

**Food and Agriculture Organization of the United Nations**

**Republic of Yemen**

**Global Agriculture and Food Security Program (GAFSP)**

**Smallholder Agricultural Production Restoration and Enhancement  
Project (SAPREP) (P162659)**

**Environmental and Social Management Framework (ESMF)**

Sana'a

June 2017

## Table of Contents

	<b>Page</b>
Abbreviations and Acronyms	4
Executive Summary	6
1 Brief Project Description	19
2 Description of Baseline Environmental and Socioeconomic Conditions	22
2.1 Geographical Location	22
2.2 Climate and Meteorology	22
2.3 Biological Flora and Fauna	23
2.4 Socio-Economic Situation	23
3 Legal, Policy and Administrative Framework	27
3.1 Environmental Policy, Strategies & Law of Yemen	27
3.1.1 Pesticides Law	27
3.1.2 Water Law	28
3.1.3 Cooperatives Societies and Unions Law	28
3.1.4 International and Regional Environmental Legislations	29
3.2 Key policies, strategies, and plans most relevant to SAPREP	29
3.3 World Bank and FAO Safeguard Policies	32
3.3.1 World Bank Safeguards triggered	33
3.3.2 FAO Safeguards triggered	33
3.4 Justification and analysis of World Bank Policies triggered by SAPREP	34
4 Methodology for the Preparation, Approval, and Execution of Subprojects	36
4.1 Types of Subprojects to be supported by the project	36
4.2 Prioritization and Selection Criteria for Subprojects	37
4.3 Incorporating EA Process into the Design of Subprojects	37
4.4 Environmental Screening Process	38
4.4.1 Use of Screening Criteria for Subprojects	38
4.5 Preparation and Application Forms	38
4.6 Institutional and Implementation Arrangements	39
4.7 Assessments and Documentation	40
4.8 Grievance System	41
4.9 Key Impact Areas and Indicators	42
4.10 Thresholds for Environmental Impacts of Project Activities	43
4.11 Environmental Impacts Assessment and Mitigation Measures	43
4.11.1 Assessment of Project Impacts	43
4.11.1.1 Positive List of Subprojects	44
4.11.1.2 Negative List of Subprojects	45
5 Analysis of Alternatives	46
6 Elaboration of an Environmental and Social Management Plan	47
6.1 Environmental and Social Management Plan	47
6.2 Environmental Mitigation Measures	47
6.3 Environmental and Social Monitoring Plan	56
7 Institutional Assessment & Strengthening Institutional Capacities	61
8 Pest Management Plan	61
9 Public Consultations	62
9.1 Consultations Strategy	62

## **Annexes**

		64
Annex I	Environmental Screening Forms	68
Annex II	Standard Format for Environmental and Social Management Plan (ESMP)	70
Annex III	FAO Guidance Document: Pest and Pesticide Management in Field Projects	72
Annex IV	Public Consultations Report	77
Annex V	Brief of the Current Situation in Yemen - Update to the Social Assessment	89

## **List of Tables**

1	Environmental and Social Management Plan Matrix	11
2	Summary of Justification for the Triggered Policies	33
3	Positive List of Subprojects	43
4	Negative List of Subprojects	45
5	Environmental and Social Management Plan	49
6	Environmental Monitoring Plan Matrix	57
7	Set up of Consultations	63

## **List of Maps**

1	Map of Yemen	
---	--------------	--

## ABBREVIATIONS AND ACRONYMS

CBD	Convention on Biodiversity
CC	Climate Change
CITES	Convention on International Trade in Endangered Species
CMS	Conservation of Migratory Species
CRRC	Climate Resilience of Rural Communities
EIA	Environmental Impact Assessment
EMP	Environmental Monitoring Plan
EPA	Environmental Protection Authority
EPL	Environment Protection Law
ESMF	Environmental and Social Management Framework
FUs	Field Units
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization of the United Nations
GAFFSP	Global Agriculture and Food Security Program
GCC	Governorate Coordination Committee
GDP	Gross Domestic Product
GDPP	General Directorate of Plant Protection
GEF	Global Environment Facility
GSCP	Groundwater and Soil Conservation Project
PM	Pest Management
PMP	Pest Management Plan
M&E	Monitoring and Evaluation
MAI	Ministry of Agriculture and Irrigation
MWE	Ministry of Water and Environment
NAPA	National Adaptation Program of Action
NASS	National Agriculture Sector Strategy
NBSAP	National Biodiversity Strategy and Action Plan of Yemen
NFSS	National Food Security Strategy
NGO	Non- Governmental Organizations
NIP	National Irrigation Program
NWRA	National Water Resource Authority
NWSSIP	National Water Sector Strategy and Investment Program
O&M	Operation and Maintenance
PAPs	Project Affected Persons
PCU	Project Coordination Unit
PO	Project officer
RALP	Rain-fed Agriculture and Livestock Project
SA	Social Assessment
SAPREP	Smallholder Agricultural Production Restoration and Enhancement Project
SFD	Social Fund for Development
UNCCD	United Nations Convention on Combating Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

## Executive Summary

### Preamble

This Environmental and Social Management Framework (ESMF) is prepared for the Smallholder Agricultural Production Restoration and Enhancement Project (SAPREP). The project objective is to increase the use of productivity and agricultural practices by smallholders in targeted areas. The project is funded by a \$36M grant from the Global Agriculture and Food Security Program (GAFSP).

### Introduction

**In early 2015, Yemen descended into an enduring full-fledged conflict that** resulting in a catastrophic humanitarian situation. In May 2015, the UN placed Yemen at Level 3 of humanitarian distress, the highest categorization of countries in conflict. The escalation of conflict amplified an already existing protracted crisis, characterized by widespread poverty, conflict, and poor governance. According to UN agencies, the civilian death toll is estimated to have reached more than 7,500 with about 35,000 wounded. About half of Yemen's population lives in areas directly affected by the conflict and 3.1 million Yemenis have been forcibly internally displaced. The UN Yemen Humanitarian Response Plan (January 2016) estimates that 10.3 million Yemenis require immediate assistance to save or sustain their lives.

**The ongoing conflict has disrupted service delivery and led to severe economic distress.** Gross Domestic Product (GDP) is reported to have plunged by 40 percent, underpinned by widespread disruptions of economic activities, with enterprises operating at half the capacity compared to pre-war era. Unemployment rates are on the rise. An estimated eight million Yemenis have lost their livelihoods or are living in communities with minimal to no basic services. Poverty, already high before the conflict increased even further.

**Yemen is among the ten countries in the world with the highest rates of food insecurity and now is facing an unprecedented food crisis.** Conflict and civil insecurity are the main drivers of food insecurity with devastating effects on livelihood and nutrition situation. The March 2017 Integrated Food Security Phase Classification (IPC) reports an overall deterioration in the food security and nutrition situation, with an increase in the total number of food insecure people in Yemen from 14 to 17 million people between June and December 2016. This constitute 60 percent of population compared to 41 percent before the conflict. 6.8 million Yemenis are currently in IPC Phase 4 (Emergency) and 10.2 million are in Phase 3 (Crisis). Malnutrition has also been a serious problem in Yemen for a long time and acute malnutrition is a major outcome of the severe food insecurity and is at alarming levels. Eleven governorates are in serious or critical nutrition situation with global acute malnutrition (GAM) rates.

**Agriculture is a key source of livelihoods in Yemen.** Prior to the outbreak of the conflict, the sector employed more than half (54 percent) of the workforce and was the main source of income for 73 percent of the population either directly or indirectly through the services and industries serving the agricultural economy. The sector faces many challenges including high level of poverty, rapid population growth, poor connectivity to social and economic infrastructure and the extremely fragile and limited natural resources base that limit the productivity. The principal agricultural systems are in the rainfed highlands characterized by terraced agriculture for coffee, fruits, grains and qat, extensive livestock production, and the plains where irrigated horticulture and field crops predominate. The poor mountainous agriculture areas of the highlands are a challenge, with two thirds of all Yemen's food

insecure living in rainfed highland areas. About 75 percent of agricultural production comes from these highlands, which are home to 60 percent of the population.

**Limited water and fragmented land constrain agricultural potential.** Yemen is one of the most water scarce countries in the world, with about 80m<sup>3</sup> per capita of renewable water resources per year, just 1.3 percent of global average. Agriculture accounts for some 90 percent of water use, At the same time less than six percent of the total land area is considered suitable for field cultivation. Particularly small and fragmented plots (1 ha in average) are another constraint that prevents the sector from making a larger contribution to rural incomes and addressing trade imbalance in food items. In addition, Yemen is particularly vulnerable to climate change. The threats to the water sector from a changing climate would have serious implications on agriculture, including yields.

**Yemen depends almost entirely on imports to fulfill local demand for staple commodities.** Approximately 80 percent of food consumed is imported while local agricultural production accounts for only 20 percent of overall food availability. Imported food consists of staples such as wheat, rice, oil, sugar and milk. Yemen has self-sufficiency in some cereals (sorghum, millet, and barley) while 85 percent of wheat is imported. Cereals, qat and fodder account for 80 percent of total arable land use with wheat representing only 16 percent of the area cultivated for cereals. Domestic production consists also of meat, fruits and vegetables.

**The conflict has severely disrupted agricultural production and markets, transportation and distribution.** While productivity has always been low, the situation has become even worse with the conflict. In 2016, the total locally grown food supply was 62 percent of pre-crisis levels, mainly due to a reduction in the cultivated area, thus reducing food availability and household stocks. The crisis has reduced field activities and severely disrupted livelihoods in the agriculture sector. The conflict resulted in a lack of inputs such as seeds, fertilizer and fuel, damage to agricultural machinery, irrigation systems and storage facilities together with deterioration of water and electricity services, and breakdown of logistical chains. The absence of electricity and fuel, as well as the damage to production facilities, led to the disruption of locally manufactured supplies of production inputs for agriculture. The shortage of animal fodder and veterinary services have led to a decline in livestock production, a main source of income for many rural families. Prior to conflict the sector was the main source of livelihood for two-thirds of the Yemen population. Being the main employment sector in Yemen, agriculture has also been the sector most affected by the crisis with a loss of almost 50 percent of its workers. This drastic drop in employment will likely have a long-term negative impact on the labor force in agriculture.

**Under these circumstances the Smallholder Agricultural Production Restoration and Enhancement Project (SAPREP)** has been prepared based on the proposal submitted by the Government of Yemen in June 2013 to the Global Agriculture and Food Security Program (GAFSP) and also as an emergency response to the deteriorating food security situation in Yemen. The main feature of the proposal was to address the major challenges identified in the National Agriculture Sector Strategy (NASS) adopted by the Government of Yemen in 2012 to tackle the persistent challenges of the Yemeni agriculture sector, including food security, smallholder agricultural productivity, and climate resilience.

