with respect by listening, accepting and recording. This matter is reflected in numerous materials that guide the FAO GRM, such as:

- "*Rest assured that the Organization makes sure that your personal information is* ***confidential*** *and will never be shared with anyone other than employees concerned."* (GRM leaflet);
- *"Ensure* ***confidentiality*** *of all complaints and shall not share complaints with others."* (Code of Conduct for the operator in charge of recording complaints, FAO GRM Standard Operating procedures);

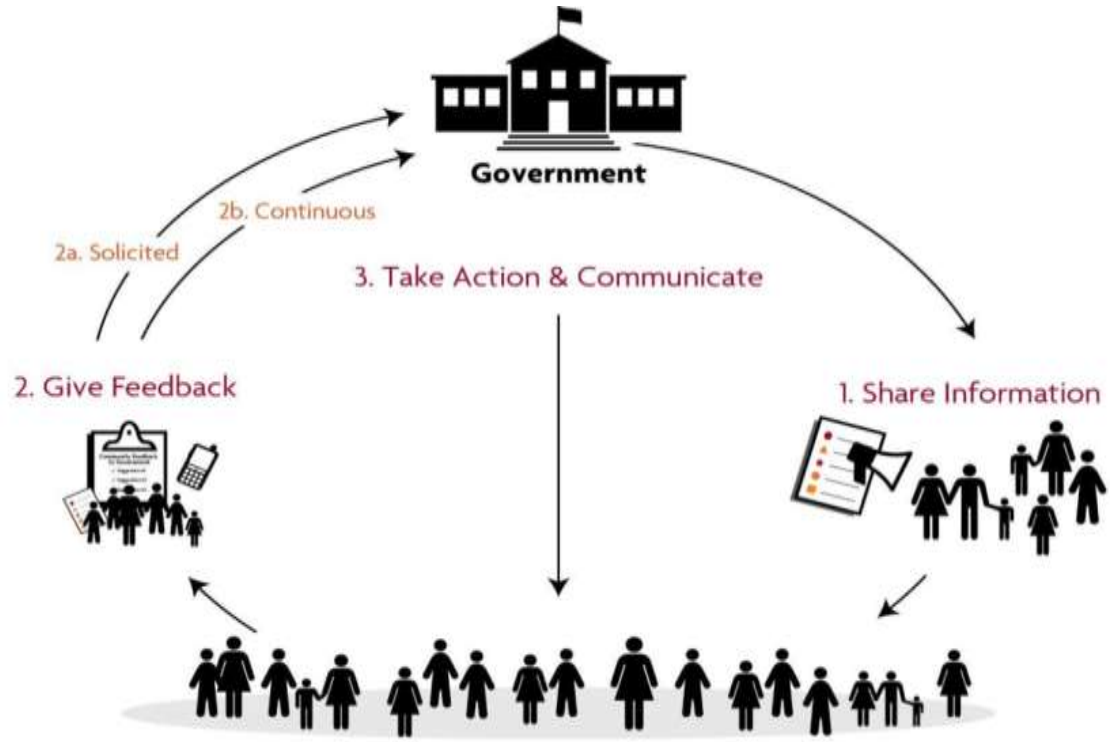
- *"In the case of sexual exploitation and abuse (SEA) complaints, **confidentiality** and safety measures regarding the complainant should be in place. Therefore, upon receipt of the complaint, sharing of this sensitive information should be on a need to know basis, i.e. only those strictly necessary for the process of SEA complaints handling should be involved."* (FAO GRM Standard Operating procedures);
- *"FAO values all received feedbacks and ensures **confidentiality**."* (Auto-reply from FAO Yemen GRM dedicated email address).

Disclosure of the names is possible only with the consent of the complainant and only to the respective staff members, and only if it is needed to help to resolve the issue. Such a consent will be collected while recording the complaint in the system. FAO GRM accepts also anonymous grievances, especially if the nature of the complaint is critical. Prior proceeding with resolution, the validity of the complaint will be verified and then communicated to respective staff or Units for follow up and resolution.

Closing the Book and Fostering Sustainability

While grievances are inevitable in sustainable development operations, and they are meant to weight the checks and balances as to how well the project is doing in terms of making beneficiaries lives "better-off"; however, one core lessons to be learnt is to always avoid triggering such grievances. Though there is never a better way to avoiding such triggering; inclusive and systematic stakeholder consultation not only at the very early stages of project formulation, and thereafter throughout the project lifespan, has always proven to avoid or minimize their occurrence. Therefore, one common sense is to always keep in mind that the earliest inclusive and participatory stakeholder consultation is started earliest enough in a project life cycle, the better beneficiaries ownership such project activities (i.e. feeling part and partial of the whole process), and foster social accountability behaviour towards that very project. Experience has shown that triggering these two pillars (i.e. Community Ownership & Social Accountability) often leads to fostering project Sustainability.

Figure 7: Building Trust - The Feedback Loop



Source : CATS.Building Trust, The Feedback Loop, World Bank Safeguards Training Workshop in Bangkok, 1/18-20/2016

SFD have their own Complaints Handling Mechanism (CHM) as part of an ongoing move to improve its accountability for managing, responding to and monitoring complaints within its Programs.

The accumulated experience in SFD to respond and interact with all partners and beneficiaries enables it to improve and adopt an efficient CHM, focusing on institutionalizing the experience in dealing with complaints and mainstream it in the system context including MIS.

The following are the most significant objectives of SFD CHM:

- Improve accountability to SFD partners and beneficiaries.
- Increase the level of beneficiaries' satisfaction with the delivery of services and enhance the beneficiaries /SFD relationship.
- Provide an efficient, fair and accessible mechanisms for resolving beneficiaries'/partners complaints.
- Guide SFD staff in handling complaints.
- Allow to rectify mistakes, alert to problems, and help to continuously learn and improve.

SFD have assigned GRM focal persons in their branches to report to the CHM department in HQ. They used different ways of communication for their grievance access points such as brochures, project signboard, printed in CFW cards, grievance boxes in sub-projects sites. All complaints received collected and registered in their CHM system. And SFD reported to FAO quarterly of the complaints received classified by type, status and action taken.

11. CONCLUSION

The main development objective of the Yemen Desert Locus Response Project (hereafter the Project or YDLRP) is to control the desert locust outbreak, support livelihoods in locust-affected areas and strengthen Yemen's preparedness for future locust infestations. Its expected outcome is to foster a (i) much stringent response mechanism to the locust infestation outbreak that encompasses improved locust surveillance, monitoring, and control activities; (ii) livelihood support focuses on protection and restoration in the locust-affected areas; and, a (iii) strengthened national preparedness systems that includes three main elements, namely (a) establishing a network of DLCCs, (b) establishing an early response system, and (c) connecting Yemeni systems with regional networks to exchange information and data and improve coordination of the locust response.

It's been developed by the Government of Yemen with the view to effectively tackle the looming desert locusts swarms plight that is seriously threatening the sylvo-agricultural productivity and livelihood resources of millions of Yemeni. The Project is been funded by the World Bank and technically supported and implemented by the FAO for a duration of three years.

Although this project is expected to have greater environmental benefits than adverse environmental impacts, nonetheless, some potential environmental risks and impacts might be caused by the implementation of some interventions under some components. Specifically, activities which will be financed under Component 1.2 "Improving control measures" which will support, inter alia, the procurement and application of pesticides and biopesticides. The preliminary screening of the proposed YDLRP activities revealed that its foreseen Environmental and Social Risk Rating is rather "Substantial" largely due to increase usage and spray of pesticides throughout the country, in addition to the difficult FCV context within which the project is going to be implemented during these 3 years.

The main potential environmental risks and impacts are associated with: (i) the procurement, transport, handling, storage of the pesticides, dosage during treatment and disposal of empty pesticide containers; (ii) the risk of polluting ecologically sensitive habitats such as wetlands, national parks, protected areas and water bodies; (iii) risks of contaminating pasture, local water sources and sensitive agronomical areas and (iv) risks of poisoning and contamination of field officers who are directly involved in handling and spraying operations, as well as communities who might be exposed to pesticides.

As stated above, overall, the project cumulative environmental, social and GBV impacts are expected to be positive. In its efforts to improve the participating communities' livelihoods and living conditions so they are better off at the end, the YDLRP equally triggers/carries on some important threats to the sustainability of the Environment (biophysical and human) in the project intervention area (particularly the residual ones). These cumulative impacts could be summarized into two major areas, namely (i) Agricultural pressure on the existing natural resource, and (ii) Transhumance with its downsize effects.

The project has adopted eight of the ten environmental and social safeguards standards, namely ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8 and ESS10 in compliance with the prerequisites set forth in these ESSs; and this at thi very juncture the footprints of the project activities are unknown, the project will prepare an ESMF, RPF and a PMP for compliance with the safeguards standards requirements. Ces instruments include screening tools to identify sub-projects that might have adverse environmental and social impacts, as well as health and safety impacts - that put forth the basic principles and prerogatives the project will follow during project implementation, once the detail footprints of

project activities and sub-activities are clearly known; so to prepare site specific safeguards instruments, such as Environmental and Social Management Plan (ESMP) and/or specific contractors ESMP (C-ESMP), and wherever deemed needed, site-specific PPMPs and/or Resettlement Action Plans (RAPs).

12. ANNEXES

Annex 1: Stakeholders Consultation & Participation: Lists & Feedbacks

Annex 1- A: Summary of Stakeholders Consultation & Participation at Community Level

This section concerns key Beneficiary Communities, including the most vulnerable groups that will be directly or indirectly impacted/affected by the YDLRP operations, both during physical implementation (extensive spray of pesticides) and throughout its lifespan. These include, but not limited to the following: rural households; women, children, especially toddlers, youngsters, disables, elderly people, widows, landless, immigrants, IDPs, etc. and influx as well as visitors/tourists, and farmers associations, women associations, youth association, IDPs associations, etc.

Due to COVID-19 pandemic safety and security concerns, and the confinement restrictions, a handful of these vulnerable stakeholders were interviewed virtually to assess their (i) understanding of the project, and likely environmental, social and health and safety risks and impacts associated, (ii) community-driven and/or informal strategies to cope and mitigate these likely environmental, social community health and safety risks, and (iii) readiness to support the project to be successfully implemented throughout of its lifecycle.

List of Desert Locust Community stakeholders consulted with Telephone interviews

Stakeholders/Actors	Issues Discussed	Stakeholders Viewpoints & concerns about the project	Suggestions & recommendations
Community Water User Association and NGO's	**Assessment on Communities preparedness on pesticides sprays to control the locust plight** 1. Efforts and schemes in place to cope with spraying of pesticide risks & impacts.	In Hadhramout, there are several ways such as communication by local committees as well as local councils with agriculture offices, awareness sessions by the Agriculture Office but this was limited, and conducting insitu plans by spary control agencies for example, previous years ago, swarms of locusts were sprayed in several villages and the following measures were taken: (1) Communicating with families to not take their livestock out. (2) Notify beekeepers of the necessity to keep the bees away from spraying sites. (3) Advice people to stay home during spraying In Abyan, the executive manager of STEPS (NGO) stated that, Rural societies do not have a specific, clear and systematic strategy to avoid the risks resulting from natural disasters such as the locust and other plights. There are some unspecified traditional practices undertaken by the community such as notify others in the surrounding villages about the spraying campaign through destinations, mosque preachers, or means of communication. Communication by local committees as well as local councils with agriculture offices. In Sana'a, the WUA chairman expressed that, as the community members, we still lack to a complete monographic study about	

		locust (atmosphere of locust life, suitable time and place to lay eggs, propagation speed, and ways of controlling the locust plight)!!So it's too difficult to show the efforts and schemes to cope with such risks and impacts!!	
	2. Awareness of the dangers (direct and indirect, short terms and longer term) of pesticides spray on neighbouring communities	It is known that any pesticide must have negative impacts on communities, livestock and natural resources used by societies through: 1. Its impact on communities and individual health, either when eating food by poisoning and other diseases or through the surrounding environment. 2. Its impact on livestock, through the death of some animals when eating some of the plants that were sprayed, as well as the death of many insects such as bees and others. 3. Impacts on natural resources, when these pesticides percolate and pollute some water sources, especially open wells and springs or spread through the air. - Long term effect on the soil. - There is no enough knowledge, but there are inherited concerns among the people, especially spraying pesticides and their dangers to drinking water / eradication of bees / animals. It is a major cause of the spread of diseases such as cancer / inflammation. - Most of the Yemeni people don't have a clear detail about the bad effect of pesticides spray on the environment and agriculture! - In fact, pesticides spray kill locust as well as kill other creatures and leave bad effects for people and nature as short or long term!	Approaching spraying areas is very dangerous; so that beekeepers usually transfer bees to other places not less than 7 km far from the spraying sites.
	3. The effectiveness of the current Government and/or Community's Strategy to effectively, and efficiently, cope with the DL swarms, and the extensive spray of pesticides in Yemen	Government rule can be summarized as follows: - Very weak during current time and if occur it is limited. - All the efforts made by the governments and related agencies are not sufficient to control DL compared to the huge numbers of locust that raided the crops last season. - There is no any government strategy or plan to cope with the DL swarms, and the extensive spray of pesticides in our country. The Community strategy can be summarized by the following: - Acceptance of spray interventions, especially when Locusts is widely spread. - The community is doing some traditional control such as (tracking eggs and burning them – burning tires and plastic waste ... etc). - The community strategy could be in:	