### **Brief Project Description**

The project will focus on two main areas of support: (i) providing support to poor households and smallholders to improve agricultural production, income and nutrition, and (ii) helping conflict affected

farmers to re-engage in crop and livestock sectors to restore their livelihood and provide income for their basic needs. The project will consist of the following three components:

*Component 1: Community Subprojects and investments.* This component will finance priority subprojects and investments to increase smallholders' production, income and nutrition through: (i) strengthening community land and water management; (ii) improving animal husbandry, livestock production and animal health services; and (iii) improving livelihood and nutrition, and increasing value-added of selected agriculture products. The component will also provide urgently needed support to farmers affected by the conflict, IDPs, returnees and other vulnerable groups (including poor women) to resume crop and livestock production. Subprojects and investments will be selected and implemented through a community-based and participatory approach.

*Component 2: Capacity Building and Extension.* This component will finance: (i) capacity building activities to strengthen skills of stakeholders involved in service provision in the project areas; and, (ii) extension activities for project beneficiaries in a range of fields. These activities will help preserve capacity of key service providers during the ongoing conflict and contribute to long term sustainability of community level agriculture investments. Potential service providers may include extension workers, agricultural input suppliers, local private veterinary technicians, and NGOs active in the agricultural sector, any other individuals in the district providing services in agriculture or economic development. All these stakeholders have the potential of being service providers not only for the project beneficiaries but for all farmers in their areas.

*Component 3: Project Administration, Management, Monitoring and Evaluation.* This component will support project administration and management, and monitoring and evaluation activities to ensure satisfactory project implementation.

The project will target poor and food insecure households within the governorates that are the most food insecure governorates in Yemen as identified by the Integrated Phase Classification (IPC) carried out in February 2017 to classify the severity and magnitude of food insecurity. These seven governorates, namely (i) Shabwa, (ii) Abyan, (iii) Lahj, (iv) Taiz, (v) Al-Hodeidah, (vi) Hajjah, and (vii) Saada, are in Emergency food insecurity phase and serious or critical nutrition situation. The selected governorates represent highland and lowland which are the main agro-ecological systems in Yemen.

### **Institutional and Implementation Arrangements**

SAPREP will be implemented by the FAO representation in Yemen. and the Social Fund for Development (SFD) as the FAO main implementation partner. FAO and SFD have established institutional and implementation mechanisms for the delivery of the project relevant activities in Yemen.

The FAO main office in Sana'a will provide oversight and quality assurance to the Project Team that will be in charge of the day-to-day management of the project, including all fiduciary aspects, safeguards, monitoring and reporting. At the regional level, implementation will be supported by FAO's regional hubs in Aden, Hodeida and Saada. From SFD side, the agricultural unit in the central office in Sana'a will provide overall support while the branch offices will provide support and coordination at governorate level.

FAO will establish the project coordination structures at national and regional levels which will coordinate and manage implementation of the project activities. The coordination structure will consist

of the Project Coordination Unit (PCU) at the national level, and the Project Coordination Teams (PCT) that will be based at the hub levels. PCU and PCT will comprise of FAO and SFD staff. PCU and PCTs will work closely with all the relevant stakeholders to update them on the project status and ensure coordination of the project activities with other livelihood and food security interventions on the ground.

The participatory approach adopted by SAPREP promotes the central role and active participation of communities and beneficiaries in the development and implementation of investment proposals under the project. Beneficiary communities are the populations of settlements or villages who share a common interest in the subproject and will be actively involved in the identification, selection, implementation, monitoring and operation and maintenance of community investments under SAPREP. FAO and SFD will have adequate staff and consultants (male and female) to facilitate the mobilization of communities and assist communities to form committees that will develop and review proposals and contribute in the implementation for subprojects in a participatory and inclusive way. Final approval of proposals for community subprojects and investments will be the responsibility of FAO. This will be done in accordance with the Project Implementation Manual that includes detailed guidelines to ensure the openness, inclusiveness and fairness of the process to reduce the risk of elite capture.

### **Objectives of the Environmental and Social Management Framework (ESMF)**

The purpose of the ESMF is to ensure that environmental and social management is integrated into the development cycle of individual subprojects. The SAPREP will be implemented as a community-led effort, where communities will be empowered to identify their priority agricultural needs. Since exact subprojects are not determined at the onset of project, but will be decided during project implementation based on demand and consultations with the concerned communities, the ESMF is the appropriate instrument under the Bank Operational Policy OP 4.01 on Environmental Assessment. The ESMF is intended to serve as a practical tool to guide identification and mitigation of potential negative environmental and social impacts of proposed investments and serve as a platform for consultations with stakeholders and potential project beneficiaries. The ESMF has been prepared in compliance with the Bank's OP 4.01 and relevant Yemeni policies on environmental assessment, and is consistent with the FAO Environmental and Social Management Guidelines.

The ESMF will be also applicable for the Bank's Operational Policy on Pest Management (OP 4.09). The ESMF includes a screening tool to identify subprojects that might require the preparation of a simple pest management plan (PM); and provides guidance for the preparation of an PM.

The ESMF identifies the policy triggers for the project, the screening criteria for subprojects, the environmental and social impacts for the likely subprojects and the mitigation measures to mitigate the identified risks, assessment of the institutional capacity of the implementing agency and measures for capacity-filling gaps, and an estimate of the budget needed for the implementation of the ESMF.

### **World Bank Safeguard Policies**

The SAPREP is classified as environmental Category B according to the World Bank Operational Policy OP 4.01 on environmental assessment. The project is expected to have significant positive environmental and social impacts, with relatively minor and localized negative impacts. The ESMF has been developed to ensure environmental and social due diligence for subprojects. The Bank safeguard policies on



Environmental Assessment (OP 4.01) and Pest Management (OP 4.9) are triggered by SAPREP Component 1 (Community Subprojects and investments); Component 2 (Capacity Building and Extension) and Component 3 (Project Implementation and Monitoring) do not present environmental or social risks.

### **FAO's Environmental and Social Management Policies and Procedures**

The SAPREP is classified as moderate risk according to FAO's Environmental and Social Management Guidelines<sup>1</sup>. To ensure the project does not pose any negative environmental and social impacts, some mitigation actions are necessary. The proposal triggers FAO safeguard 1 on Natural Resources Management and safeguard 5 on Pest and Pesticide Management.

### **Public Consultations and Disclosure**

The World Bank and FAO require that stakeholder consultations be undertaken during planning, implementation and operation phases of the project. As part of the SAPREP preparation, consultations have been an ongoing process with key stakeholders and other beneficiaries. The initial project design including the environmental/social aspects were discussed with key stakeholders during consultations that were held during June 1 to 17, 2014.

Annex (III) of this ESMF contains a summary of stakeholder consultations where points and concerns of stakeholders were documented. The stakeholder consultations provided valuable input to the design of SAPREP and identification of specific subprojects. Under the participatory approach to be used during project implementation, consultation with beneficiary communities will be an integral part of subproject identification, selection, design, implementation, and monitoring.

As referenced above, the participatory approach adopted by SAPREP promotes the central role and active engagement of communities and beneficiaries in the development and implementation of investment proposals under the project. Stakeholders and beneficiary communities will be actively consulted on the identification, selection, implementation, monitoring and operation and maintenance of community investments under SAPREP. FAO and SFD will have adequate staff and consultants (male and female) to facilitate the mobilization of communities and assist communities to develop and review proposals and contribute in the implementation for subprojects in a participatory and inclusive way. This will be done in accordance with the Project Implementation Manual, which includes detailed guidelines to ensure the openness, inclusiveness and fairness of the process to reduce the risk of elite capture.

The executive summary of the ESMF has been translated into Arabic and the final the ESMF including the Arabic executive summary will be disclosed in-country (on the FAO and SFD websites) and on the Bank's and GAFSP's websites as per the Bank's requirement. FAO requirements for moderate risk projects require disclosure of relevant project information (before appraisal formally begins) that is accessible and culturally appropriate, placing due attention to the specific needs of community groups which may be affected by project implementation (such as literacy, gender, differences in language or accessibility of technical information or connectivity). For moderate risk projects FAO releases the applicable information as early as possible.

---

<sup>1</sup> FAO's Environmental and Social Management Guidelines, available at: <http://www.fao.org/3/a-i4413e.pdf>

## **ESMF Findings**

The ESMF outlines the process for identification and evaluation of the potential environmental and social impacts of subprojects (and activities) and their mitigation measures. The ESMF concluded that most of the planned subprojects are expected to have none or very few and minor negative impacts, and presents mitigation measures for those potential negative impacts. By design, the project is expected to have far greater environmental benefits than adverse environmental impacts. However, it is recognized that small negative impacts can accrue into larger impacts if they are not identified early during the planning cycle, and their mitigation measures integrated into the project planning and implementation.

The following table (1) provides examples of types of subprojects activities, their potential impacts, and mitigation measures. Such impacts in many cases can be avoided or mitigated using sensible site selection criteria, good construction practices in harmony with the local culture, and appropriate management practices in the operational phase. The subprojects that have negative environmental and/or social impacts will need to have a specific Environmental and Social Management Plan (ESMP) to set forth the mitigation, monitoring and institutional measures to be taken during different stages of the project (design, construction and operation). The SAPREP implementation team (FAO/SFD) will work with communities to develop the site-specific subproject ESMPs as part of the subproject identification and preparation process.

## **Grievance Redress Mechanism**

An adequate grievance redress mechanism (GRM) will be established to ensure beneficiaries may communicate their concerns due to subproject activities either with the relevant focal point at the local level or with FAO/SFD central level and it is required this mechanism be publicized at the local level and in the local language. The SAPREP GRM will follow established FAO Yemen and SFD practices, and will provide multiple access points (telephone, complaints box, website, email, postal address) so that beneficiaries will know whom to contact with regard to their concerns. The SAPREP manager will have the overall responsibility to address concerns brought to the attention of the focal point regarding any environmental and/or social impacts due to subproject activities. Complaints received by the implementing agency shall be recorded and documented in the subproject file and the subproject progress report including the number and type of complaints and the results of their resolution.

## **Social Accountability**

Social accountability will be taken into consideration through: (i) the ability of beneficiaries to voice complaints and provide feedback through well-established GRMs; (ii) dissemination of information about the resumption of the SAPREP to the intended beneficiaries' relevant communities; (iii) independent verification through the third-party monitoring agency; and (iv) the FAOs/SFD field monitoring activities.

**Table (1) Environmental and Social Management Plan Matrix**

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<p><b>Added value activities to agricultural or animal production, processing, and packaging</b></p>	<p><b>Air Quality and Noise Construction</b> Construction may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities.</p> <p><b>Operation</b> Potential impacts on ambient air quality would result from odors and gaseous emissions generated by a food washing/air compressors wastewater treatment (undesirable odors); vehicles and motorized engines - Odor and heat increase may happen due to ventilation - Deterioration of water pipe and electric cables. The placement of septic disposal systems in impermeable soils with severe constraints to</p>	<p><b>Air Quality and Noise Construction</b> 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, Provide adequate protective wear for workers. Vehicles, boats and equipment must be maintained regularly to avoid any emissions; Pre-treat gases emitted by boilers and generators;</p> <p><b>Operation</b> Conserve energy use to reduce fuel combustion; Control emissions from wastewater treatment facility/septic tanks; Mitigation to the first factor could be addressed by frequent inspection to the buildings construction and apply the required maintenance. Regular</p>	<p>FAO with SFD monitor the design and supervision consultant's reports to ensure safeguards compliance, undertaking field visits or further investigations as necessary. The World Bank will also use 3<sup>rd</sup> party advisors to conduct its own monitoring to ensure the project is compliant with its environment and social safeguards</p>	<p>FAO with SFD oversee construction and operation activities and conducts visual inspection with the assistance of a representative of the local community. FAO/SFD ensures that contractors implement environmental management plans/regulations and that contractors perform continuous inspection and monitoring of areas of potential pollution and/or uses with the potential to result in soil contamination;</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Quarterly</p>	<p>To be covered as part of the construction cost</p>

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>disposal of liquid effluent  - Decaying by product  - Vibrations, from short-term or long-term operation, which may affect adjoining areas and buildings.  Handling Operations &amp; Occupational health:  Exposure of the workers to dust and other contamination sources.  Classification, cooling and loading due improper handling by workers.  Transmission of diseases may occur due to affected personnel working in handling of seeds and vegetables during the different steps inside the landing and storage site.</p> <p><b>Soil Quality and Surface/Ground water Pattern/contamination Construction</b>  Impacts on soil quality may result from the following construction activities:</p>	<p>inception and examinations for mentioned impacts and address them through repairing and replacement of materials spoiled. Minimizing entrance of heavy machines to reduce vibration impact.  For handling and occupational health applying restrict hygiene regulation and occupational health measurements is critical and a separate ESMP is required to parts of operational stages for handling, washing, classification, freezing, backing up to loading and distribution to consumption.</p> <p><b>Soil Quality and Surface/Ground water pattern/contamination Construction</b>  Apply, inspect and maintain temporary/permanent erosion and sediment control measures (e.g. silt fences, rapid growth vegetation, erosion control matting) to exposed areas;  Restrict movement of vehicles to designated tracks.</p> <p><b>Operation</b>  Maintain periodically vehicles</p>		<p>Complaints from local community</p> <p>Review of tender and bid documents by FAO/SFD</p>			

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>Site clearance, site grading, excavation, onshore infrastructure, and oil leaks from vehicles/equipment.</p> <p><b>Operation</b> Contamination of soils and groundwater with oils and chemicals may result from vehicles and equipment. Spills and leaks at liquid impoundment areas for fuels, solvents, waste and from infrastructure pipelines, may infiltrate through soil pores, under gravitational forces, and contaminate ground water aquifers; tourists driving around using four-by-four. Discharge into surface waters, or alteration of surface water quality, including but not limited to temperature, dissolved oxygen, turbidity, solids</p> <p><b>Waste waster</b> Potential generation of waste water resulting for the project activities and/ or subprojects during both</p>	<p>and equipment to prevent leaks; Maintain records and procedures for equipment maintenance, handling and storage of liquid fuels and chemicals; lab regular testing for ground and surface water quality.</p> <p><b>Waste Water</b> Encourage using composting toilet rather than flushing ones; Use of bio-treatment to prevent land disposal; Septic tanks for excess treated wastewater should be lined.</p> <p><b>Biological Resources- Flora &amp; Fauna</b> Applying environmental operational standards within the legal, policy and management framework of the project to</p>					

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>construction and operation.</p> <p><b>Biological Resources- Flora &amp; Fauna</b> Removal or disturbance of natural vegetation, A loss or disturbance to a unique, rare or threatened plant community, A reduction in the numbers or restriction in the range of any unique, rare or threatened species of plants wildlife habitat, Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife.</p>	<p>minimize the negative impact on the environment using the comparative advantage of the different project counterparts. Compliance with SAPREP area is critical for the conservation of biodiversity. Coordination with relevant stakeholders is very important, Proper selection of sites as to avoid damaging natural habitat. Tender document will have to include provisions for site specific ESMP.</p>					

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<b>Small-scale spate irrigation using traditional techniques</b>	<p>The above parameters are applicable here in addition to special concern for alteration or damaging natural habitat during construction, contamination may occur from building materials, run-off surface water obstacles and divert to cause other flooding hazards.</p> <p>Generation and improper dumping of construction waste</p> <p>More possibility of accidents</p>	<p>Some of the above measurements are applicable here. Avoiding damaging natural habitat, cultural, historical, religious places during constructions or minimize it (proper site selection, use mooring system, use environmentally friendly materials, prepare materials off-site, etc.). Tender document will have to include provisions for site specific ESMP. Good practice in design to be observed.</p> <p>Collect generated solid waste and transport them to locally designated and authorized dump site</p> <p>Provide workers with proper protective clothing.</p>	<p>FAO with SFD monitor the design and supervision consultant's reports to ensure safeguards compliance, World Bank 3<sup>rd</sup> party advisers will also conduct monitoring to ensure safeguards compliance, undertaking field visits or further investigations as necessary.</p>	<p>FAO/SFD</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Monthly</p>	<p>Cost of mitigation measures to be covered as part of the construction cost</p>
<b>Rooftop rainwater harvesting</b>	<p>If small workshops are required to be constructed to produce water harvesting materials, the potential impact can be damage of natural habitats due small constructions and construction waste.</p>	<p>Proper selection of sites as to avoid damaging natural habitat. Tender document will have to include provisions for site specific ESMP.</p>	<p>FAO with SFD; World Bank will also conduct its own monitoring</p>	<p>FAO/SFD oversee construction and operation activities</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Weekly/Monthly</p>	<p>Cost to be covered as part of the design cost</p>

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<b>Terraces construction and rehabilitation</b>	<p>Above parameters with special attention to alteration or damaging natural habitat during construction, contamination may occur from constructions materials, run-off surface water obstacles and divert to cause other flooding hazards</p> <p>More possibilities of accidents</p>	<p>Above measures are applicable here. With special concern for avoiding damaging natural habitat during constructions or minimize it (proper site selection, use environmentally friendly materials, prepare materials off-site, etc.) Tender document will have to include provisions for site specific ESMP. Good practice in design to be observed</p> <p>Protect sites from trespassers. Provide proper support for terraces sides to avoid collapsing. Provide workers with protective clothing.</p>	FAO with SFD World Bank will also conduct its own monitoring	FAO/SFD oversees construction and operation activities	FAO/SFD with support from Governorate Units	Monthly	To be covered as part of the construction cost
<b>Beekeeping, small ruminant fattening and, backyard poultry</b>	<ul style="list-style-type: none"> <li>- introduction of alien species</li> <li>- change biological balance</li> <li>- waste</li> <li>- Odor</li> <li>- storage and handling of veterinary drugs (vaccines)</li> </ul>	Site specific ESMP will be developed under each component, and will include: Measures taken to minimize pollution (on-site water/soil quality monitoring, ensure proper design of the fencing, etc.). No alien species are allowed; Regular monitoring of species; Use a warning system with environmental monitoring indicators. Measures taken to treat waste using biological methods. Apply best environmental practice to avoid	FAO with SFD; World Bank will also conduct its own monitoring	FAO/SFD oversees construction and operation activities	FAO/SFD with support from Governorate Units	As required	60,000 USD/Year for Environmental and Social Consultant



Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	More possibility of accident	odor and diseases; Apply proper feeding practices for small ruminant. Safe management of veterinary drugs. Tender document will have to include provisions for site specific ESMP  Provide workers with protective clothing.					
Access to natural resources (applies to all measures)	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, 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.	FAO with SFD monitor the sub project interventions will not result in negative impacts to any of the stakeholders.	FAO/SFD	FAO/SFD with support from Governorate Units	As required	--
<b>Total</b>						<b>60,000 USD</b>	

## I. **Project Description**

The development objective of the project is to increase the use of productivity and nutrition-enhancing agricultural practices by smallholders in targeted project areas.

The achievement of project outcomes will be measured through the following key PDO indicators: (i) Farmers adopting improved agricultural technology (disaggregated by gender); and (ii) Households supported to resume crop and livestock production.

The proposed SAPREP will focus on two main areas of support: (i) providing support to poor households and smallholders to improve agricultural production, income and nutrition, and (ii) helping conflict affected farmers to re-engage in crop and livestock sectors to restore their livelihood and provide income for their basic needs. The project will be implemented through three components, as detailed below.

*Local ownership and participatory approach:* The SAPREP initial proposal and design have been prepared by the Government of Yemen through the leadership of the Ministry of Agriculture and Irrigation (MAI) with active participation, contribution and strong ownership from a broad spectrum of stakeholders in Yemen. The implementation approach adopted is highly participatory with strong engagement from local communities. This participatory approach is fully supported by FAO and SFD as the key implementing partners.

### **Component 1: Community Subprojects and Investments.**

The component will finance priority subprojects and investments to improve smallholders' production, income and nutrition through: (i) strengthening community land and water management; (ii) improving animal husbandry, livestock production and animal health services; and (iii) improving livelihood and nutrition, and increasing value-added of selected agriculture products. The component will also provide urgently needed support to farmers affected by the conflict, IDPs, returnees and other vulnerable groups to resume crop and livestock production. The component will finance civil works (mostly community work), goods, consulting services, training and capacity building. Subprojects and investments will be selected and implemented through a community-based and participatory approach and in accordance with the Project Implementation Manual. The activities will be structured into three subcomponents.

***Subcomponent 1.1: Strengthening community land and water management.*** The objective of the subcomponent is to rehabilitate small-scale community water infrastructure and create assets to improve livelihood of beneficiary household and communities. Investments build on the successful water harvesting and small-scale spate improvement projects over the last fifteen years. Their design considers Yemen experience with terrace rehabilitation, which shows that erratic and unpredictable rainfalls have been the main cause of the abandonment of terrace cultivation. Investment and subprojects will be determined by the communities based on priority needs identified in consultation with the community during the participatory needs assessment. Activities under this subcomponent would include:

- I. Water harvesting at farm and micro watershed level in upper catchments of rainfed areas including rehabilitation of existing or construction of new terraces; rehabilitation of on-farm water storage facilities for supplemental irrigation of existing terraces; on-farm water harvesting through underground cisterns and open *wadi* pits; *wadi* soil conservation and erosion control through check dikes in *wadi* beds and vegetative measures; rehabilitation of shallow wells and springs;

- ii. Water diversion for improved spate irrigation in the lower catchments of selected governorates, through small spate diversion works using traditional technology, ponds excavations and canal control structures;
- iii. Roof-top and other type of water harvesting facilities; and,
- iv. Investments to improve natural rangelands through planting trees and establishing protection structures.