		1. Appealing the relevant authorities and international organizations. 2. Transferring bees to other places far from spraying areas. 3. Awareness of the dangers of spraying in populated places. 4. Using traditional masks.	
	1. Best traditional and agronomical practices used by community to control desert locust swarm	- Control of locusts when it is in early stages called locally (Dabba) or Nymph. - Stirring up mated locusts and removing them from agricultural and wetlands so that they will not laying eggs, and this is less effective than the first point. - Tracing the young locusts called locally (Dabba) or Nymph in the breeding areas, especially in agricultural areas, and collecting them in special pits to burn them. - Some farmers placing special nets on the most important crops, according to the financial and technical ability of the farmer. - The most important traditional and agricultural practices that our society followed to combat desert locust swarms are: 1- Smoking (collecting piles of straw and lighting them on fire, then extinguishing them for the purpose of smoking). 2- Attempt to change the direction before it reaches the crops, using primitive means. - One of the most traditional ways among society in Yemen is to collect desert locust swarm in big bags at dawn time when they're cold and can't move, then put them into firing ovens at homes to have them ready to eat.	
	2- Training on the safe and secure usage, storage, and disposal of pesticide containers, etc. And the availabity of proper storage facilities.	No training has been conducted on the safe and secure use and storage of pesticide containers and cans. There are no suitable storage facilities according to the specifications approved by government agencies and recognized safety standards. If found, it is stored in public places.	
	3- Availability of a solid and liquid waste management experience and plan, specifically pesticide containers disposal	- There is no plan to manage the waste to be buried or burned in public places for garbage, if any. - This is done by following of the instructions written on the pesticide cans to dispose it after its expiration date or after use.	
	4- Availabilty of clear procedure and practices in the safe and secure disposal of	- There are some inherited experiences, and some simple practices, for example: 1- destroy pesticides by placing them in deep holes that would prevent its smell 2- Transport of pesticides to places outside the village and burning them	

	expired or leftover pesticides	in places of garbage, if any, and often in small quantities such as pesticides and agricultural pests. 3- Sometimes it is reported to the authorities to deal with it and / or persons with experience in this field by some agricultural extension workers and experienced people from the region.	
	Assessment on Community Outreach efforts 1. Community-driven awareness raising efforts made on the plight of desert locust control	- Some awareness programs to desmiss the importance of locust control. - Health awareness: such as warning about sprayed locusts, especially in the areas where they have been eaten. - Initiative practices like: (burning tires around farms - using primitive tools). - There are no community awareness efforts, but all are self-directed efforts by some farmers themselves.	
	2. Awareness raising efforts made by community leaders/members on the safe use and application of pesticides on locust control in their individual farms	- There's not any awareness raising effort made by community leaders on the safe use and application of pesticides on locust control in their individual farms - There is no locust control using pesticides specifically for farms. - In the event that there is a control from certain parties, safety measures are alerted. - Some societies in locusts spread areas receive short training courses for some groups by some humanitarian organizations such as the FAO, the Social Fund for Development, local associations and institutions, especially (beekeepers and farmers). - Educating beekeepers and recommending them, before spraying, not to approach the areas where pesticides may be sprayed ... or to transport bees to other places not less than 7 km from the spray site.	- The government should pay attention with organizations that are interested in making appropriate solutions that eliminate this insect scourge with the least damage to society that results from combating this pest.
	3. Awareness raising efforts made towards the communities on the (i) existence of the environmental and social management instruments (ESMF, RPF, PMP, LMP, SEP, etc.)	- They do not exist, and if they exist, they are limited like safety tools, only. - There are no tools for environmental and social management in our societies only some individual efforts to raise awareness of the importance of having environmental tools for health and safety. - The use of such tools is very weak due to their high prices and unavailability in the markets. - No updated data for local employment / job/ gender ... etc. - There is no plan to involve the community in decision-making and participate in national campaigns.	
	4- Ongoing and foreseen communication means in Yemen,	- Telephone communications and social media. - Radio programs. - Field visits:	- On the following days, there will be communication means in Yemen, at regional or district/county levels in terms of

			locust surveillance and control especially in locust spreading areas as well. - It is assumed that there is an early warning in areas where locusts are constantly spreading.
	Stakeholders environmental, social and CHS concerns of this project	- Environmental pollution. - Damages on the agricultural crops. - Community unacceptance for the project. - Increase the proportion of spending among farmers and beekeepers. - The spread of diseases among children and women. - High prices of oil derivatives. - Lack of confidence to provide pesticides with good specification and safety. - Lack of training and rehabilitation for rural and desert communities. - Desertification risks. - Weak of monitoring by the related authorities. - This project has more risks than positive achievements if we control it imprecisely at the governmental and community level. - Desert locust swarm is flying insects that may result bad damage on the farms temporarily, but spray pesticide may effect humanity and environment badly for a long time.	

Annex 1-B: Summary of Stakeholders Consultation & Participation Institutional Level

This section concerns key Government agencies that will be directly or indirectly involved in the sustainable management of the YDLRP operations, part or throughout its lifespan; namely: MAI Ministry of Water, Ministry of Social Welfare, Ministry of Family and Protection, The National Environmental Agency, Ministry of Environment and Natural Resources, Ministry of Education, Ministry of Health, as well as Governors, Mayors, and respective technical teams.

Due to COVID-19 pandemic safety and security concerns, and the confinement restrictions, a handful of these were interviewed virtually to assess their (i) understanding of the project, and likely risks involved, (ii) strategies to cope and mitigate these likely environmental and social risks, and (iii) readiness to support the project to be successfully implemented.

List Institutional stakeholders consulted with Telephone interviews

Stakeholders/Actors	Issues Discussed	Stakeholders Viewpoints & concerns about the project	Suggestions & recommendations
Institutional EPA and PPD	**Assessment on Government**	- First: before the spraying process is carried out in any of the desert locust breeding areas, a quick survey is made about the spraying area within a circle of 5	

	& Communities preparedness on pesticides sprays to control the locust plight 1- Efforts and schemes in place to cope with spraying of pesticide risks & impacts.	km in diameter and the rapid assessment of the activities of the population groups in the area, especially the presence bees, livestock, poultry, etc., and then take precautionary measures that limit sprinkling damage to public health, the environment, livestock, or community agricultural activities. - Second: To seek assistance from local councils and social leaders or members in the area to prepare the owners of the apiaries and cooperate in moving the beehives to safe places far from the locust breeding areas until the completion of the spraying campaign.	
	2- Evaluation and discussion on the nature of proposed pesticides for locust control: Malathion 50% EC, Malathion 95% ULV, and Chlorpyrifos 24% ULV in terms of toxicity and efficacy referring to the national regulation and registry; FAO; the WHO and others.	- Indeed, the nature of the aforementioned pesticides is evaluated and discussed in the meetings of the pesticide registration committee and the committee responsible for updating the lists of pesticides for the Republic of Yemen through scientific references and international agreements, in addition to the evaluation of the effectiveness of pesticides for controlling Desert Locust (ULV) in the pesticide analysis laboratories periodically and before conducting Spraying process. - Malathion 50% is a pesticide capable of being well concentrated and effective in uninhabited desert areas, Malathion 95% is acceptable and chlorpyrifos 24% is well used in agricultural areas.	
	3- Safer alternatives currently being or foreseen to be explored (i.e. much lesser toxicity but high efficacy for locust control) instead to minimise such likely cumulative impacts	- During the two years 2019 and 2020, in which the desert locust breeding flushes occurred and the breeding areas expanded, we had to search for alternatives, including the use of some agricultural insecticides that are safer than locust pesticides (ulv), Especially when the locust nymphs have reached the farmers' fields, and these pesticides do not cause great damage to the crop and vegetation as do the micro-scale locust pesticides. - Also, mechanical control methods have been followed by making trenches by using large plows around the fields to protect against the encroachment of the locust nymphs. When the holes are full of nymphs, they are buried, and this process potentially decrease the locusts density in the first stages of the nymphs. - Tracing the locusts in the different breeding areas (winter and summer). - Special treatment of soil with possible presence of locust eggs and young locusts called locally (Dabba) or Nymph in the breeding areas, especially in populated agricultural areas.	

		- Conduct special treatments for the soil with the probable presence of locust eggs and eliminate eggs by turning the soil and deal with them through topical pesticides so that they are safer. - There are less toxic natural pesticides that have been tested by the brothers in the General Authority for Agricultural Research, Sayon branch that can benefit from it.	
Level of Government Agencies preparedness to cope with the cumulative risks and impacts of the plight	- Actual measures (preventive & post) being carried out not to pollute the natural habitats in general and non-targeted species in particular during pesticide spraying activities	- The practical measures are as mentioned above, namely, before the spraying process is carried out in any area, the survey team makes a quick survey about the spraying area from all sides to find out the presence of beehives, livestock or others, and then the concerned authorities are used to transfer the beehives to safe areas, or transferring the bees to other places not less than 7 km from the spraying site. - Group and individual meetings with farmers and beekeepers. - The need to communicate with bee owners to keep their bees away from the sprayed areas	
Assessment on existing institutional and capacity building efforts	1- existing National level institutional and capacity building efforts arrangements on Desert Locust swarms control project /program	- First, the official correspondences by the Ministry of Agriculture and Irrigation to the governors of the governorates, the security authorities, and the directors of the agriculture offices to facilitate the tasks of the locust control teams in the governorates and districts and cooperate with them to activate the community work through the help of a number of the people of the region and training them on the foundations of control and precautionary measures and collecting information on agricultural and development activities and the presence of a staff in the Agriculture Office in Abyan Governorate called (Department of Plant Protection) has moderate experiences and the presence of village clusters (village councils) that have contacted with the agricultural extension offices and the Plant Protection Office.	
	2- The institutional arrangement, both at central and regional levels on the effective and efficient management of the Environmental, Social and Health and safety organs	- Preparations start from the locust control and control centre by submitting them to reports that specify the size of the next problem about the desert locust movement regionally and locally and through what arrived to the information specialist, as well as preparing a general plan and discussing it with the Director General and submitting it to the Ministry's leadership for discussion and approval, and then raising the supporting entities of the project. - A trained staff in the field of agricultural extension and locust control capable of training and dealing with different types of pesticides.	

		- There are no environmental agencies specialized in controlling locusts, and the support of organizations is relied upon, and if there is institutional support, it is limited	
	3- Availablity of Environmental and Social Safeguards Specialists	- Of course, there are specialists in environmental protection, and the Ministry of Agriculture and Plant Protection, have a close link between these bodies, including the General Authority for Environmental Protection and the Consumer Protection Association, but it has not happened yet to open the issue of locust control with them or involve them in this field. - There are some institutional bodies such as civil society organizations and associations. The agricultural office in Abyan has some qualified cadres with a moderate qualification only. The Agriculture Office has an administrative staff that has some experiences that have been practiced through short and medium training courses and there are some social specialists working individually / voluntarily, perhaps, but with a very small number and may need training and capacity building.	
Assessment of technical support and communication with international organizations engaged on locust control	1- Technical support and communication means with FAO in terms of locust surveillance and control	- The truth is that the technical and material support from the Food and Agriculture Organization in the fight against the desert locust is eternal and has an ancient history, although during the past two years, specifically from the end of 2019, the focus of the support was only in the organization's coverage of the costs of surveying and controlling the technical teams in the field, but it must be mentioned that it began in weeks. The last few days and after the last meeting of the visiting delegation to Yemen, in which a technical action plan was drawn up and includes technical support represented in the provision of equipment, supplies, spraying mechanisms, pesticides, and training for technical teams.	
	2- Coordination efforts with inter-agencies and countries in the region engaged in Desert Locust Control Programs, in terms of information sharing	- This area is almost inactive, especially in light of the aggression and blockade on Yemen and the closure of airports and ports, as far as we know is limited.	