***Subcomponent 1.2. Improving animal husbandry, livestock production and animal health services.***

Activities and investments under this subcomponent aim at protecting livestock assets of poor households through improving access to veterinary services, and increase small ruminants and poultry production through better husbandry and feeding. The subcomponent will support also recovery of livestock production to improve food security, incomes and nutrition. This subcomponent will finance vaccines, startup goods and equipment, consulting services and training. Proposed activities will build on past successful livestock initiatives, which established a public-private partnership for expanding access to veterinary services by communities. Activities would include:

- i. Improving access to veterinary services in targeted communities through identification of Community Animal Health Workers (CAHW) of which fifty percent women, training and provision of start-up equipment;
- ii. Vaccination campaign to prevent major diseases in small ruminants;
- iii. Improving animal nutrition through demonstration of appropriate technologies; provision, preparation and training on nutritional supplements particularly for poor small livestock owners;
- iv. Enhancing animal husbandry through provision of small equipment and tools, and capacity building including to support smallholder beekeeping; and,
- v. Supporting new livestock activities, exclusively for poor women, returnees, IDPs or farmers which lost their livelihood assets because of the conflict, through startup packages for backyard poultry, small ruminants and apiculture to assist them to re-engage in livestock production.

***Subcomponent 1.3: Improving livelihoods and adding value to agriculture.*** Activities and investments under this subcomponent aim at improving the livelihood and nutrition, and increasing value added of selected agriculture products in targeted areas. This will be achieved by restoring and enhancing access to agriculture inputs, providing technical assistance and specific investments to improve agriculture yields, nutritional value, and upgrade and diversify agriculture and livestock production, processing and marketing. Financing would be for equipment, goods, consulting services and training. Activities would include:

- i. Supporting vulnerable groups (i.e. poor women, returnees, IDPs and farmers affected by the conflict) with provision of emergency agriculture livelihood kits to restore agricultural production and generate income;
- ii. Increasing value-added of key value chain agricultural products through provision of equipment as well as technical and business training (under component 2) for improving processing, packaging and marketing; and promotion of partnership with traders;
- iii. Increasing the farm-gate value and nutritional content of agricultural products through: provision of improved technologies and practices for key horticulture crops; and improving honey quality through improved beekeeping and processing;

- iv. Supporting dairy value chain and increasing the efficiency and reducing the cost of animal feed through production of animal rations from local material.

**Component 2: Capacity Building and Extension.**

This component will finance: (i) capacity building activities to strengthen skills of stakeholders involved in service provision in the project areas; and (ii) extension activities for project beneficiaries in a range of fields. These activities will help to preserve capacity of key service providers during the ongoing conflict and contribute to the long term sustainability of community level agriculture investments. Potential service providers may include extension workers, agricultural input suppliers, local private veterinary technicians, NGOs active in the agricultural sector, any other individuals in the district providing services in agriculture or economic development. All these stakeholders have the potential of being service providers not only for the project beneficiaries, but for all farmers in their areas. Activities under this component include the following:

- i. Capacity building for project beneficiaries involved in land and water management to introduce more effective and climate resilience irrigation techniques, and in livestock production to protect assets and increase production;
- ii. Piloting and possible expanding of Farmers Field School (FFS), which entails: developing the design and curricula of FFS, capacity of facilitators and trainers, and establishing the required basic facilities.
- iii. Promoting of nutrition awareness on nutrition-sensitive agriculture. Nutrition themes would be enhanced and demand-side nutrition awareness would be targeted to women and households to complement household gardens and other measures to diversify and improve diets;
- iv. Capacity building in technical and managerial aspects for farmer organizations and individuals involved in value adding activities (beekeeping, diary, horticulture and honey, etc.); and
- v. Developing the capacity of NGOs and private services to provide support to project beneficiaries through short-term consultancies and training.

**Component 3: Project Administration, Management, Monitoring and Evaluation.**

This component will support project administration and management, and monitoring and evaluation activities (M&E) to ensure satisfactory project implementation. The component will finance project management and supervision costs required to support implementation of the project, hiring of a third party monitoring (TPM) agency, and project evaluation. FAO will perform project core management and implementation support activities, including procurement, financial management and disbursement management, environmental and social safeguards oversight, monitoring the implementation process and evaluation of the project results, and project reporting.

**Proposed SAPREP Budget (US\$36 Million)**

<b>Components</b>	<b>GAFSP</b>
Component 1: Community Subprojects and Investments	29.89
1.1 Strengthening community land and water management	15.32
1.2 Improving animal husbandry, livestock production and animal health services	5.38
1.3 Improving livelihoods and adding value to agriculture	9.19
Component 2: Capacity Building and Extension	0.90
Component 3: Project Management and Monitoring	5.21
<b>TOTAL</b>	<b>36.00</b>

## **2. Baseline Environmental and Socio Economic Conditions**

### **2.1. Geographical location**

The project will target poor and food insecure households within the governorates that are the most food insecure governorates in Yemen as identified by the Integrated Phase Classification (IPC) carried out in February 2017 to classify the severity and magnitude of food insecurity. These seven governorates, namely (i) Shabwa, (ii) Abyan, (iii) Lahj, (iv) Taiz, (v) Al-Hodeidah, (vi) Hajjah, and (vii) Saada, are in Emergency food insecurity phase and serious or critical nutrition situation. Together, the seven selected governorates account for 42 percent of Yemen's population and 48 percent of the Yemen poor population. The selected governorates represent highland and lowland which are the main agro-ecological systems in Yemen.

### **2.2. Climate and meteorology**

The climate of Yemen is characterized as semi-arid, where rainfall is generally limited but with significant variations depending on the elevations. Temperatures are generally high, particularly in the coastal regions. The highlands enjoy a temperate, rainy summer with an average high temperature of 21 °C (69.8 °F) and a cool, moderately dry winter with temperatures occasionally dipping below 0 °C (32.0 °F) at some places. Some areas of the western highlands receive about 1,000–1,500 mm (39.4–59.1 in) of rain each year.

Clearly the balance of activities and resource use found in the project area is directly related to the availability of natural resources and the agro-ecological zone. While both Wadi Hadramaut and Shabwa are on the margins of the desert, the difference between the two areas is due to the fact that Wadi Hadramaut has access to significant ground water. Its groundwater supplies depend on three main aquifers. The shallow aquifer is saline to very saline in nature (EC 1.5 to 7.5mmhos/cm). The second aquifer rests in a rather compact conglomerate layer, is low yielding and of little economic importance. The third aquifer is in the Mukalla sandstone. In recent years, agriculture and other activities have put pressure on the aquifer due to over pumping; average pumping per year reached to 575 mm<sup>3</sup>, while the yearly charge only 500 mm<sup>3</sup>.

By contrast, the project areas in Shabwa are far more dependent on spate and thus on direct rainfall, which significantly reduces the potential for cultivation. Markha al Uliya and Hateeb have rainfall over 200mm/year, while the other project areas have only 50-100mm/year. Hence while Wadi Hadramaut has both cultivation and livestock as main resources, Shabwa are far more a livestock area as its soils and water situation mean that it has rangeland but far less cultivation.

Hajja, on the western slopes of the mountain range, has a more favorable rainfall pattern than Shabwa or Hadramaut, Hajja Governorate is characterized by arid tropical climate with the mean temperatures ranging from 25 °C to 35 °C, and the relative humidity of 60-80%. This climate covers the coastal plains region and the lower mountain slopes in the west and south. The rainfall in this area ranges from 70 to 400 mm. The eastern part of Hajja has more chance of rain during the monsoon season (summer), and rarely in the winter with less quantity. However, the selected project areas are in the western mid-low lands, with altitudes ranging from 500m to 1696m above sea level [Kuhlan al Sharaf]. Other, midland type areas are more similar to Shabwa though they benefit from significantly higher rainfall. The similarity is demonstrated by the comparative importance of livestock living off the range land, and the

cropping pattern based on rain fed and spate irrigated cereals, with only very limited well irrigation, mainly as supplementary irrigation and with very little in the way of high value cash crops, either vegetables or other. However, the higher rainfall and significantly higher access to water mean that qat is an important crop in some parts of the governorate.

Al-Hodeidah is located in the coastal plains which are flat to slightly sloping, with maximum elevations of only a few hundred meters above sea level. These plains contain important agricultural zones due to the numerous wadis that drain the adjoining mountainous and hilly hinterland. Al-Hodeidah have a desert climate and there is virtually no rainfall all year long. In Al-Hodeidah, the average annual temperature is 29.5 °C and the precipitation in this governorate averages 67 mm. The Tihama plain has a generally arid and tropical climate with annual potential evaporation rates of around 2500 mm. The rains, which are concentrated in tropical storms over the mountain catchments, cause short, often multi-peaked floods.

Lahj is characterized by two rainy seasons. The average yearly rainfall varies between 300 and 400mm as shown in the isohyetal map below. The first rainy season starts in November and stops by the end of March and the second starts in July and stops by the end of September; the wettest month being January. The mean monthly temperatures range between 21 to 31 degrees centigrade. The hottest months are June and July and the coldest month is April.

In Taiz, the seasonal wind of the Indian Ocean brings monsoon type of rains in the summer period in all parts of the Taiz governorate. The higher elevations in the governorate receive up to 800-900mm of rain annually. The coastal plain in Taiz receives 100-1500 mm of rain per annum. Occasional rains are observed in the highlands during the winter period. Saada's climate is of desert with about 163 mm of precipitation falls annually. At an average temperature of 21.5 °C, July is the hottest month of the year. The lowest average temperatures in the year occur in January, when it is around 12.6 °C.

### 2.3. Biological Flora and Fauna

Flora in Yemen: Yemen plants belong to the Sudanian and Somalian region. Some of which belong to the Arabian desert region or Sindi Desert, which extends to Egypt, Palestine and southern Iraq and southwestern Iran and Syria and called Holanigtse and little ones belong to the of the Mediterranean and Iranian regions. The African region plants exist in the western highlands and some plains of high elevations (Hajjah and Saddah) and the eastern mountains and desert plains, eastern and northern (Shabwa and Wadi Hadramout). The plants of Arabian Desert regions spread through Marib and Shabwa till Al-Maharah, while some of the Iranian region plants spread through the Hadhramout governorate and in Wadi Sharis in Hajjah governorate. According to the Ministry of Water and Environment (MoWE), about 2810 plant species were recorded in Yemen.

Fauna in Yemen: The environments of the project areas could be classified mountainous in Saada & Hajjah, coastal in Al-Hodeidah and Lahj, and desert in Shabwa and Hadramout. The most common livestock in the area are goats and sheep. People raise also cows, camels and birds. There are also wild animals in some governorates including, but not limited to the following: in Hajjah, there are hyena, lynx, Arabian leopard, wild dogs, mongoose, especially in protected area of Sharis- Hajjah. In Sanaa, there is hyena, lynx, wild dogs. In Shabwa, there are green turtles, wild dogs, caribou at the border areas with Hadramout. In Wadi Hadramout, there are caribou, lynx, hyena. Moreover, there are different types of animals, but due to the limited studies on animal life in Yemen, which is originally limited as a

result of the unknown scarce varieties and species of these animals. Also the species of these animals vary depending on environments in which they live. Generally, the fauna comprises 71 recorded mammal species, 5 species of gazelle and more than 363 species of birds. The major threats to fauna are hunting and destruction of habitats due to deforestation and urbanization and killing of animals perceived as dangerous.

#### 2.4. Socio-economic Situation

Population of the proposed projects governorates is as shown in the table below:

**Population of the proposed project governorates**

<b>Governorate</b>	<b>Total population (projected 2016)</b>
Abyan	557,000
Shabwa	619,000
Hajja	2,702,000
Al-Hodiedah	3,097,000
Lahj	983,000
Taiz	3,182,000
Saada	1,078,000
<b>Total</b>	<b>12,218,000</b>

Normally (prior to the conflict), livelihoods in the project area are based on a household mixed economy, including a broad range of sources of income. The balance of the mix and the quality and quantity of each type of activity, the asset base of the household, as well as the number of working members of the household are what determine the level of poverty. The range of activities include the following:

- cultivation (on own land or sharecropped), irrigated, spate or rainfed, producing mostly for the household in the case of basic staples (sorghum, maize, wheat) and for cash (coffee, vegetables, fruit, qat)
- livestock (small ruminants and poultry everywhere, cattle Hajja, camels in the other three governorates, bee keeping which is an increasingly important activity everywhere)
- off-farm micro enterprises like mechanical work, carpentry etc.
- cash labor locally or in nearby towns/cities (in agriculture, building, anything else available)
- government employment in civil or military jobs

- for some, international migration (legal or otherwise) to the Kingdom of Saudi Arabia (KSA), United Arab Emirates (UAE), or Oman. This migration provides immediate income to households for short term migrants. In the case of long term migration, which is usually legal, to the same destinations, the income remitted decreases over the decades as new households and commitments are made in the country of settlement
- women's income generating activities, ranging from the sale of animals and/or their produce like processed milk (ghee, buttermilk), eggs and also income from handicrafts.

It is reported that non-agricultural activities are acquiring an increasing share of household incomes. These activities range from large numbers of government employees, whether in the civil service (primarily education and health) or in a range of military jobs, to casual labor locally or beyond within Yemen and abroad. Immigration to neighboring countries, plays a major role in supporting households.

The seven governorates are all primarily agricultural, but there are significant differences

- Hodeidah: part of the lowlands, includes Tihama which is a coastal plain parallel to the Red Sea; with most of its soils arable.
- The other six areas are effectively part of the 'middle plateau' zone although in different geographical zones; they share low rainfall, and are either primarily dependent on well irrigation or on spate flows. These differences affect the relative roles of agriculture and livestock, as well as the livestock husbandry systems.

The importance of livestock husbandry for all sectors of society in the proposed governorates has been confirmed by field work (MAI, 2014). Almost all households own small ruminants, and even the poor have them, though obviously in much smaller numbers. Larger ruminants are present according to the agro-ecological zone: mainly cattle in Hajja Governorate, while camels are more prevalent in Shabwa and Abyan. These are considered as wealth indicators as the very poor do not own them; however, their milk production is relatively low and there is plenty of scope for improvement, which would positively impact family nutrition.

Gender aspects in relation to livelihoods: Women in Yemen do not have equality with men with respect to rights. By contrast when it comes to duties, they have more than their fair share. In rural areas, women are extremely active and certainly spend many more hours than men working in both crop production and livestock husbandry, let alone household domestic tasks which are their exclusive responsibility. While the benefits of crop production are shared reasonably evenly with respect to consumption within the home, when it comes to cash incomes, men have the upper hand as they are the ones who go to market and sell produce. They even usually sell the animals which are the personal property of women, and can thus keep the income if they wish to do so, even though that would be considered inappropriate behavior.

As of early 2017<sup>2</sup>, the main sources of household income are regular salary from the public and private sector (40%), casual labor in both agriculture and non-agriculture (30%), petty trade and sale of agriculture and fish products (20%) and the remaining (10%) is from other sources, such as remittances. The ongoing conflict has seriously affected an already deteriorating economic performance, and has disrupted livelihoods and income options in a number of ways. The airstrikes and ground fighting have

---

<sup>2</sup> Yemen IPC 1 March 2017 (Integrated Food Security Phase Classification)



damaged essential infrastructure for both public and private sectors including markets, roads, bridges, hospitals, schools, residential houses, power stations, agricultural farms, shops and water lines. As a result, most of the private businesses have been forced to shut down or reduce the workforce by more than half. The main reasons were physical damage to premises, loss of capital, mounting debt, lack of electricity and fuel, which has led to loss of livelihood options for more than 50% of the population.

Basic social services, including education, health, and water, are collapsing in several areas of the country and humanitarian needs are on the rise. The overall livelihood and socio-economic situation is not showing any signs of improvement and, combined with the reduction and suspension of government salaries, is most likely to have a substantial negative impact on the overall food security situation in the country.

Figure 1: Map of Yemen



### **3. Legal, Policy and Administrative Framework**

#### **3.1. Environmental Policy, Strategies & Law of Yemen**

The environmental related polices and laws in Yemen include inter alia: The Environment Protection Law (EPL) number 26 of 1995 forms the basis for the protection of the environment, issuance of permits, and Environmental Impact Assessments (EIAs). 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 issues such as ozone layer depletion and climate change. The law equally stipulates the incorporation of environmental considerations in economic development plans at all levels and stages of planning for all sectors. It also requires the preparation of EIAs 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 EIAs for projects is not strictly enforced. EIAs 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 Environment. The list of these policies, strategies and programs are:

- National Environmental Action Plan
- Environment & Sustainable Investment Program
- Biodiversity Strategy
- Environmental Impact Assessment Policy for the Republic of Yemen
- Reports on the State of Environment (by EPA)
- Evaluation of Future Development of the EIA System in Yemen

##### **3.1.1. Pesticides Law**

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. 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 Ministry of Agriculture and Irrigation (MAI), and the Directorate is to coordinate its work with the Environmental Protection Authority (EPA). The Pesticides Law provides the national legal basis for the application of the World Bank's Pest Management Safeguard Policy (OP 4.09) in SAPREP interventions.

### 3.1.2. 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 neighboring 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 management of SAPREP activities.

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

Law 39 of 1998 concerning Cooperative Societies and Unions, which is the organizational and legal reference for all cooperatives and cooperative unions in the Republic of Yemen. This law is seen of relevance to the SAPREP since it addresses community mobilization in terms of collective actions that would lead to better community involvement in the design, implementation and operation 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

#### 3.1.4. International and Regional Environmental Legislation

The Yemeni Government has ratified multilateral environmental agreements on agro-biodiversity and natural resources, oceans and seas, hazardous materials and chemicals, atmosphere and air pollution, and health and workers' safety. The following list provides the multilateral agreements relevant to the project activities:

Yemen is party to a number of international environmental agreements, the most important of which are:

- The Convention on Biodiversity (CBD) signed on 1/12/2005
- The Convention on the Conservation of Migratory Species (CMS); starting on the 1st of December, 2006; Yemen is party No.100.
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Signed at Washington, D.C., on 3 March 1973 and amended at Bonn, on 22 June 1979
- the United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol
- The United Nations Convention on Combating Desertification (UNCCD)
- Environmental Modification
- Hazardous Wastes
- World Cultural & Natural Heritage, Paris 1982
- Civil Responsibility for Damage from Oil Pollution, Paris 1979
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971
- Law of the Sea
- Ozone Layer Protection. On December 19, 1994, the United Nations General Assembly proclaimed 16 September the International Day for the Preservation of the Ozone Layer, commemorating the date in 1987, on which the Montreal Protocol on Substances that deplete the Ozone Layer was signed
- Yemen has also signed Stockholm Convention on Persistent Organic Pollutants (Signed: 12/05/2001; Ratified: 01/09/2004), which is 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.

#### 3.2. Key policies, strategies, and plans most relevant to SAPREP

A number of 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 on the whole dormant. The SAPREP design has been informed by these policies.

- National Adaptation Plan of Action (NAPA)

Key national policy, yet more recent and climate 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 currently is under ongoing update.

- 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 percent 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.

A summary can be drawn from the previous discussion is that SAPREP is going to meet the objectives contained in the strategies of the agricultural sector (NASS, NFSS, NAPA, NABSAP, NWSSIP, either to meet part of those goals or integrate with outputs to meet some of the goals of the such strategies. It is worth mentioning that the SAPREP targets will be executed in parallel at the same periods specified for other strategies, as it does not have a conflict with the goals of the strategies. Rather, there is integration in the implementation and achievement of the 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.

### 3.3. World Bank and FAO Safeguard Policies

Environmental and social impact assessment (ESIA) is required for projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. FAO has also implemented an environmental and social safeguard policy in order to identify, evaluate and manage the environmental and social risks of a project, adopt a mitigation hierarchy and promote sustainable agriculture and food systems.

ESIA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental and social impact of the proposed project. ESIA evaluates a project's potential environmental risks and social impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.

The Bank favors preventive measures over mitigation or compensatory measures, whenever feasible. For SAPREP, the ESMF is the appropriate tool for assessment of environmental and social impacts and identification of management measures.

The World Bank safeguard policies include:

- OP 4.01 Environmental Assessment
- OP 4.04 Natural Habitats
- OP 4.09 Pest Management
- OP 4.11 Physical Cultural Resources
- OP 4.12 Involuntary Resettlement
- OP 4.10 Indigenous People
- OP 4.36 Forests
- OP 4.37 Safety of Dams
- OP 7.50 Projects on International Waterways
- OP 7.60 Projects in Disputed Areas

SAPREP activities are financed by the GAFSP with the World Bank as supervising entity, and FAO as implementing agency. Therefore, the Bank's and FAO's Safeguard Policies apply.

### 3.3.1 World Bank Safeguards triggered

The safeguard policies were checked against the proposed components and their activities. The following discussion of the Policies explains which ones are triggered as a result of project activities. In preparing this ESMF, all categories of subprojects were screened against the Bank safeguard policies and it was determined that the following two policies are triggered by SAPREP Component 1: OP 4.01 on Environmental Assessment and OP 4.09 on Pest Management. Components 2 and 3 are capacity building and project management, and do not trigger safeguards policies. For further details on World Bank safeguard policies, please refer to [www.worldbank.org](http://www.worldbank.org)

Analyzing the World Bank Environmental Assessment policy and the national environmental law and regulations shows similarities regarding the requirement for categorizing, screening, assessing environmental impacts for any new project with potential negative impacts on the environment. Nevertheless, main gaps between the law and WB OP 4.01 include requirement for monitoring and public participation. The national pesticides law provides for handling, registration, and inspection of pesticides, nevertheless, the WB 4.09 is more specific in the requirement and triggering of PM application. These gaps will be covered by applying the WB 4.01 & 4.09 policies.