Annex 1-C:

List of Desert Locust Technical professionals and Community members consulted with Telephone interviews

List of desert locust technical professionals and Communities members consulted with Telephone interviews		
No.	Title	Location
1	Director of the Desert Locust Center	Sana'a
2	Locust officer	Sana'a
3	Agri. office, Locust Tech.	Mareb
4	Locust Tech.	Mareb
5	Director of Plant Protection	Hajjah
6	Agri. Office, Locust Tech.	Al Mahra
7	Tech. control- Al-Hodeidah	Al-Hodeidad
8	Deputy Director of plant protection	Hadhramout
9	Director of the Wadi Agriculture Office	Hadhramout
10	Locust Officer	Aden
11	Field Locust Officer	Aden
12	Gen. Director of plant protection	Aden
13	GD of Environment Protection Agency	Hadhramout
14	Head of Extension Office	Abyan
15	GD of Plant Protection Directorate – Sana'a	Sana'a
16	Head of WUA- Hadhramout	Hadhramout
17	Executive Manager of Steps - Abyan	Abyan
18	Head of WUA - Lahj	Lahj
19	Head of WUA - Bani Mater/Sanaá	Sana'a

Annex 2: Grievance Redress Mechanism (GRM)

Under the new World Bank ESSs, Bank-supported projects are required to facilitate mechanisms that address concerns and grievances that arise in connection with a project49. One of the key objectives of ESS 10 (Stakeholder Engagement and Information Disclosure) is "to provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow borrowers to respond and manage such grievances"50. This Project GRM should facilitate the Project to respond to concerns and grievances of the project-affected parties related to the environmental and social performance of the project.

FAO has established Grievance Redress Mechanism (GRM) for all projects to enable beneficiaries to communicate their concerns regarding the project activities.

FAO is providing multiple access points to the FAO GRM focal point for beneficiaries to voice and raise their concerns. These access points include GRM contact information including hotline & landline toll-free, mobile SMS, WhatsApp, website, email and offline form; as follow:

Toll-free telephone number	800 19 19 (Only for Yemen mobile and landline phone customers)
SMS	2222
Messengers	WhatsApp: 776 01 30 30
Website	www.fao.org
Email	Yemen-Feedback@fao.org
Interviews	During field visits, FAO Field Monitors and Technical Specialists, in case of a complaint, will fill in a report and share with the Toll-Free Phone Operator at the FAO Representation level for actions. Similar template and mechanism will be applied if a person approaches any offices of FAO to file a complaint.

Accordingly, FAO has established grievance access database to register, follow-up and take action on the complaints. In addition, an offline form was designed to record the field complaints or offline grievances. FAO also has a person in charge of the call centre.

Grievances can be brought up by affected people in case of: (i) beneficiary and community selection; (ii) assistance quantities and qualities; (iii) corruption or theft; (iv) staff abuse, etc.

Procedures in handling feedback and complaints

The Beneficiary Feedback Mechanism (BFM) details the procedures that communities and individuals, who believe they are adversely affected by the project or a specific sub-project, can use to submit their complaints, as well as the procedures used by FAO to systematically register, track, investigate and promptly resolve complaints.

The timeframe for managing feedback including giving appropriate response to the complaints raised by beneficiaries will vary based on the nature and magnitude of the reported problem. Response may not be necessary for routine feedback, or in some cases can be given instantly. Feedback will always

[49] Under ESS 2 (Labour and Working Conditions), a grievance mechanism for all direct or contracted workers is prescribed, which will be laid out in a separate Labour Management Plan (LMP). The World Bank's Good Practice Note on 'Addressing Gender Based Violence in Investment Project Financing involving Major Civil Works' spells out requirements for a GBV grievance redress mechanisms, which will be defined in a separate GBV/SEA and Child Protection Risks Action Plan.

[50] World Bank, 2018, p. 131.

be reviewed and continuous efforts to improve program will be undertaken, including reduction or prevention of similar occurrences of negative events.

Receipt of a feedback/complaint and its registry in the system, capturing details of the caller and the nature of the feedback;

Sharing complaint in a generated report template to the respective staff members for addressing, based on the classification of the complaint (please see the below table);

Resolution – within five working days. In case, the issue cannot be solved by the closest appropriate level, the complaint will be sent further, as described in the "Resolution" section below;

Inform the complainant not later than seven working days after receiving the case; and

Closure of the complaint.

Staff Members to Make Decisions:

Categories	Type	Decision-Maker	Timeframe
Category A. Low	Inquiries; Request for assistance; False calls.	Phone Operator	Immediately
Category B. Moderate	Operational (late delivery of inputs and services, cash transfer payments, etc.); Out of beneficiaries list; Out of target area (not included in the project); Distribution of less amount than envisaged; Criteria for selection is unclear or not applied; Quality of items and services provided; Overlapping activities in the given area; Dissatisfaction with FAO activities.	Assistant to FAOR/ Programme; Assistant to FAOR/ Operations; Concerned project CTA or staff in charge; M&E Focal Point.	Review on bi-weekly basis
Category C. Critical	FAO or its IPs staff misconduct; Corruption; Tax imposition on inputs and beneficiary payments by local authorities; Sexual Exploitation and Abuse; Abuse of authority.	FAOR or Deputy FAOR; Assistant to FAOR/ Programme; Assistant to FAOR/ Operations; Others assigned by the FAOR based on the case-sensitivity.	Immediately communicated to the FAOR/ Deputy FAOR for decision-making

In any case, the project-implementing partners must maintain records of grievances and complaints, including minutes of discussions, recommendations and resolutions made. And submit the recorded complaints with their progress reports.

The World Bank's Grievance Redress Service (GRS)

Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 3: Possible Insecticides for Management of Desert Locust

No.	Active ingredient/Trade Name	Formulation type	Chemical Group	Registration Status in Yemen	Countries where registered for locust control
1	Chlorpyrifos	ULV	Organophosphate	Not yet	
2	Deltamethrin	ULV	Synthetic Pyrethroid		
3	Fenitrothion	ULV	Organophosphate		
4	Malathion	ULV	Organophosphate		
5	Metarhizium acridum	WP51	Biological Control Agent		
6	Teflubenzuron	ULV	Insect Growth Regulator		

Note: This is a provisional list as per FAO Pesticides Referee Group report http://www.fao.org/ag/locusts/common/ecg/2241/en/PRG10e.pdf. FAO recommend only ULV formulations of the above listed chemical pesticides, IGRs and to be considered for procurement based on availability of stock from prequalified suppliers.

[51] 50 g of biopesticide+1 l of gasoil can be applied with ULV sprayers to treat 1 ha. This dose rate equals to $2.5x10^{12}$ aerial conidia of *Metarhizium acridum* per hectare.

Annex 4: The list of prohibited and smuggled pesticides in Yemen

Annex 5: FAO Spray Monitoring Form

FAO SPRAY MONITORING FORM

Attach this form to the DL Survey and Control Form and submit both to the National Locust Unit in your country whenever control operations are carried out

(indicate appropriate information as required)

1	CONTROL LOCATION	1		2		3		4		5		6	
1-1	date												
1-2	name *(from DL Survey Form)*												
2	**VEGETATION DATA**												
2-1	vegetation type (Grass, Bushes, Trees, Crop)	G B T C		G B T C		G B T C		G B T C		G B T C		G B T C	
2-2	height (m)												
2-3	crop names and damage (%)												
3	**INSECTICIDE DATA**												
3-1	trade name												
3-2	concentration (g a.i./l or %)												
3-3	formulation (EC, ULV, Dust)	E U D		E U D		E U D		E U D		E U D		E U D	
3-4	expiry date												
3-5	is insecticide mixed with water or solvent?	Y N		Y N		Y N		Y N		Y N		Y N	
3-6	if yes, what solvent and mixing ratio												
4	**WEATHER CONDITIONS**												
	start and end of control operations:	start	end	start	end	start	end	start	end	start	end	start	end
4-1	time												
4-2	temperature (°C)												
4-3	relative humidity (%)												
4-4	wind speed (m/s)												
4-5	wind direction (degrees from N)												
4-6	spray direction (degrees from N)												
5	**SPRAY APPLICATION**												
5-1	sprayer type (Rotary, Airblast, ENS, Hydraulic, Other)	R A E H O		R A E H O		R A E H O		R A E H O		R A E H O		R A E H O	
5-2	sprayer operator (Pilot, Driver, Locust officer, Hired, Other)	P D L H O		P D L H O		P D L H O		P D L H O		P D L H O		P D L H O	
5-3	sprayer manufacturer												
5-4	sprayer model												
5-5	sprayer platform (Aerial, Vehicle, Handheld)	A V H		A V H		A V H		A V H		A V H		A V H	

5-6	date of last calibration						
5-7	atomizer height above ground (m)						
5-8	ROTARY SPRAYERS: speed setting (blade angle, pulley setting, no. batteries)						
5-9	speed of atomizer (rpm)						
5-10	flow rate setting (which nozzle or restrictor used)						
5-11	flow rate/atomizer (l/min)						
5-12	number of atomizers						
5-13	track spacing (m)						
5-14	BARRIERS ONLY: width and spacing (m)						
5-15	forward speed (km/h)						
5-16	AERIAL SPRAYING:	GP = ground party available RC = radio communication with aircraft TG = DGPS track guidance					
	support supplied	GP RC TG	GP RC TG	GP RC TG	GP RC TG	GP RC TG	GP RC TG
5-17	ground marking (GPS, Flag, Mirror, Smoke, Vehicle, None)	G F M S V N	G F M S V N	G F M S V N	G F M S V N	G F M S V N	G F M S V N
6	**CONTROL EFFICACY**						
6-1	locust mortality (% dead)						
6-2	time after treatment (hours)						
6-3	method of mortality estimation (Quadrats, Target size, Visual, Cages, Other)	Q T V C O	Q T V C O	Q T V C O	Q T V C O	Q T V C O	Q T V C O
7	**SAFETY AND ENVIRONMENT**						
7-1	protective clothing:	G = goggles M = mask L = gloves O = overalls B = boots					
	what did the operator wear?	G M L O B	G M L O B	G M L O B	G M L O B	G M L O B	G M L O B
7-2	was soap and water available?	Y N	Y N	Y N	Y N	Y N	Y N
7-3	who was informed of spraying? (Farmer, Nomad, Villager, Official, Beekeeper)	F N V O B	F N V O B	F N V O B	F N V O B	F N V O B	F N V O B
7-4	effect on non-target organisms	Y N	Y N	Y N	Y N	Y N	Y N
7-5	if yes, what						
7-6	details of anyone who felt unwell or if other problems were encountered:						

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Annex 6: FAO Check List for General Monitoring of Desert Locust Control Operations

FAO CHECK LIST FOR GENERAL MONITORING OF DESERT LOCUST CONTROL OPERATIONS

Fill out this checklist for each monitoring excercise; use field notebook or specific forms for more detailed descriptions