Environmental Assessment Safeguard Policy (OP 4.01): The project is expected to have significant positive environmental social impacts, in particular in most activities, with only relatively minor negative impacts. The OP 4.01 has been triggered because there is the potential that implementation of SAPREP sub projects may lead to some negative environmental impacts. The ESMF has however determined that there will be no potential large-scale, significant or irreversible environmental impacts associated with the project. The potential impacts identified are mainly localized impacts associated with activities to be financed under component 1 of the project (i.e., involvement of communities on a purely voluntary and demand basis), which can be effectively mitigated and are addressed using the screening criteria and environmental and social management plan (ESMP). For any minor negative impacts, the SAPREP will be in compliance with this OP 4.01, provided the actions prescribed in the subproject ESMP are implemented.

Pest Management Safeguard Policy (OP 4.09): The Pest Management (PM) approach, including biological pest control, has become the main alternative to control by chemical means. In order to 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 not envisaged under the project. However, farming is expected both to improve and to change cropping patterns to adapt to climatic changes. These changes are in turn not expected to increase the use of agricultural chemicals, fertilizers and pesticides, due to the project activities stressing on encouraging traditional and local practices in using organic fertilizers. However, due to some negligence and improper storage of seeds or importing new infected crops with would require some remedies and precautions. 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. The SAPREP thus has triggered this policy and the ESMF provides FAO guidance on pesticides and IPM (see Annex III).

### 3.3.2 FAO Safeguards triggered

SAPREP was also screened against FAO's environmental and social safeguards guidelines.



Safeguard 1 on Natural Resources Management: This safeguard recognizes that competition over natural resources is intensifying. Also degradation of natural resources and loss of ecosystem services are escalating as a result of the direct pressures and drivers of change. Access to natural resources and water in particular may become a source of conflict that could be aggravated by the rehabilitation of irrigation schemes foreseen in the project (adding value to land). This is particularly important, given that beneficiaries include returning refugees and locals. It is important that no stakeholders see their access to natural resources affected/decreased by the rehabilitation of irrigation schemes and subsequent added value of those lands or by water diversion for improved spate irrigation in the lower catchments. Clarity in terms of land tenure and ownership is also crucial.

Safeguard 5 on Pest and Pesticide Management is triggered as the project could include subprojects relating to the enhancement of agricultural productivity and introduction of high value crops and bee keeping. These activities could result in the use of pesticides. The ESMF includes a screening tool to identify subprojects that could need to prepare a simple pest management plan (PM). Such subprojects will prepare the PMP before they are approved for implementation. The Project will include relevant training at the field level such as in PM, selecting disease free seeds, bee keeping, etc.

#### 3.4. Justification and Analysis of WB Policies that will be triggered by SAPREP

The following Table presents the justification and analysis of WB policies that will be triggered by SAPREP:

**Table 2: Summary of justification for the triggered policies**

<b>Safeguard Policies</b>	<b>Policy Triggered</b>	<b>Justification</b>
Environmental Assessment OP/BP 4.01	Yes	Policy is triggered as the project is expected to include small-scale infrastructure and activities relating to soil and water management such as terraces, construction of water harvesting structures (e.g. cisterns), and small-scale spate irrigation subprojects. Activities will build on Yemen’s success in these areas over the last fifteen years. Since the locations of the subprojects are not known at this stage, an Environmental and Social Management Framework (ESMF) including a checklist for the screening of subprojects has been prepared and will be disclosed before project appraisal. Site/subproject specific Environmental and Social Management Plans (ESMPs) will be prepared during implementation and before implementation of subprojects/construction as required.
Natural Habitats OP/BP 4.04	No	The policy is not triggered. The project activities will not cause conversion or degradation of natural habitats or critical natural habitats as defined by the policy.
Forests OP/BP 4.36	No	Policy is not triggered as the project will not be implemented in

		any forested areas.
Pest Management OP 4.09	Yes	Policy is triggered as the project could include subprojects relating to the enhancement of agricultural production and introduction of high value crops and beekeeping. These activities could result in the use of pesticides and therefore OP4.09 is triggered, which will be covered within the scope of the ESMF. The ESMF includes a screening tool to identify subprojects that could need to prepare a simple pest management plan (PMP). Such subprojects will prepare the PM before they are approved for implementation. The Project will include relevant training at the field level such as in PM, selecting disease free seeds, bee keeping, etc.
Physical Cultural Resources OP/BP 4.11	No	Policy is not triggered as the project will not be implemented in areas of cultural heritage sites. However, chance finds procedures will be included in Project as is standard practice.
Indigenous Peoples OP/BP 4.10	No	Policy is not triggered as indigenous people as defined in the policy are not present in project areas.
Involuntary Resettlement OP/BP 4.12	No	Policy is not triggered. No involuntary resettlement is anticipated in the Project. The project will not finance any activities which involve involuntary taking of land and involuntary restriction of legally designated parks and protected areas. Land for project activities will be free of squatters/encroachers. It is expected that land needed for any subprojects will be in small scale and owned by the government. In case of private owned land, the project will obtain the land through voluntary donation by local communities. Voluntary land transactions will only be accepted if there is power of choice and informed consent. The guidelines for safeguards screening, voluntary land donation and negative project list will be developed and included in the Implementation Manual and the PAD, and a GRM for land donation will be put in place. FAO/SFD will conduct due diligence to ensure that no involuntary settlements will take place. Verification of the voluntary nature of land donation will be obtained and reviewed by the World Bank.
Safety of Dams OP/BP 4.37	No	Policy is not triggered as the proposed community subprojects will not include construction or rehabilitation of dams as defined by the policy.

Projects on International Waterways OP/BP 7.50	No	Policy is not triggered as the project will not undertake any activities in the catchment areas of international waterways and shared aquifers.
Projects in Disputed Areas OP/BP 7.60	No	Policy is not triggered as project activities will not be implemented in any disputed areas.

#### 4. Methodology for the Preparation, Approval, and Execution of Subprojects

4.1. Types of subprojects expected to be supported by the Project are listed below:

- Terraces rehabilitation
- Soil erosion control (wadi bank protection, etc.)
- Rehabilitation of water storage
  
- Small-scale spate irrigation subprojects
- Small water harvesting (cisterns and wadi pits)
- Wadi soil conservation and erosion control subprojects
- Rehabilitation of shallow wells and springs
- Ponds excavation
- Rooftop rainwater harvesting
- Rangeland rehabilitation
- Fodder production
- Management of crop residues
- Production of improved animal feed
- Horticulture marketing,
- Dairy production and marketing
  
- Post-harvest technology, food processing, grading and packaging
- Improved animal nutrition
- Distribution of cereal seeds for staple food production
- Provision of kits for poultry production
- Small ruminants restocking
- Apiculture
- Animal vaccination and treatment campaigns, capacity building on animal health
- Capacity building, training and extension to institutions, farmers, cooperatives and private sector
- Other activities could be considered as soft interventions, which are expected to have low or no negative environmental impact.

A subproject ESMP is the principal tool for the ESMF and would be prepared for above mentioned subprojects to identify expected impacts and mitigation and monitoring measures.

#### 4.2. Prioritization and selection criteria for subprojects

Subprojects will be ranked according to their contribution to poverty reduction and to support the poorest in general, women in particular, as well as the marginalized poor. To be included a subproject will have to be submitted by a family or a beneficiary based group composed primarily of target group members. Benefits will have to accrue primarily to the poor and total benefits for the poor will have to be greater than those for others. Detailed selection criteria and procedures will be outlined in the Project Implementation Manual which will also provide mechanism for social and economic prioritization. Implementing staff and agencies will be provided with detailed training in targeting at the beginning of the project.

Selection of subprojects would stem from the nature of the issues/problems to be addressed by the subproject. The interventions/subprojects criteria to be applied are listed below:

- Societal acceptance and community ranking of the project
- Positive cost/benefit ratio including environmental and social cost benefit
- Sustainability (eco-system co-benefits, environmental impacts, equity, O&M costs)
- Effectiveness (robustness, reliability)
- Implementation complexity (public acceptability, sustainable funding sources, capacity of information, technology, supervising staff)
- Within project financing ceiling.
- Minimal negative environmental impacts
- Large positive environmental impact

Final decision is made by FAO based on FAO/SFD field units' recommendation

Criteria for prioritization could be outlined as follows:

- Community ranking, involvement and participation in the subproject. Public consultations are necessary throughout the development of the subproject from its early identification through design and the subsequent steps. Stakeholders must be involved also in monitoring and evaluation of the subproject
- Cost- benefit analysis indicative of economic feasibility
- Sustainability of the subproject
- Impact on the environment
- Effectiveness and simplicity in implementation
- Decentralizing decision- making processes
- Capacity for managing the subproject at community and family levels

#### 4.3. Incorporating EA processes into the design of subprojects

The project will undertake the necessary institutional arrangements to enable beneficiary participation in the design, preparation, implementation and monitoring of subprojects. FAO will designate environmental and social specialist(s) to work closely with local communities to identify potential positive and negative environmental and social impacts of subprojects. Beneficiaries will be advised to

revise proposals, or include required mitigation measures, in order to minimize any potential negative environmental or social impacts to acceptable levels. Each subproject will be screened by the specialists in cooperation with the beneficiaries using FAO's environmental and social screening checklist, as well as the WB's Environmental Screening Form (found at Annex I). The environmental category will be assigned by the FAO specialist based on the screening.

A standard format for the Environmental and Social Management Plan (ESMP) (found at Annex II) will assist in developing the ESMP for site specific subprojects. FAO's environmental and social screening checklist and WB's screening form (Annex I) should be used to identify environmental and social issues to be addressed through the ESMP.

#### 4.4. Environmental Screening Process

The objective of the screening criteria and procedures is to ensure review of individual subprojects to be financed under the SAPREP in order to identify and address (eliminate or minimize) potential adverse environmental and social impacts. All subprojects under SAPREP Component 1 will be undertaken purely on a voluntary and demand basis, and implemented by the communities (farmers and residents) themselves where feasible.

Subprojects to be funded under the SAPREP will exclude ANY subprojects that could be environmental category A (having major or irreversible negative impacts), or that could trigger the Bank's involuntary resettlement policy (OP 4.12).

Subprojects will be screened against both, World Bank and FAO's safeguards criteria.

Screening against FAO's environmental and social safeguards is a 2-step process. The first level consists of 9 overarching questions that help determine whether a safeguard is applicable or not (see annex I for the first screening questions). In case one or more questions are answered positively, the subproject must undertake a second level screening for the applicable safeguard(s) with more detailed questions that help determine the type and level of risk.

Once the screening is finalized, the subproject is categorized as low, moderate or high and the risk classification obtained is certified by the LTO of the subproject.

The output of the screening process is the risk classification of the process. For subprojects classified as moderate or high, the FAO information system automatically generates an environmental and social risk matrix with information related to the risks identified as well as guidance on the necessary mitigation measures. The risk matrix constitutes the basis for the formulation of an environmental and social management plan.

##### **4.4.1 Use of Screening Criteria for Subprojects**

Community based village priority plans will be developed in consultation with the communities, building on their indigenous and traditional knowledge. During the subproject identification stage, FAO/SFD Community Mobilizers and technical staff/consultants will work with the communities in order to identify potential projects for funding using the screening criteria. Once the subprojects are screened and satisfy all criteria, they will be eligible to be approved for funding. Because activities carried out by SAPREP will be relatively small and simple in nature, they are not expected to require formal EPA review

and approval. The preventative actions and mitigation measures outlined in the ESMP should be used to address any potential adverse environmental and social impacts. The screening form is at Annex I.

#### 4.5. Preparation and application forms

As SAPREP is promoting the participation of communities and beneficiaries in the development and implementation of investments, proposals for subprojects will be submitted by the community, through the FAO/SFD Field Units. FAO/SFD will have adequate staff (with both male and female Community Mobilizers) to facilitate the mobilization of communities and assist communities to form committees that will develop and review proposals for subprojects through a participatory approach. Final approval of proposals for subprojects and investments at the community level will be the responsibility of FAO.

The approval of subprojects will take place on the basis of the proposed subprojects' technical and socio-economic viability as well as environmental sustainability. Subproject applicants shall be required to provide sufficient information regarding the project to allow for a detailed evaluation. If the applicant (e.g. a family, a small informal group, an NGO or a CBO such as a farmers' cooperative) cannot prepare an application, assistance in preparing these documents is included as part of the SAPREP subproject cycle.

#### 4.6 Institutional and Implementation Arrangements

The proposed SAPREP will be implemented by the FAO through contracting with implementation partners. Social Fund for Development (SFD) will be the FAO main implementation partner for the project. Partnership with local institutions and stakeholders is particularly critical to enable preserving national capacity for rapid response at the post conflict phase. FAO and SFD have established institutional and implementation mechanisms for the delivery of the project relevant activities in Yemen. As a specialized technical agency, FAO would provide the technical backstopping required in view of specific agriculture angle of the project interventions.

The FAO team in main office (Project Team) in Sana'a will be in charge of the day-to-day management of the project, including all fiduciary aspects, safeguards, monitoring and reporting. The Project Team in Sana'a will comprise Chief Technical Advisor, Operations Officer, Procurement, M&E specialist, Communication and reporting, Administration and Finance Officer, and Environmental Safeguard Specialist and Social Specialist. At the regional level, implementation will be supported by FAO's regional hubs in Aden, Hodeidah and Saada. The hub in Aden will coordinate activities in Shabwah, Abyan, Lahj and partially in Taiz. The other part of Taiz will be covered by the FAO regional hub in Ibb and the hub in Hodeidah will provide support for activities in Al-Hodeidah and Hajjah. Each hub office will include the staff dedicated for the project, including national technical advisor, operations specialist, administration and financial management specialist, and M&E and reporting officers. A number of international and national specialists, including livestock, value chains (dairy, horticulture and beekeeping), crop production, farmers field school, water management and communications will be hired to provide support to project activities.

From SFD side, the agricultural unit in the central office in Sana'a will provide overall support while the branch offices in Aden, Amman and El Mukalla will provide support and coordination for the project activities in Abyan, Lahj, Saada and Shabwa respectively. Branch offices in Hajjah, Taiz and Hodeida will provide support and coordination in their own governorates. Staff in the branch offices include branch manager, procurement officer, FM officer, technical officer for the quality supervision, M&E, IT which

are involved in the day-to-day activities.

FAO will establish the project coordination structures at national and regional levels which will coordinate and manage implementation of the project activities. The coordination structure will consist of the Project Coordination Unit (PCU) at the national level, and the Project Coordination Teams (PCT) that will be based at the hub levels. PCU and PCT will comprise of FAO and SFD staff. Apart from the project implementation aspect, PCU and PCTs will work closely with all the relevant stakeholders, including the technical staff of the Ministry of Agriculture and Irrigation where feasible, to update them on the project status and ensure coordination of the project activities with other livelihood and food security interventions on the ground.

Beneficiary communities. The participatory approach adopted by SAPREP promotes the central role and active participation of communities and beneficiaries in the development and implementation of investment proposals under the project. Beneficiary communities are the populations of settlements or villages in the targeted districts of the project areas who share a common interest and joint subproject. Beneficiaries can be organized in associations or groups (meaning any group of eligible individuals who have come together to implement an activity or have a common interest – these can be formally registered Community level organizations, cooperatives or informal groups which may in future register formally) will have actively involved in the identification, selection, implementation, monitoring and operation and maintenance of community investments under SAPREP. FAO and SFD will have adequate staff and consultants (male and female) to facilitate the mobilization of communities and assist communities to develop and subproject proposals and contribute in the implementation of subprojects in a participatory and inclusive way. Preparation and review of proposals for community subprojects and investments will be done in accordance with the Project Implementation Manual that includes detailed guidelines to ensure the openness, inclusiveness and fairness of the process to reduce the risk of elite captures.

#### 4.7 Assessments and Documentation

##### Preliminary Screening

During the identification and preparation of subprojects, FAO/SFD will apply screening check-lists/Form (Annex I) designed for the project. If restrictions to right of access to natural resources is expected, a preliminary assessment to identify the types, degree and scale of potential social impacts of the activity will be undertaken via the check-list. In cases where the preliminary assessment indicates that the potential adverse impact of the proposed subprojects activities will be significant such as involuntary land acquisition, these subprojects are considered ineligible under this project. When the subprojects are expected to have a positive impact, the extent of that impact will be one of the criteria for prioritization, alongside social and poverty reducing aspects. For example, a project with high positive environmental impact but low poverty alleviation impact [e.g. rehabilitation of terraces owned by a single large landowner] will get a lower priority scoring than a similar one with high poverty alleviation contents [e.g. wadi bank protection works which benefit a whole village of poor people].

##### Activity Preparation

Preparation and design of project activities will be carried out by FAO/SFD in direct consultation with local community and screening tools should be prepared in advance. Criteria for identifying targeted

beneficiaries should be paid particular attention in order not to include outside users of water and rangeland resources. All data should be maintained on computerized data management system to facilitate analysis and M&E.

#### 4.8 Grievance system

There are three main types of conflicts which occur in the proposed project areas (MAI, 2014). They are:

- Feuds, carried from one generation to the next, which plague life for tribes people throughout Yemen. These are primarily relevant to tribe people as in theory neither sadah (ashraf) nor the lower status groups are involved in such feuds as they are supposed to be under the protection of the tribes. During field work this problem was mentioned systematically in Shabwa governorate where it is a major problem
- Disputes over land ownership were mentioned everywhere as the main cause of conflict at the community level. These arise primarily at the time of inheritance, when different family members claim lands. They also occur between neighbors when there are claims of infringement of land by neighbors or others
- Disputes over water rights and access to water are increasingly important and frequent and were mentioned in all the project areas. People taking more water than their entitlement from irrigation wells or spate diversion canals are the main occurrences.

Everywhere people said that the way of dealing with these disputes was to refer them to local community leaders. All the communities participating in the fieldwork have hereditary community leaders (described above). In addition, some individuals gain social status of trust within communities due to their wisdom and behavior which attracts respect from others. These are the people who are called upon to solve problems within the communities. Indeed, many people obtain their status of trust through their ability to solve such problems. Some people mentioned that if these mechanisms fail, then conflicts are referred to State institutions.

In addition, in Wadi Hadramaut, special 'conflict resolution committees' are set up on an ad hoc basis when a dispute warrants it, and sometimes they are 'standing committees' which are assembled as needed. They are composed of respected individuals who may or may not include the traditional hereditary community leaders. Conflicts about pasture lands including those on water use are traditionally solved through the tribal muqaddam who forces both parties to elect a representative through consultation with the head of the tribe and the agreed solution must compulsorily be accepted by both parties.

#### **SAPREP Grievance Mechanism**

An adequate grievance redress mechanism (GRM) will be established to ensure beneficiaries may communicate their concerns due to project activities either with the relevant focal point at local level or with FAO/SFD central level. It is required this mechanism be publicized at the local level and in the local language. The SAPREP GRM will follow established FAO Yemen and SFD practices, and will provide multiple access points (telephone, complain box website, email, postal address) so that beneficiaries will know whom to contact with regard to their concerns. The SAPREP manager will have the overall responsibility to address concerns brought to the attention of the focal point regarding any environmental and/or social impact due to subproject activities.



Complaints received by the implementing agency shall be recorded and documented in the subproject file and the subproject progress report including the number and type of complaints and the results of their resolution.

## **Social Accountability**

Social accountability will be taken into consideration through: (i) the ability of beneficiaries to voice complaints and provide feedback through well-established GRMs; (ii) dissemination of information about the resumption of the SAPREP to the intended beneficiaries' relevant communities; (iii) independent verification through the third-party monitoring agency; and (iv) the FAOs/SFD field monitoring activities.

### **4.9 Key Impact Areas and Indicators**

The following major impact areas and indicators are suggested for assessment of Project Affected Persons (PAPs) concerns and social risks.

#### **a) Cultural Characteristics**

- Relationships with areas where they live: relating to cultural affinity with the ancestral lands, existence of livelihood opportunities, etc.
- Presence of customary social and political organizations: characteristics indicating internal organization and cohesion of the communities, and their interaction with those of the non-native population.
- Interactions and relationships with other outsider peoples' groups in the same and other areas.
- Presence of organizations, like NGOs and CBOs, working with community development issues, and their relationships with mainstream organizations engaged in community development activities.
- Identification of any cultural aspects likely to be affected or made vulnerable because of the proposed development works.

#### **b) Settlement Pattern**

- The extent to which the settlements are physically separated from those of outside sub projects sites, indicating interactions and mutual tolerance between the groups.
- Characteristics indicating physical organization of homesteads, and the existing community facilities, such as schools, water supply, etc.

#### **c) Economic Characteristics**

- Prevailing land tenure: indicating legal ownership and other arrangements that allow them to reside in and/or cultivate the lands in their areas.
- Access to common property resources: prevailing conditions under which they may have been using natural resources like forests, water bodies, and others that are considered important sources of livelihood.

- Occupational structure: indicating relative importance of household's present economic activities, and the extent to which they might be affected or benefited because of the proposed activity.
- Level of market participation: engagement in activities that produce marketable goods and services, and how and to what extent market participation would be affected or enhanced.