1	DATE & LOCATION OF MONITORING EXCERCISE					
1-1	date:	1-2	location (name; latitude/longitude):			
2	INSECTICIDE DATA (of product involved in monitoring)					
2-1	trade name:		2-2	common name:		
2-3	concentration (g a.i./l or %):		2-4	formulation type:		
3	SPRAY MONITORING					
3-1	spray monitoring form filled in (tick one box; if yes, write reference to relevant form/page number): ☐ yes ☐ no			form/page reference:		
3-2	same area sprayed for locust control before		☐ no, not recently	☐ yes, this campaign	☐ yes, last year	
4	EFFICACY MONITORING					
4-1	efficacy monitoring carried out:		☐ yes	☐ no		
4-2	mortality/survival how assessed:		☐ visual estimates	☐ cages	☐ pre- and post-spray counts	
4-3	*provide details on methodology, replicates, results, etc. in field notebook*				notebook page reference:	
5	OCCUPATIONAL POISONING INCIDENTS					
5-1	case(s) of occupational poisoning observed:			☐ yes	☐ no	
5-2	occupational poisoning incident form filled in (tick one box; if yes, write reference to relevant form/page number): ☐ yes ☐ no			form/page reference:		
6	RISK ASSESSMENT FOR GENERAL POPULATION					
6-1	human habitations nearby (within 5 km of spray site, air strip or camp):			☐ yes	☐ no	
6-2	name(s) of nearest human habitations and distance(s) to spray sites; were they informed about control operations:		habitation 1	habitation 2	habitation 3	
	name:					
	distance (km):					
	informed about spraying:		☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	
6-3	open drinking water sources nearby (e.g. wells, rivers, within 2 km of spray site):				☐ yes	☐ no
6-4	buffer zones applied:	i - between human habitations and spray site:		☐ yes ☐ no	buffer distance used (m):	
		ii - between water sources and spray site:		☐ yes ☐ no	buffer distance used (m):	
6-5	populations informed about re-entry interval into sprayed sites:			☐ yes	☐ no	
6-6	any crops sprayed: ☐ yes ☐ no		if yes, specify which crops:			
			if yes, farmers informed about pre-harvest interval:		☐ yes	☐ no
7	ENVIRONMENTAL RISK ASSESSMENT					
7-1	ecologically sensitive areas nearby (< 2 km of spray site) (e.g. protected areas, biocontrol sites):				☐ yes	☐ no
	if yes, specify what type of areas:					
	if yes, buffer zones applied between such areas and spray site:			☐ yes ☐ no	buffer distance used (m):	
7-2	aquatic ecosystems nearby (e.g rivers, lakes, ponds)			☐ yes ☐ no		
	if yes, buffer zones applied between aqautic ecosystems and spray site:			☐ yes ☐ no	buffer distance used (m):	
7-3	beekeeping areas nearby (within 5 km of spray site)			☐ yes ☐ no		
	if yes, what measures taken to reduce risk of bee kills:					
7-4	any grazing land sprayed: ☐ yes ☐ no		if yes, herders informed about livestock witholding period:		☐ yes	☐ no
7-5	mortality or abnormal behaviour observed after treatment, in:		if yes, which groups (also note details of observations, e.g. mortality, behavioural changes, etc.):			
	i - terrestrial non-target arthropods:	☐ yes ☐ no				
	ii - mammals:	☐ yes ☐ no				
	iii - birds:	☐ yes ☐ no				
	iv - fish:	☐ yes ☐ no				
	v - aquatic arthropods:	☐ yes ☐ no				
7-6	experiments or more detailed observations carried out		☐ yes	☐ no		
	if yes, which ones (describe):					
	provide details on methodology, results, etc. in field notebook				notebook page reference:	
8	RESIDUE SAMPLING					
8-1	residue samples taken (tick one box; if yes, write reference to relevant form/page number):				☐ yes	☐ no
	if yes, provide details on type, number, methodology, etc. in field notebook				notebook page reference:	
9	REPORTING					
9-1	name of person who filled out this form:					

Annex 7: FAO Poisoning Incident Form (Locust control)

FAO POISONING INCIDENT FORM (Locust control)

Fill out this form for each (suspected) poisoning incident, and send it to the National Locust Unit in your country

1	**DATE & LOCATION OF POISONING INCIDENT**			
1-1	date of the incident:			
1-2	location of the incident (name; latitute/longitude):			
1-3	reference to Spray Monitoring Form (if relevant; page number):			
2	**INSECTICIDE DATA (of product involved in poisoning case)**			
2-1	trade name:	2-2	common name:	
2-3	concentration (g a.i./l or %):	2-4	formulation type:	
2-5	batch number:	2-6	production and/or expiry date:	
2-7	solvent and mixing ratio (if relevant):			
3	**PERSONAL DETAILS (of suspected poisoned person)**			
3-1	name:			
3-2	sex: ☐ male ☐ female	3-3	age (years):	
3-4	staff position (e.g. applicator, flag man, driver):			
4	**INCIDENT DETAILS**			
4-1	activity while exposed to insecticide (e.g. spraying, filling aircraft hopper, etc):			
4-2	personal protective equipment used (tick one or more boxes): ☐ boots ☐ hat ☐ apron ☐ coveralls ☐ face shield / goggles ☐ respirator ☐ gloves ☐ dust mask ☐ other (specify):			
4-3	way of exposure (tick one or more boxes): ☐ on skin ☐ by ingestion ☐ by inhalation			
4-4	estimate of quantity of exposure (e.g. spray cloud droplets, coveralls entirely drenched, drank 1-litre bottle, etc.):			
4-5	duration of exposure (hours until decontamination / treatment):			
4-6	other persons also exposed to insecticide:	☐ yes	☐ no	
4-7	other relevant details about the incident (describe):			
5	**SIGNS AND SYMPTOMS**			
5-1	observed signs and symptoms of poisoning (tick one or more boxes): ☐ skin irritation / rashes ☐ tingling or numbness of face or hands ☐ abdominal pain (stomach, belly) ☐ sweating ☐ headache ☐ nausea, vomiting ☐ tearing of eye(s) ☐ confusion, disorientation, incoordination ☐ diarrhea ☐ double vision ☐ muscle twitching, tremor ☐ respiratory failure, coma ☐ contraction of pupils ☐ runny nose ☐ seizures, convulsions ☐ salivation ☐ abnormal breathing ☐ death			
5-2	first onset of symptoms (hours or days after last exposure):			
5-3	cholinesterase measurement carried out:	☐ yes	☐ no	
5-4	type of cholinesterase measurement carried out (tick one box):	☐ plasma	☐ red blood cells	☐ whole blood
6	**TREATMENT**			
6-1	treatment given:	☐ yes	☐ no	
6-2	type of treatment or antidote given (provide details):			
6-3	person taken to hospital or medical post:	☐ yes	☐ no	
6-4	period that person will be taken off insecticide application (days):			
7	**REPORTING**			
7-1	name of person who filled out this form:			
7-2	staff category (tick one box): ☐ medical ☐ paramedical ☐ non medical (specify)			

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Annex 8: FAO Validation (Spot-VGT) Form

FAO VALIDATION (SPOT-VGT) FORM

page ___ of ___

please send to FAO HQ by fax (+39-06-5705 3271) or email (ecis@fao.org)

(circle appropriate information as required)

1	SURVEY STOP	1	2	3	4	5	6
1-1	date						
1-2	name						
1-3	latitude (N)						
1-4	longitude (O or E)						
2	VEGETATION						
2-1	area of survey (ha)						
2-2	habitat (wadi, plains, dunes, crops)						
2-3	grass layer (status) (greening, green, drying, dry)	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D
2-4	grass layer (density) (0-20%, 20-40%, 40-60%, 60-80%, 80-100%)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
2-5	Principal species of grass						
2-6	shrub/tree layer (status) (greening, green, drying, dry)	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D	Gng G Dng D
2-7	shrub/tree layer (density) (0-20%, 20-40%, 40-60%, 60-80%, 80-100%)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
2-8	Principal species of shrub/tree						
3	RAIN						
3-1	date of last rain						
3-2	rain amount (mm or LOW MODERATE HIGH)	L M H	L M H	L M H	L M H	L M H	L M H
4	SOIL						
4-1	type of soil						
4-2	soil moisture (wet/dry)	W D	W D	W D	W D	W D	W D
5	COMMENTS						

Was a GPS used to determine locations? yes no

country:_____

Annex 9: Desert Locust Standard Survey/Control Form

Desert Locust Standard Survey/Control Form

Country:
Date:

1	Survey Stop	1	2	3
1.1	Location name			
1.2	Time			
1.3	Latitude (DD MM SSS)			
1.4	Longitude (DD MM SSS /W, E)			
1.5	Surveyed area (ha)			
1.6	Locust (Present or Absent)			
1.7	4 GPS corner points of area to be treated 1 → 2 4 → 3	1: 2: 3: 4:	1: 2: 3: 4:	1: 2: 3: 4:
1.8	Area to be treated (ha)			

2	Ecology			
	Habitat			
2.1	Topography (Wadi, Plain, Plateau, Hills, Dunes, Interdunes, Crops, Pasture, Oasis, Reg, Salt flat, Depression, Well, Beach, Town)			
2.2	Soil type (Sand, Silt, Clay, Stone, Gravel, Rocks)			
2.3	Soil moisture (Dry or Wet)			
2.4	Wet soil depth (cm) From - To			
	Vegetation			
2.5	State (Greening, Green, Drying, Dry)			
2.6	Density (Low, Medium, Dense)			
2.7	Annual species (list the 3 dominant species)			
2.8	State (Greening, Green, Drying, Dry)			
2.9	Cover (%)			
2.10	Drying (%)			
2.11	Development stage (1,2,3,4,5)			
2.12	Perennial species (list the 3 dominant species)			
2.13	State (Re-greening, Green, Drying, Dry)			
2.14	Cover (%)			
2.15	Drying (%)			
2.16	Greening (%)			
	Weather			
2.17	Date of last rain			
2.18	Approximative quantity (Light, Moderate, Heavy)			
2.19	Quantity (mm)			
2.20	Temperature (°C)			
2.21	Wind coming from (N, NW, NE, W, E, S, SW, SE)			
2.22	Wind speed (m/s)			

3	Locust			
	Hoppers			
3.1	Stage (E-1-2-3-4-5-6-F)			
3.2	Dominant stage (E-1-2-3-4-5-6-F)			
3.3	Appearance (Solitary, *Transiens*, *T.congregans*, *T.dissocians*, Gregarious)			
3.4	Behaviour (Isolated, Scattered, Groups)			
3.5	Colour (Green, Green/Yellow, Green/Black, Yellow/Black, Black)			
3.6	Density (Low, Medium, High)			
3.7	Density minimum, average, maximum (per tuft or m²)			
3.8	Average distance between tufts (m)			
3.9	Activity (Hatching, Marching, Feeding, Roosting, Moulting)			
	Bands			
3.10	Stage (E-1-2-3-4-5-F)			
3.11	Dominant stage (E-1-2-3-4-5-F)			
3.12	Density (Low, Medium, High)			

3.13	Density minimum, average, maximum (per m²)			
3.14	Size minimum, average, maximum (m² or ha)			
3.15	Number of bands			
3.16	Average distance between bands (m)			
3.17	Colour (Black, Yellow/Black, Green)			
3.18	Activity (Hatching, Marching, Feeding, Roosting, Moulting)			
	Adults			
3.19	Stage (Immature, Maturing, Mature)			
3.20	Dominant stage (Immature, Maturing, Mature)			
3.21	Colour (Gray, Brown, Yellow Wings, Pink, Yellow)			
3.22	Appearance (Solitary, *Transiens*, T/*congregans*, T/*dissocians*, Gregarious)			
3.23	Behaviour (Isolated, Scattered, Groups)			
3.24	Breeding (Copulating, Laying)			
3.25	Density (Low, Medium, High)			
3.26	Number (per transect)			
3.27	Length (m) and width (m) of transect			
	Swarms			
3.28	Stage (Immature, Maturing, Mature)			
3.29	Dominant stage (Immature, Maturing, Mature)			
3.30	Colour (Pink, Yellow)			
3.31	Breeding (Copulating, Laying)			
3.32	Activity (Settled, Takeoff, Milling, Flying)			
3.33	Density minimum and maximum (per m²)			
3.34	Density (Low, Medium, High)			
3.35	Size (ha, km²))			
3.36	Flying from (N, NW, NE, W, E, S, SW, SE)			
3.37	Flying to (N, NW, NE, W, E, S, SW, SE)			
3.38	Flying height (Low, Medium, High)			
3.39	Flying duration (h and min)			
3.40	Cohesion (Weak, Medium, Strong)			
3.41	Shape (Cumuliform, Stratiform)			
4	**Control**			
4.1	Application type (Full cover, Barrier)			
4.2	Area treated (ha) and area protected (ha)			
4.3	Pesticide name			
4.4	Formulation (EC, ULV)			
4.5	Concentration (g a.i./L or %)			
4.6	Application rate (L/ha or g/ha)			
4.7	Quantity used (L or G)			
4.8	Method (Handheld, Backpack, Vehicle, Air)			
4.9	Treatment duration (h and min)			
4.10	Mortality rate (%)			
4.11	Time after treatment (hours)			
4.12	Phytotoxicity (Present, Absent)			
4.13	Zootoxicity (Present, Absent)			
5	**Safety**			
5.1	Protective clothing used: Goggles, Mask, Overalls, Boots (L, M, C, B, G)			
5.2	Intoxication (Yes, No)			
5.3	Cholinesterase rate monitoring (Yes, No)			
5.4	Crop damage (%)			
5.5	Pasture damage (%)			

6	**Comments**

Annex 10: Code of Conduct (CoC) – Minimum requirements (CHSSAP)

The code of conduct must address the following key aspects:
• Respect for local resident and customs.
• Non-Discrimination (*i.e. on the basis of family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, and/or political, religious and sexual conviction*)
• Compliance with applicable national laws, rules, and regulations of the jurisdiction
• Zero tolerance of bribery and/or corruption
• Zero tolerance of illegal activities by construction and plant personnel, including prostitution, illegal sale or purchase of alcohol, sale, purchase or consumption of drugs, illegal gambling or fighting
• Zero tolerance policy of drunkenness and a no alcohol and drugs policy during working time (*plant and construction personnel*) or at times that will affect the ability to work, within accommodation camps, or acquired from outside the camp while accommodated in the camp
• A program for drug and alcohol abuse prevention and random testing that is equivalent in scope and objectives to the policies prescribed in the code of conduct
• Zero tolerance of sexual harassment (*for example to prohibit use of language or behavior, particular towards, women, under-age girls or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate*)
• Compliance with applicable health and safety requirements (*i.e. including wearing prescribed personal protective equipment (EPI), preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment*)
• Zero tolerance of violence or exploitation (i.*e. the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, bullying, degrading or exploitative behavior*)
• Protection of children (*including prohibitions against abuse, defilement, or otherwise unacceptable behavior with children, limiting interactions with children, under-age girls, and ensuring their safety in project areas*).
• Zero tolerance for sexual relations with anyone under the age of 18, except if married prior to employment
• Sanitation requirements such as workers using specified sanitary facilities provided by their employer and not in open areas
• Avoidance of conflicts of interest (*i.e. such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection*)
• Respecting reasonable work ethics and instructions (*including environmental, social, OHS and GBV norms*)
• Protection and proper use of property (*i.e. to prohibit theft, carelessness or waste, etc.*)
• Duty to systematically report any violations of this Code of Conduct
• Non- retaliation against workers who report violations of the Code, if that report is made in good faith.

The Code of Conduct should be written in plain language and signed by each worker to indicate that they have:
• received a copy of the code: (i) had the code explained to them; (ii) acknowledged that adherence to this Code of Conduct is a condition of employment
• understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities

The Code of Conduct should include a description of disciplinary measures for infringement of the code and company rules. If workers are found to be in contravention of the code of conduct, which they signed at the commencement of their contract, workers will face proportionate disciplinary procedures. Zero tolerance indicates immediate dismissal.

Annex 11: Guideline for ESMP Preparation and Contents of ESMP

1. Guideline for ESMP Preparation

The ESMP should be formulated in such a way that it is easy to use. References within the plan should be clearly and readily identifiable. Also, the main text of the ESMP needs to be kept as clear and concise as possible, with detailed information relegated to annexes. The ESMP should identify linkages to other relevant plans relating to the project, such as plans dealing with resettlement or indigenous peoples issues. The following aspects should typically be addressed within ESMPs.

i. Summary of the potential impacts of the proposed project: The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized. Cross-referencing to the ESIA report or other documentation is recommended.

II. Description of the recommended mitigation measures: Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, project design and operating procedures that elaborate on the technical aspects of implementing the various measures.

III. Description of monitoring and auditing program: The monitoring and auditing programs should clearly indicate the linkages between impacts identified in the ESIA report, measurement indicators, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions.

IV. Institutional arrangements: Responsibilities for mitigation and monitoring should be clearly defined, including arrangements for co-ordination between the various actors responsible for mitigation.

V. Capacity Building and Training Programmes: To support timely and effective implementation of the project components and mitigation measures, an assessment and evaluation of the capability of environmental units and other institutions responsible for environmental management is necessary.

VI. Implementation schedule and reporting procedures: The timing, frequency and duration of mitigation measure should be specified in an implementation schedule, showing links with overall project implementation. Procedures to provide information on the progress and results of mitigation and monitoring measures should also be clearly specified.

VII. Cost estimates and sources of funds and allocation of responsibilities: These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs, and factored into loan negotiations, etc.

Template for Environmental and social Management Plan ESMP Preparation

Subproject activities	Potential Environmental and Social Impacts	Proposed Mitigation Measure(s) (Incl. legislation & regulations)	Responsible Institutions (Incl. enforcement & coordination)	When to implement? (Schedule for implementation of mitigation measures	Cost Estimates	Comments (e.g. secondary impacts)

Subproject activities	Potential Environmental and Social Impacts	Proposed Mitigation Measure(s) (Incl. legislation & regulations)	Responsible Institutions (Incl. enforcement & coordination)	When to implement? (Schedule for implementation of mitigation measures	Cost Estimates	Comments (e.g. secondary impacts)

2. Contents of an Environmental and Social Management Plan (ESMP)

This is an action-oriented part of ESIA. The effective implementation of ESIA findings and recommendations hinges largely on the preparation and implementation of appropriate ESMP. It should thus include, at least, the following:

outline of major positive and negative impacts,

description of mitigation/enhancement measures,

schedules of implementation,

cost estimate,

assign responsibility for implementation (by name or position of responsibility)

surveillance and monitoring scheme with defined performance benchmarks and indicators,

contingency plans, impact management strategy and response plans, where necessary

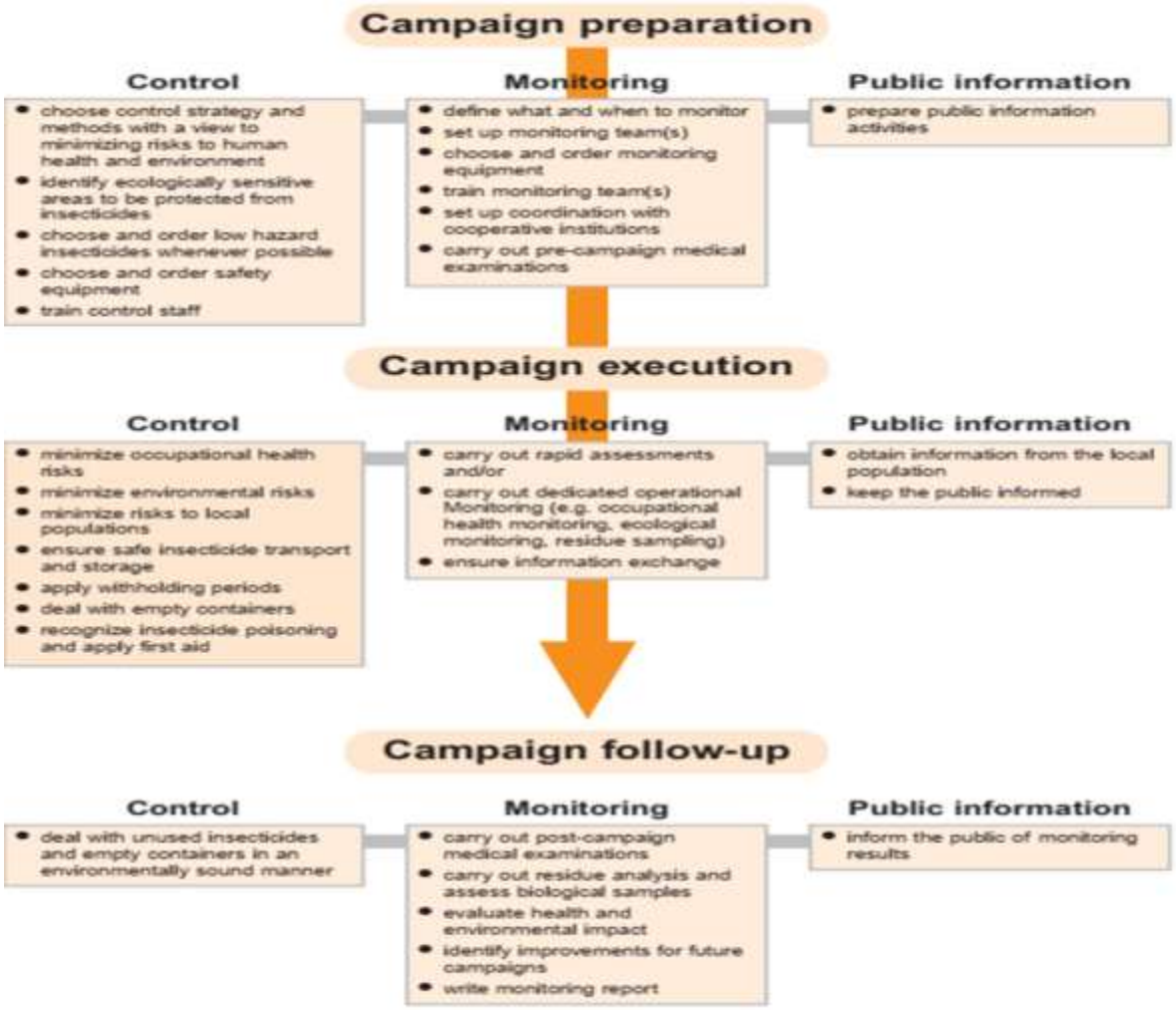
attachment of environmental contract for the implementation of ESMP as the case may be,

any institutional and capacity building requirements,

Briefly present the planned community environmental management project (s) where necessary.

Annex 12: Additional FAO guidance figures for further reference

Figure 1. Element of the risk reduction process during campaign preparation, execution and follow up



Furthermore, insecticides can have a broad impact on many aspects of life and ecosystems. Effects on ambient conditions such as the incremental contribution of pollutant emissions in an air shed, increases in pollutant concentrations in a water body or in the soil, Loss of biodiversity (Death of plant, wildlife, and microorganisms), are possible cumulative risks and impacts of insecticide use. An appropriate approach should be developed to protect human health and the environment from risks associated with pesticide use. This includes protection of pesticide users, consumers, the public, livestock, wildlife, water bodies, etc. A table showing some examples of impact of pesticides and a diagrammatic illustration of risk of locust control insecticides to non-target organisms is provided below.

Some examples of the impact of insecticides on:

• Agriculture	- mortality of natural enemies of pests - insecticide residues in crops - reduced pollination
• Fisheries	- mortality of fish and shrimp
• Animal husbandry	- insecticide residues in meat and milk - reduction of honey and wax production
• Surface and ground water	- pollution, causing (temporary) reduced availability of drinking-water
• Biodiversity	- reduction of important species for medicine, agriculture, fisheries or animal husbandry - reduction of tourism

Figure 2: Indicative risk of locust control insecticides to non-target organisms

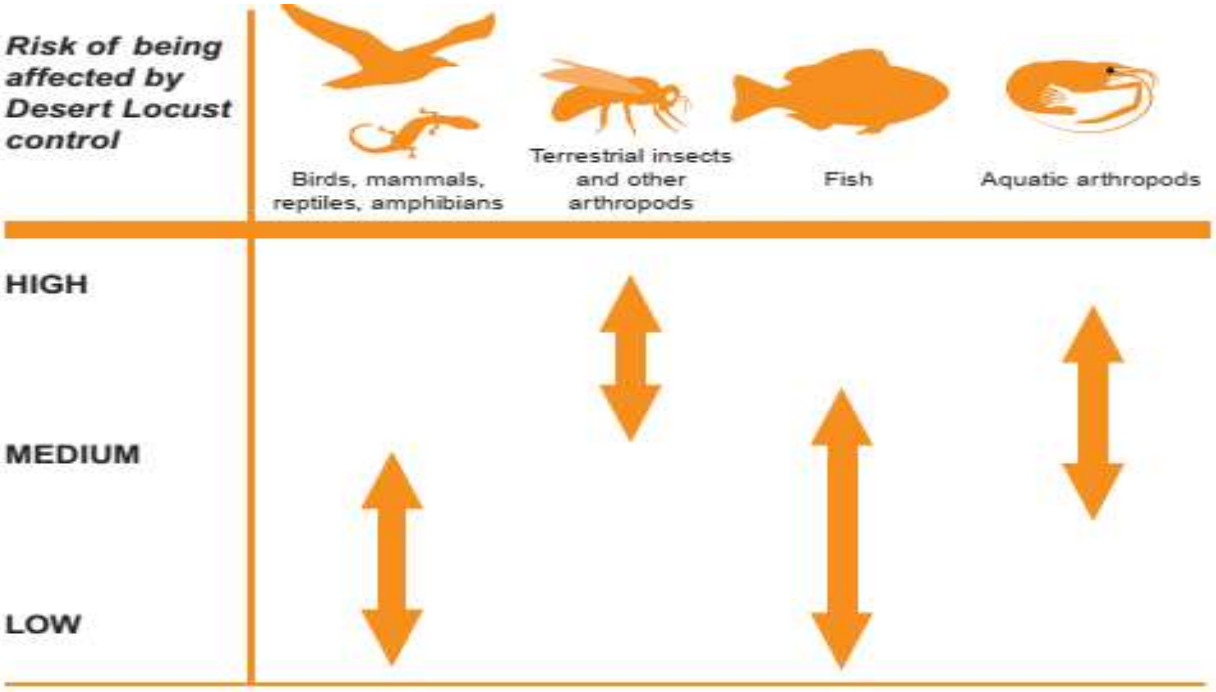
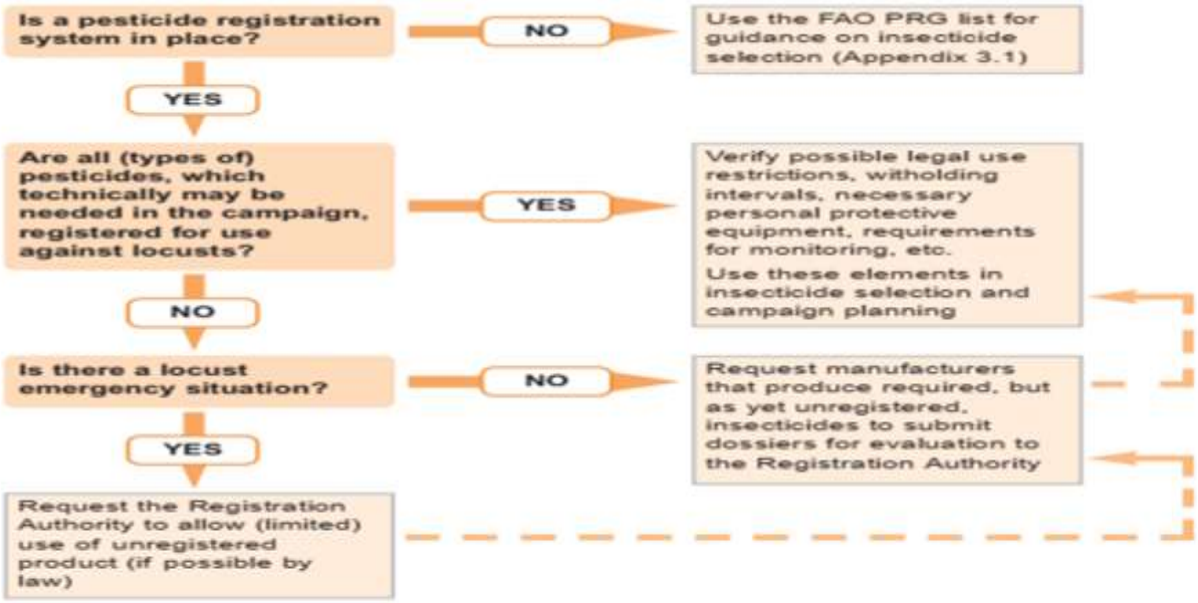
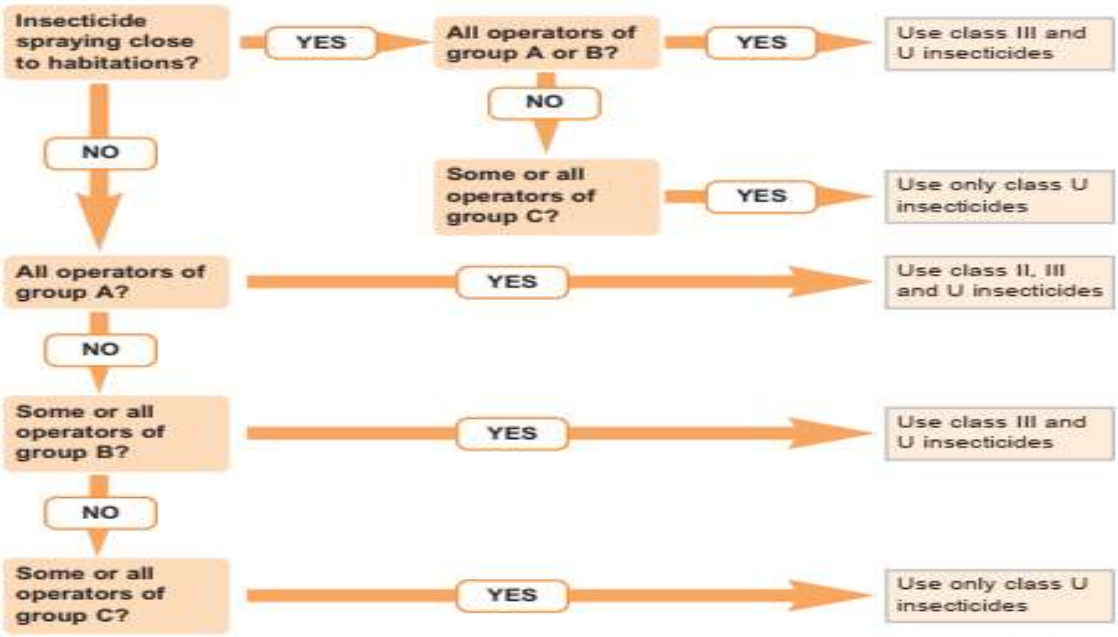


Figure 3. Decision scheme to check whether actions are needed for the registration of products in your campaign



Tip: because pesticide registration authorities rarely receive the evaluation reports of the FAO Pesticide Referee Group, the locust unit should transmit a copy to them, so it can be used in the registration process of new insecticides for locust control.

Figure 4 Indicative decision schemes for the selection of locust control insecticides, based on human health criteria.



Note: operator group codes as in table on opposite page

Tip: for insecticides or formulations that are not listed in Appendix 3.2, the WHO hazard classification can be determined using Appendix 3.3.

If the LD50 of the commercial formulation is known, use the table directly. If this is not the case, look up the LD50 of the active ingredient and then calculate the LD50 of the commercial formulation, using the formula provided .

LD50 values of active ingredients are listed in the most recent version of the WHO classification, which can be downloaded from the WHO Web site.

WHO recommended restrictions on the availability and use of pesticides

WHO hazard class		Availability and use restrictions	Operator code [1]
Ia	Extremely hazardous	Only individually licensed operators	--[2]
Ib	Highly hazardous	Well-trained, educated, strictly supervised operators	--[2]
II	Moderately hazardous	Trained and supervised operators who are known to observe precautionary measures strictly prescribed	A
III	Slightly hazardous	Trained operators who observe routine precautionary measures	B
U	Unlikely to pose an acute hazard in normal use	General public, respecting standard general hygienic measures and observing instructions for use given on the label	C

Figure 5. Good standards for packaging, labeling and quality control should be followed when ordering insecticides. (See the FAO Guidelines on tender procedures for the procurement of pesticides, for more information)

Basic international standards for insecticide packaging are provided by the *United Nations Recommendations on the Transport of Dangerous Goods*. More specific ones are provided by the international transport organizations (e.g. International Air Transport Association (IATA) for air transport and the International Maritime Organization (IMO) for maritime transport).

International guidelines on good labelling practice for insecticide containers have been published by FAO

Pesticide specifications for many individual pesticide formulations are available from FAO

Tip: ask the supplier of the insecticide to provide a reasonable amount of extra labels/technical leaflets and material safety data sheets. These can be distributed among the control teams and the medical authorities in the locust control areas. Also, if insecticides have to be repackaged for some reason, the spare labels can be attached to the new containers.

Comparison of environmental and occupational health concerns between aerial and ground control

Aerial treatment	Ground treatment
Environmental concerns	
Increasing risk	***Increasing risk***
● large areas sprayed	● more temporary and inexperienced staff
● higher probability of contaminating sensitive areas	***Reducing risk***
● more uncontrolled drift	● small areas sprayed
Reducing risk	● more precise applications
● well-trained staff	● less uncontrolled drift
Occupational health concerns	
Increasing risk	***Increasing risk***
● large quantities of pesticides handled	● many staff involved
Reducing risk	● more inexperienced staff
● few staff involved	● more opportunities for exposure
● well-trained staff	● less protective equipment
● protective equipment available	***Reducing risk***
● fewer opportunities for exposure	● smaller amounts of pesticides involved

Note that there are often more environmental concerns with aerial treatments but more occupational health concerns for ground control.

Annex 13: Draft Environmental and Social Mitigation Plan for Deseret Locust Control

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
Component 1						
Procurement	Improper selection of pesticides	Environmental	Active ingredient should be listed among those pesticides, for which effective doses against the Desert Locust are verified by the Pesticide Referee Group (PRG). The pesticides to be used for Desert Locust control operations are Ultra-Low volume (ULV) formulation and should be registered in the recipient country (to be checked with the national registration authorities). Comply with FAO guidelines for selecting appropriate pesticides for locust control. The subcomponent will support the procurement of all material and equipment for the ground control operations of the Desert Locust, including: 4-WD pickup vehicles, pesticides and bio-pesticides (in accordance with the FAO Guidelines and the PRG recommendations), vehicle-mounted ULV sprayer equipment, backpack motorized ULV sprayers, Hand-Held ULV sprayers, pesticide pumps.	FAO	Before the start of the first campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			The whole pesticide quantity will be used during the project; as a consequence, there will be no-left over at project completion.			
Importation	Damage during shipment, leakage/spillage	Environmental	. FAO put in its technical specifications the characteristics of the drums it wishes (thick, resistant to chemical substances – following UN code-, sealed corks) as well as the arrangement of the drums, i.e. four drums per wooden pallet (dimensions are specified), the four drums are wrapped together with plastic films to prevent the drums from bumping into each other during transport.	FAO & MAI	Inspection of the drums at the loading and unloading.	Integrated within project activities
DL control operations	Fatigue associated social stress arising from pressure and long working hours for timely delivery of product	Social	Conduct rapid social impact assessment to enable formulation and implementation of livelihood restoration programmes during and following control of the locust	Control Team, MAI & FAO	During locust control campaign	Integrated within project activities
DL control operations	Expose people, aquatic and wildlife to intoxication	Environmental & Occupational Health	The response will take into account the conditions on the ground – for example, control areas with bodies of water will be avoided to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (when hand-held sprayers are used) to 1 500 m (in case of aerial spraying), and wells or water holes in the target area for treatment should always be covered. It is also recommended that beehives be moved away (at least 3 km) from the treated area. Human re-entry periods, livestock withholding periods and pre-harvesting crop intervals are strictly observed during anti-locust campaigns. Negative	Control Team, MAI & FAO	During locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			environmental impacts will be minimized by avoiding blanket spraying and conducting targeted control operations. Moreover, communities in general, and beekeepers in particular, will be alerted and sensitized before/during/post the planned control operations; .			
Transportation / distribution	Spillage and leakages, fumes' and fire. Spills if not cleaned or decanting and replacing Lack of knowledge by pesticides drivers and distributors. Wrong transportation exposing products to human and environment. Insecurity & theft leading to loss of pesticides.	Environmental & Occupational Health	Pesticides should not be transported with any foodstuffs and should be covered and well labelled. Drivers transporting pesticides should be trained on accident prevention and dealing with emergencies such as spillage or fire during transportation. Training of handlers and users (personnel) on safe use and management of pesticides. Further details in link to DL guidelines vol. 6 page 41: http://www.fao.org/ag/locusts/common/ecg/347_en_DLG6e.pdf	Drivers, MAI & FAO	Before and during Pesticides transportation	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			Insurance clause should be integrated in procurement of pesticides and transportation agreement			
	Lack, uncompleted protective gear and absorbent materials	Occupational Health	Provision of personal protective equipment (PPE) to all pesticide handlers and users. Provision of medical diagnosis services for stakeholders to determine their contamination/ toxic levels and examining them for acute or chronic poisoning symptoms when such need arises.	MAI & FAO	During locust control campaign	Integrated within project activities
Storage	Poorly built store, lack of ventilation and floor space leading to containers wrongly stored,		Advocating for proper storage facility in terms of site and design. Further, adherence to the appropriate store management by applying the rule of the thumb i.e. first in first out and	MAI & FAO	Before, during and after locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
	Spillage, corrosive containers. Prolonged storage of products causes caked formulations.		provision of right store equipment and materials to curtail or minimize store accidents, leakages and spillages. Safe storage of the pesticides in the proposed locations and controlled/ documented release of the pesticides. In each store, a bucket with sand, a shovel and resealable bags should be present. In the event of a pesticide spill, put sand on the liquid on the ground to absorb the pesticide, collect this sand and put it in a closed bag + decant the pesticide into an undamaged drum and label this new drum well.			
Handling	Improper use and spray of pesticides. Lack of protective gear. Improper labeling leading to wrong usage, cleaning of sprayers and equipment.	Human Health and Environmental	Handling and spraying will be made only by skilled staff to control locust, and never by farmers. Pesticide handling and spraying will be ensured in the respect of good practices, including respect of spraying parameters, buffer zones, protected areas, etc. Ensuring that all control staff are sufficiently trained to use the selected pesticides with minimum risk.	MAI & FAO	During locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			Refreshing training should be organized for safe use of pesticides; spraying operations and proper calibration of sprayers before the start of the control campaign. Training of all the persons to involved in spraying on safety and the provisions of this PMP. Ensuring that qualitative and sufficient PPE are available and that treatment agent wear them correctly. Ensuring that proper sprayer maintenance is carried out.			
Disposal	Disposal, spillage and left-over pesticide.	Human Health and Environmental	Adherence to FAO Guidelines on safe disposal of pesticide and empty containers. Provide the teams with pesticide drum cleaners and crushers. Designated officers should be deployed and capacitated to monitor and enforce the irregularities by monitoring stores making inspections advising on strict management,	MAI & FAO	During locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			import control and quality control to ensure compliance to protect human health and environment. Training of all the persons to involved in disposal on safety and the provisions of this PMP.			
	Improper disposal of empty containers through burning. Left overs in wrongly disposed containers cause persistence and lasting in soil.	Human Health and Environmental	Safe disposal of the empty (used) drums carrying the pesticides/immediately crushed.	MAI & FAO	During locust control campaign	Integrated within project activities
	Sex abuse from interaction of spray teams and the civilians in the villages	Social	Sensitization of involved government agencies on compliance with environmental and social safeguards with special emphasis to do no harm principle (sexual abuse, gender violence, inclusivity among others).	MAI & FAO	During locust control campaign	Integrated within project activities
	Loss of livelihood due to DL damage	Social	Awareness creation and communication activities to communities where spraying is carried out. Extension material and mass media campaigns will be prepared/ensured so that local populations adopt the required safety measures before, during and after treatments for themselves, their cattle and their crops.	MAI & FAO	During locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			Training on surveillance and monitoring so that farmers and pastoralists can be part of the early warning which at the end will limit the impact of the DL infestations.			
	Low participation of the affected people (top-down interventions) hampering feed backs	Social	Conduct rapid social impact assessment to enable formulation and implementation of livelihood restoration programmes during and following control of the locust.	Local authorities, MAI & FAO	During locust control campaign	Integrated within project activities
	Poisoned of staff / local population during handling and spraying operations either accidentally or during the normal course of their work.	Human Health and Environmental	Provision of medical diagnosis services for stakeholders to determine their contamination/ toxic levels and examining them for acute or chronic poisoning symptoms when such need arises. For field officers, to reduce risks of overexposure to chemical pesticides, all field officers and spray operators will be equipped with appropriate personal protective equipment and pumps to limit handling of chemicals. In addition, all operators will have access to the Materials Safety Data Sheet and relevant materials to contain and absorb accidental spills. Acetylcholinesterase kit will be delivered by the project. The Human Health and Environmental Monitoring Team can monitor the incidence of exposure to chemical	MAI & FAO	Before (baseline ChE level), during and after locust control campaign	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			pesticides (organophosphates) in the blood of the operators (before, during and after the anti-locust campaign) and thus to detect, evaluate and correct if needed, any negative effects (overexposure or poisoning). An assessment of control operations will be ensured by pesticide residue analysis in order to monitor impact of control operations on non-target organisms and to detect, evaluate and correct if needed, any side effects.			
	Exposure to poison through consumption of contaminated food grown in sprayed areas	Human Health and Environmental	Promote awareness to ensure that communities respect the re-entry time for their livestock and withholding periods for their harvests. Avoid spraying near or around water bodies to mitigate risk of contamination of aquatic habitats. Buffer zones should be maintained during spraying, which range from 100 m (ground spraying) to 1 500 m (aerial spraying), and wells or water holes in the target area for treatment should always be covered.	Local authorities, MAI & FAO	During locust control campaign	Integrated within project activities
	Lack of pesticide management	Environmental, Social and Human Health	Close monitoring on pesticide management will be ensured by FAO, together with specific reporting, i.e. monthly updates and end-of-campaign report.	MAI & FAO	During and after locust control campaign	Integrated within project activities
Components 2 & 3						

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
	- Influence the flora cover, cutting trees and working in pastoral areas.	Environmental,	- Avoid disturbing of flora cover and cutting trees near the rehabilitated/constructed structures. - Avoid the works in the pastoral areas and maintain the flora and plant cover.	FAO / SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	- Construction / rehabilitation may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities.	Environmental,	- Use dust control measures onsite, such as water spraying for dust suppression; - Regulate site access; - Cover lorries transporting friable construction materials and spoil; Prohibit open air burning; Maintain machinery and vehicles in good working conditions to minimize emissions; and, - Vehicles and equipment must be maintained regularly to avoid any emissions;	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	- Alteration or damaging natural habitat during construction/rehabilitation	Environmental	- Avoiding damaging natural habitat during constructions or minimize it (proper site selection, use environmentally friendly materials, prepare materials off-site, etc.) - Good practice in design to be observed. - Collect generated solid waste and transport them to locally designated and authorized dump site	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
	contamination may occur from constructions materials, - Run-off surface water obstacles and divert to cause other flooding hazards. - Generation and improper dumping of construction / rehabilitation waste		- Concrete mixing is to be undertaken on a hard surface - All concrete waste is to be collected, recycled if possible, and removed from the site for disposal at an appropriate disposal site.			
	- Soil Disturbance during rehabilitation / construction	Environmental	The soil of the rehabilitated structures shall be removed properly to the inner side or near the site. Then it should be returned later after the completion of rehabilitation or transported to nearby adjacent land.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/ construction Activities	Integrated within project activities
	- Erosion and sedimentation	Environmental	- Soil removed through excavation should be used as back filling or immediately removed from the project to allocated disposal site.	FAO/ SFD / Contractor	Throughout implementation of rehabilitation/	Integrated within project activities

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
			- Construction should be avoided during periods of anticipated rainfall to prevent any soil erosion. On completion of construction, all leftover materials are to be removed from the site and disposed of, appropriately.		construction Activities	
	- Landslide of soil	Environmental	- Maintain technical approach to avoid landslides of soil - Reduce the vertical slope angle to a void sudden collapse of soil mass - Select an appropriate implementation mechanism (labour / machinery) accordance to the risk level identified by the engineer.			
	- Accumulation of debris / sediments in the irrigation canals.	Environmental	- Remove the sediments to the allocated locations - Rebuild / backfill for the canal banks. - Use the fertile clayey sediments for farms to enrich the soil or establish new arable lands.			
	- impacts relating to mistargeting and the lack of transparency and discrimination marginalised groups; and corruption in selection of the project recipients; - Impacts related to conflict eruption and social disputes due to lack of consideration	Social	- The design of the targeted location is part of a holistic approach for protecting all the affected area. - Scope of work should be identified and agreed with the community.	FAO / SFD		

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
	to the different stakeholders' needs and interests and mishandling water owernship, use and property rights - The selecting of agriculture areas for interventions may cause social conflicts between beneficiaries.		- The interventions in areas which may lead to social conflicts will be avoided.			
	- Access to natural resources may be changed, and some beneficiaries could see their access negatively affected (particularly water). This could result in conflict.		Before subproject implementation starts, a beneficiary committee is established which consists of sheiks, Water User Association (WUA), and farmers, women's groups, etc. The role of this committee is to ensure no activities can start unless it's free from any social conflict that could hinder the project implementation. They prepare a consent form among beneficiaries to clarify the land ownership and any potential social conflict, especially with regard to water resources and access to water and land resources.			
	- Conflicts between cash for work working groups due to the laziness of some workers which negatively affect the social relationship.		Choose the working groups based on the social relativeness and geographical convergence. Working with team spirit and helping each other.			

Risks at various stages	Potential Risk	Potential Risk Type	Mitigation Measures	Responsibilities	Timeframe	Cost
	- Complaints		A complaints register will be kept on site and this will feed into the SFD GRM. Details of complaints received will be incorporated into the monthly reports as part of the monitoring process.			
	-					

Annex 14-1: Draft Environmental and Social Screening Checklist for Desert Locust Control

Environmental and Social Screening Checklist

Environmental and Social Screening Form/Checklists to be filled for each breeding area .

Title of the subproject / breeding area	
Type of breeding area (Summer/ Winter)	
Department implementing Desert Locust Control	
Governorate and district where locust breeding area is to be controlled	
Number of villages/settlements/households nearby the breeding area	
Screening Checklist Completed By (Name and Title)	
Screening Checklist Checked and Translated By (Name and Title)	
Date	

1. Brief Description of desert locust breeding area (activities)

2. The Natural Environment

#	Item	Response
(a)	Describe the land formation, topography, vegetation in/adjacent to the subproject area (e.g. is it a low lying land, water logged, rocky, desert, swampy or wetland, etc.)	
(b)	Estimate and indicate whether vegetation might need to be cleared.	
(c)	Are there any environmentally sensitive areas or threatened species that could be adversely affected by the subproject (specify below)?	

#	Item	Yes	No
(i)	Intact natural forests/ protected areas / natural habitat		
(ii)	Riverine forest		
(iii)	Wetlands or water bodies (ponds, lakes, rivers, seasonally inundated [flooded] areas)		
(iv)	If yes, how far are the nearest wetlands (lakes, rivers, seasonally inundated [flooded] areas)?	_____ km	
(v)	Habitats of endangered species for which protection is required under national laws and/or international agreements		
(vi)	Others (describe) (e.g. cultural sites, burial places, biodiversity hotspot areas, etc.)		

#	Item	Yes	No
	Does ecologically sensitive areas nearby the control area (< 2 km of spray site) (e.g. protected areas, biocontrol sites)		
	if yes, specify what type of areas:		
	Does aquatic ecosystems nearby the control area (e.g rivers, lakes, ponds)		
	Does open drinking water sources nearby (e.g. wells, rivers, within 2 km of spray site)		

3. Fauna and Flora

#	Item	Yes	No
	Will subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		
	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		
	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		

4. Destruction/Disruption of Land and Vegetation

#	Item	Yes	No
	Will the subproject lead to unplanned use of the infrastructure being developed?		
	Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?		

	Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?		
	Will the subproject lead to landslides, slumps, slips and other mass movements in road cuts?		
	Will the subproject lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains?		
	Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?		

5. Protected areas

#	Item	Yes	No
	Does subproject area (or components of the project) occur within/adjacent to any protected areas designated by government (national park, national reserve, world heritage site, etc.)		
	If subproject is outside of, but close to, any protected area, is it likely to adversely affect the ecology within the protected area (e.g. interference with the migration routes of mammals or birds)		
	Would this project increase the current impact on the surrounding environment for example by using more water, chemicals or machinery than previously?		
	If yes, how?		

6. Geology and Soils

#	Item	Yes	No
	Based upon visual inspection or available literature, are there areas of possible geologic or soil instability (erosion prone, landslide prone, etc.)? (In protection wall of high cut agriculture land)		
	Based upon visual inspection or available literature, are there areas that have risks of large-scale increase in soil salinity?		

7. Landscape/aesthetics

#	Item	Yes	No
	Is there a possibility that subproject will adversely affect the aesthetic attractiveness of the local landscape?		

8. Historical, archaeological or cultural heritage site

#	Item	Yes	No

	Based on available sources, consultation with local authorities, local knowledge and/or observations, could the subproject alter any historical, archaeological or cultural heritage site or require excavation nearby?		

9. Resettlement and/or Land Acquisition

#	Item	Yes	No
	Will the subproject require land acquisition?		
	If so, will this land acquisition be involuntary?		
	If so, will this involuntary land acquisition lead to relocation or loss of shelter, loss of assets, or access to assets?		
	If so, will this involuntary land acquisition lead to loss of income sources or means of livelihood (whether or not affected persons must move to another location)?		
	If so, will this involuntary land acquisition lead to loss of income sources of vulnerable groups such elderly people, women headed family, etc.)?		
	Will subproject lead to involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on livelihoods of displaced persons?		
	Will the subproject require land donation?		
	Are disproportionate impacts anticipated to vulnerable groups		

10. Tenure

#	Item	Response
(a)	Describe the tenure regime/ ownership in/adjacent to the subproject area	

#	Item	Yes	No
	Will this project permanently or temporarily remove people from their homes or means of production/livelihood or restrict their access to their means of livelihood?		
	Will the project bring about consolidation or adjustment of tenure rights?		
	Does human habitations nearby (within 5 km of spray site, air strip or camp)		

11. Loss of Household Infrastructure

#	Item	Yes	No

	Will subproject result in permanent or temporary loss of household infrastructure (such as granaries, outside toilets and kitchens, etc.)? If these impacts on granaries, outside toilets and kitchens are lost due to acquisition of land and thus ineligible for project financing.		
	Would there be disproportionate impacts to vulnerable groups?		
	Would there be impacts to commercial or communal infrastructure?		
	Will this subproject involve the recruitment of workers including direct, contracted, primary supply, and/or community workers?		
	Will this subproject have potential occupational health and safety impacts on workers, and requires adequate supply of PPE?		

12. Noise pollution during Construction and Operations

#	Item	Yes	No
	Will the operating noise level exceed the allowable (ambient) noise limits?		

13. Solid or Liquid Wastes, including Medical Waste

#	Item	Yes	No
	Will subproject generate large amounts of residual wastes (solid or liquid wastes), including medical waste?		
	If “Yes”, does subproject include a plan for collection/disposal?		

14. Pesticides, Insecticides, Herbicides or any other Poisonous toxic or Hazardous Chemicals

#	Item	Yes	No
	Will the subproject require the use of such chemicals?		
	If, “Yes”, does subproject include a plan for safe handling, use and disposal?		
	Would this project provide seeds or other materials treated with pesticides (in the field and/or in storage?		

15. Plant Genetic Resources for Food and Agriculture

#	Item	Yes	No
	Will this project introduce crops and varieties previously not grown?		
	Will this project provide seeds/planting material for cultivation?		

	Will this project involve the importing or transfer of seeds and or planting material for cultivation or research and development?		
	Will this project supply or use modern biotechnologies or their products in crop production?		

16. Animal Genetic Resources for Food and Agriculture

#	Item	Yes	No
	Will this project introduce non-native or non-locally adapted species, breeds, genotypes or other genetic material to an area or production system, or modify in any way the surrounding habitat or production system used by existing genetic resources?		

17. Water and Soil Contamination

#	Item	Yes	No
	Will subproject require large amounts of raw materials/construction materials?		
	Will subproject generate large amounts of residual wastes, construction material waste or cause soil erosion?		
	Will subproject result in soil or water contamination (e.g. from oil, grease and fuel from equipment)?		
	Will subproject lead to contamination of ground and surface water bodies by herbicides for vegetation control and chemicals for dust control?		
	Will subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?		
	Will subproject lead to the destruction of vegetation and soil in the right-of-way; borrow pits, waste dumps, and equipment yards?		
	Will subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquitoes?		
	Will this project include the development of a large irrigation scheme?		
	Will this project aim at improving an irrigation scheme (without expansion)?		
	Will this project change the water quality and quantity in the project area or areas connected to it?		
	Will this project involve the intensification of production systems that leads to land-use changes (e.g. deforestation), higher nutrient inputs leading to soil or water pollution, changes of water regimes (drainage, irrigation)?		

18. Decent Work

#	Item	Yes	No
	Will this project affect the current or future employment situation of the rural poor, and in particular the labour productivity, employability, labour conditions and rights at work of self-employed rural producers and other rural workers?		
	Will this project have potential impacts on workers' health and safety?		
	Does the subproject located nearby area with security instability?		

19. Gender

#	Item	Yes	No
	Could this project risk overlooking existing gender inequalities in access to productive resources, goods, services, markets, decent employment and decision-making? For example, by not addressing existing discrimination against women and girls, or by not taking into account the different needs of men and women.		

Conclusion of the environmental screening:

Feature of Concern (Questions answered Yes) from the above checklist	**Potential for adverse risk impact**				
	None	**Low**	**Medium**	**High**	**Unknown**

If the responses indicated more than one high risk impacts, a site-specific Pest Management Plan (PMP) for Deseret locust control management will be prepared for each breeding area (summer and winter) under the sub-project. If the responses indicated low to medium risk impacts apply the general mitigation measures in the PMP.

For the site-specific PMP it will be prepared by FAO and submitted for World Bank clearance.

Annex 14-2: Draft Environmental and Social Screening Checklist of Likely Environmental and Social Impacts of Subprojects under component 2 (cash for works interventions) and under component 3 (rehabilitation and construction of desert locust centres)

Title of the subproject	
Type of subproject (activities)	
Department implementing subproject	
Governorate and district where subproject is to be implemented	
Number of villages/settlements/households who will benefit from the subproject	
Estimated cost of subprojects	
Screening Checklist Completed By (Name and Title)	
Screening Checklist Checked and Translated By (Name and Title)	
Date	
Category of subproject assigned by FAO (B or C)	
Name of Approving Authority (if functioning)	

1. Brief Description of Subprojects (activities)

Refer to section 3 above

2. The Natural Environment

#	Item	Response
(a)	Describe the land formation, topography, vegetation in/adjacent to the subproject area (e.g. is it a low lying land, water logged, rocky, swampy or wetland, etc.)	
(b)	Estimate and indicate whether vegetation might need to be cleared.	
(c)	Are there any environmentally sensitive areas or threatened species that could be adversely affected by the subproject (specify below)?	

#	Item	Yes	No
(i)	Intact natural forests		
(ii)	Riverine forest		
(iii)	Wetlands (lakes, rivers, seasonally inundated [flooded] areas)		
(iv)	*If yes, how far are the nearest wetlands (lakes, rivers, seasonally inundated [flooded] areas)?*	_____km	
(v)	Habitats of endangered species for which protection is required under national laws and/or international agreements		

(vi)	Others (describe) (e.g. cultural sites, burial places, etc.)		

3. Fauna and Flora

#	Item	Yes	No
	Will subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		
	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		
	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		

4. Destruction/Disruption of Land and Vegetation

#	Item	Yes	No
	Will the subproject lead to unplanned use of the infrastructure being developed?		
	Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?		
	Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?		
	Will the subproject lead to landslides, slumps, slips and other mass movements in road cuts?		
	Will the subproject lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains?		
	Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?		

5. Livestock/Poultry

#	Item	Yes	No
	Will this project involve restocking of livestock/poultry?		

6. Protected areas

#	Item	Yes	No
	Does subproject area (or components of the project) occur within/adjacent to any protected areas designated by government (national park, national reserve, world heritage site, etc.)		
	If subproject is outside of, but close to, any protected area, is it likely to adversely affect the ecology within the protected area (e.g. interference with the migration routes of mammals or birds)		
	Would this project increase the current impact on the surrounding environment for example by using more water, chemicals or machinery than previously?		
	If yes, how?	n/a	

7. Geology and Soils

#	Item	Yes	No
	Based upon visual inspection or available literature, are there areas of possible geologic or soil instability (erosion prone, landslide prone, etc.)?		

	(In protection wall of high cut agriculture land)		
	Based upon visual inspection or available literature, are there areas that have risks of large-scale increase in soil salinity?		

8. Landscape/aesthetics

#	Item	Yes	No
	Is there a possibility that subproject will adversely affect the aesthetic attractiveness of the local landscape?		

9. Historical, archaeological or cultural heritage site

#	Item	Yes	No
	Based on available sources, consultation with local authorities, local knowledge and/or observations, could the subproject alter any historical, archaeological or cultural heritage site or require excavation nearby?		

10. Resettlement and/or Land Acquisition

#	Item	Yes	No
	Will the subproject require land acquisition?		
	If so, will this land acquisition be involuntary?		
	If so, will this involuntary land acquisition lead to relocation or loss of shelter, loss of assets, or access to assets?		
	If so, will this involuntary land acquisition lead to loss of income sources or means of livelihood (whether or not affected persons must move to another location)?		
	If so, will this involuntary land acquisition lead to loss of income sources of vulnerable groups such elderly people, women headed family, etc.)?		
	Will subproject lead to involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on livelihoods of displaced persons?		

11. Tenure

#	Item	Response
(a)	Describe the tenure regime/ ownership in/adjacent to the subproject area	

#	Item	Yes	No
	Will this project permanently or temporarily remove people from their homes or means of production/livelihood or restrict their access to their means of livelihood?		
	Will the project bring about consolidation or adjustment of tenure rights?		

12. Loss of Household Infrastructure

#	Item	Yes	No
	Will subproject result in permanent or temporary loss of household infrastructure (such as granaries, outside toilets and kitchens, etc.)?		

	If these impacts on granaries, outside toilets and kitchens are lost due to acquisition of land		
	Will the subproject lead to child labor less than 18 or forced labor? *If so, then this subproject will be ineligible for financing*		

13. Noise pollution during Construction and Operations

#	Item	Yes	No
	Will the operating noise level exceed the allowable (ambient) noise limits?		

14. Solid or Liquid Wastes, including Medical Waste

#	Item	Yes	No
	Will subproject generate large amounts of residual wastes (solid or liquid wastes), including medical waste?		
	If "Yes", does subproject include a plan for collection/disposal?		

15. Pesticides, Insecticides, Herbicides or any other Poisonous toxic or Hazardous Chemicals

#	Item	Yes	No
	Will the subproject require the use of such chemicals?		
	If, "Yes", does subproject include a plan for safe handling, use and disposal?		
	Would this project provide seeds or other materials treated with pesticides (in the field and/or in storage?		
	Would this project provide inputs to farmers directly or through voucher schemes?		

16. Plant Genetic Resources for Food and Agriculture

#	Item	Yes	No
	Will this project introduce crops and varieties previously not grown?		
	Will this project provide seeds/planting material for cultivation?		
	Will this project involve the importing or transfer of seeds and or planting material for cultivation or research and development?		
	Will this project supply or use modern biotechnologies or their products in crop production?		

17. Animal Genetic Resources for Food and Agriculture

#	Item	Yes	No
	Will this project introduce non-native or non-locally adapted species, breeds, genotypes or other genetic material to an area or production system, or modify in any way the surrounding habitat or production system used by existing genetic resources?		

18. Water and Soil Contamination

#	Item	Yes	No
	Will subproject require large amounts of raw materials/construction materials?		

	Will subproject generate large amounts of residual wastes, construction material waste or cause soil erosion?		
	Will subproject result in soil or water contamination (e.g. from oil, grease and fuel from equipment)?		
	Will subproject lead to contamination of ground and surface water bodies by herbicides for vegetation control and chemicals for dust control?		
	Will subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?		
	Will subproject lead to the destruction of vegetation and soil in the right-of-way; borrow pits, waste dumps, and equipment yards?		
	Will subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquitoes?		
	Will this project include the development of a large irrigation scheme?		
	Will this project aim at improving an irrigation scheme (without expansion)?		
	Will this project change the water quality and quantity in the project area or areas connected to it?		
	Will this project involve the intensification of production systems that leads to land- use changes (e.g. deforestation), higher nutrient inputs leading to soil or water pollution, changes of water regimes (drainage, irrigation)?		

19. Decent Work

#	Item	Yes	No
	Will this project affect the current or future employment situation of the rural poor, and in particular the labour productivity, employability, labour conditions and rights at work of self-employed rural producers and other rural workers?		
	Will this project have potential impacts on workers' safety?		

20. Gender

#	Item	Yes	No
	Could this project risk overlooking existing gender inequalities in access to productive resources, goods, services, markets, decent employment and decision-making? For example, by not addressing existing discrimination against women and girls, or by not taking into account the different needs of men and women.		

Conclusion of the environmental screening:

Feature of Concern (Questions answered Yes) from the above checklist	**Potential for adverse risk impact**				
	None	**Low**	**Medium**	**High**	**Unknown**

If the responses indicated more than one medium / high risk impacts, a site-specific Environmental and Social Management Plan (ESMP) for sub-projects under components 2 and 3 will be prepared for each sub-project. If the responses indicated low risk impacts provision to contracts, LoA, AAP will be the used safeguards tools.

For the site-specific ESMP it will be prepared by FAO and SFD as a grouping of sub-projects under one activity and submitted for World Bank clearance before the commencement of work in the field.

Annex 15: Bibliography

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