#### 4.10 Threshold for Environmental Impacts of Project Activities

Within the outlined variables of monitoring the subprojects (activities) which require mitigation measures and monitoring indicators, it is useful to identify guidelines determining whether or not a subproject may have a significant effect on the environment. This shall be based in part on thresholds of significance. These thresholds are measures of environmental change which are either quantitative, or qualitative but as specific as possible for topics which are resistant to quantification such as aesthetics, cultural resources, and biology. A project which has no effect on above threshold values individually or cumulatively shall be determined not to have any significant effect, and a negative declaration shall be prepared accordingly. Projects which have a potential effect above a threshold of significance will require special attention and rating values should be outlined to determine accepted values up to threshold point, stage of absolute damage and imposed health risk to ecosystem or human health. This value rating should be based on baseline survey and current situation of the significance impact up to the threshold rate.

The rating of impact may use numerical scale, for instance starts from zero to 5, where 5 may represent the threshold point which could be described as the level of impact that could lead to:

- Loss/alteration of habitat;
- Loss of human heritage/cultural& historical as well as religious places;
- Impose critical threats to human health.

The above mentioned criteria could be applicable to activities including impact on air quality, soil quality, quality of biodiversity or solid/liquid waste. The rating leading to threshold points should be determined in environmental studies and site specific ESMPs prior to approval of specific activities. It shall be scaled based on international standards and regulations in using and managing the above mentioned elements. For project, identifying impact rating to thresholds points could be measured based on the levels of allowable standards of:

- Emissions, dust, and suppression of noise
- Occupational Health and Safety
- Food processing, grading and packing
- Establishing new cash crops replacing Qat
- Conservation/Erosion control
- Soil protection and prevention of compaction
- Horticulture marketing, selling improved livestock product pollution
- Waste from food processing, grading and packing pollution
- Integrated Pest Management

#### 4.11 Environmental Impacts Assessment and Mitigation Measures

#### 4.11.1 Assessment of Project Impacts

Although the project is anticipated to have low negative environmental and social impacts, the sensitivity of the project site within a designated area may require that environmental and social management plans be in place. Many subprojects could be implemented that would not have any or only minor negative environmental and social impacts. The following two sub-sections summarize subprojects that could be considered by communities and are in the “Positive list” of eligible projects, and those that could not be considered within the project’s framework and are on its “Negative list”.

##### 4.11.1.1 Positive List of Sub Projects

Communities will be offered a practical way of alleviating poverty through the sustainable use and conservation of agro-biodiversity resources by financing small sustainable projects run by farmers in the targeted rain-fed areas. Involving the communities in a participation process of implementing such activities will offer them with better tools of management, social stability and good income. However, any activity will be accompanied with impacts that may affect the outcome and the results envisaged by the project people. Therefore, it is necessary to address the anticipated impacts, if any, and the required mitigation measures in order to implement the different activities in a positive and effective manner (Table 3).

**Table (3) Positive list of Subprojects**

Type	Subprojects
Food processing, grading and packing	Activities involve the preparation of food processing for preservation in the landing sites at different handling stages.
Horticulture marketing	Small scale activities
Conservation/Erosion control	Training and certifying community members as monitors;
Land use and management	<ul style="list-style-type: none"> <li>- Farmers are mainly using traditional practices of soil fertility.</li> <li>- Manure application and cover the land with stems, leaves and roots from harvests are some traditional practices used by involving women in the process of collection, and application on the fields.</li> <li>- Terraces are the main agricultural source in the rainfed highlands where Yemenis have been using these systems efficiently, maintaining them properly and depending on their production of different types of crops. The rehabilitation and maintenance of terraces would allow communities to use them more efficiently which would result in more agricultural activities, increasing income to families, and settlement of farmers. Social relationships and interaction would be positively enhanced through cooperation and participation.</li> <li>- Agricultural activities, increasing income to families, and settlement of</li> </ul>

Type	Subprojects
	farmers.
Water management	<p>- Improved access to domestic water through water supply systems especially for women.</p> <p>- Flood protection helping the communities to avoid damages to their fields and farms means preservation of crops and farms and saving long season production costs input and sustains the livelihood of the farmers.</p> <p>Climate change also produces high flood flow causing damages to infrastructure, agricultural land and houses.</p> <p>- Rehabilitation and construction of water harvesting system and springs.</p> <p>Water harvesting systems/WHS are used for supplementary irrigation to irrigate crops during short or/ and changes of times of rainfall. Water provided to cattle are also a great benefit during the same periods and also during rainy seasons. Yemen through past periods of time has been using WHS in all mountainous areas due to the importance of such systems to the stability of communities.</p>
Crop management	<p>Varieties of improved seed would enable farmers to cope with the climate change through the cultivation of such varieties</p> <p>- Varieties will result in sustainable production and better income</p> <p>- Improved crop varieties to be better adapted to shifts in climate patterns</p> <p>- Climate change affected the agricultural system and reducing the production of the usual crops. Introducing new varieties seed would enable farmers to cope with the climate change through the cultivation of such varieties. Consequently, such improved varieties will result in sustainable production and better income. These improved and better seeds will result in improved crop varieties that are likely to be better adapted to shifts in climate patterns.</p>
Income generation activities	<p>Communities will be offered a practical way of alleviating poverty through the sustainable use and conservation of agro-biodiversity resources by financing small sustainable projects run by farmers in the targeted rain-fed areas.</p> <p>- Activities will offer them with better tools of management, and good income such as:</p> <ul style="list-style-type: none"> <li>• Dairy and milk processing</li> <li>• agro-processing (horticulture)</li> <li>• beekeeping</li> </ul>

Type	Subprojects
Women empowerment	<ul style="list-style-type: none"> <li>- Increasing awareness levels among women</li> <li>- It will allow women to take decisions on matters and activities that concern them and on most issues that affect both women and men</li> <li>- Empowerment would result in giving women better status and provide them with better opportunities to reduce hardship</li> <li>- Improve the health status of women and their children and contribute more positively to the community.</li> </ul> <p>Increasing awareness and education levels among women especially of their rights and mobilizing them into committees and associations will enable them to recognize their strengths and to share responsibilities with the community more effectively. Additionally, it will allow women to take decisions on matters and activities that concern them and on most issues that affect both women and men. It is known that women work the hardest in Yemeni rural areas where they do most of the household works in addition to farming activities, water fetching etc. More empowerment would result in giving women better status and provide them with better opportunities to reduce hardship, improve the health status of women and their children and contribute more positively to the community they live in.</p>

#### 4.11.1.2 Negative List of Subprojects

ESMF has been designed to achieve sound environmental practice providing mechanisms to allow program implementation by screening out subproject proposals on the basis of environmental criteria and by simple process of elimination. A first step in the screening process could be to identify subproject activities not suitable for funding. It is recommended that the following types of subprojects are not financed and therefore should be considered as a "Negative List" (Table 4).

**Table (4) Negative list of Subprojects**

Subproject	Examples
Activities involve use of toxic/hazardous chemicals/pesticide	Agriculture projects are not environmentally compatible with the area due to water scarcity, soil nature, and potentially to use pesticides.
Construction of large new infrastructure within sensitive areas	Roads, public sewage treatment plant
Illegal activities as particularly identified under Yemen law	Identified by article x of law prohibited such kind of practices

Subproject	Examples
Activities result in high social impacts such as involuntary resettlement of individuals or households	Private land acquisition, dams constructions, impact on cultural heritage sites etc.
Sensitive ecosystems <ul style="list-style-type: none"> <li>• Activities involve use of toxic/hazardous chemicals</li> <li>• Activities that could dangerously lead to the exposure of sensitive/critical/vulnerable habitats</li> </ul>	Terraces rehabilitation if involve: roads construction on agricultural land, transport of agricultural soil from agricultural land, affect historical site, religious and cultural heritage, no demand for the project.  Agriculture projects are not environmentally compatible with the area due to water scarcity, soil nature, and potentially to use pesticides. Socially, the disputes between farmers on project, which will affect the social stability
Water management	The absence or in-adequacy or polluted source, - using only one source such as groundwater.  - Socially, the disputes between farmers on project, which will affect the social stability
Increase of gender gap	- Reluctances and unwillingness of the community especially men to support women.

## 5 Analysis of Alternatives

No project. A business-as-usual scenario implies maintaining the status quo of impoverished communities, maintaining the current poverty and livelihoods situation, and continued exploitation of the natural resources in a non-sustainable manner and compromising its biodiversity, and continued negative impacts on their livelihoods due to climate change. This option would wrongfully imply that there is no urgent need for investment and improved management or for improving sustainable livelihoods in the region. Moreover, many people interviewed during social assessment carried out by the project have experienced a worsening of poverty and an increasingly inability to finance their basic needs, and now in many cases, their basic food and nutritional needs. Sub projects expected under SAPREP should pose no or very minimal adverse impacts during the construction, implementation and operation phases.

Project activities and beneficiaries. The focus on smallholders rather than larger agribusinesses was identified as the most effective way SAPREP could have a positive and sustainable impact on food insecurity and improved nutrition for the most vulnerable. Specific targeting will ensure that beneficiaries include women, displaced farmers, and those who have lost their livelihoods due to the conflict.

Geographic targeting. The governorates selected are representative of the various farming environments in Yemen, have high levels of rural poverty and the most food insecure governorates in the country. Within each governorate, district-level project sites will be selected based on a set of criteria including food insecurity and malnutrition level, agriculture as a major source of livelihood (proportion of rural population), impact of conflict on crop and livestock production and presence of other relevant programs in agriculture production and livelihood support/food security. If and when a targeted district proves to be inaccessible due to insecurity, the district will be replaced with the next priority district to allow for timely implementation of the funds allocated for the respective governorate. Districts with the highest level of food insecurity and malnutrition will be prioritized based on the Food Security and Nutrition Cluster data.

## **6 Elaboration of an Environmental and Social Management Plan**

### **6.1 Environmental and Social Management Plan**

The WB's screening checklist (Annex I) as well as FAO's environmental and social screening checklist will determine if a subproject ESMP is needed. If so, the ESMP form contained in Annex II will be used. While the nature, magnitude, reversibility, and location of impacts are main elements in the screening of subprojects, expert judgment will be a main factor in deciding whether an ESMP is required for a subproject or not. For a subproject that requires an ESMP, the subproject proposal must contain an ESMP that will consist of a set of mitigation measures with monitoring and institutional arrangements to be taken during the construction and operation of the subprojects to eliminate adverse environmental and social impacts, offset them or reduce them to acceptable levels. The ESMP should include:

- **Mitigation:** Based on the environmental and social impacts identified from the use of the checklists, 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 subprojects, in order to measure the success of the mitigation measures. Specifically, the monitoring section of the ESMP provides:
  - (i) 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, e.g. the need for on-site construction supervision.
  - (ii) 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 annual audits and surveys to monitor overall effectiveness of this ESMF.

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 community can budget the necessary funds and include it in the proposal. The mitigation and

monitoring measures recommended in the ESMP should be developed in consultation with all affected groups to incorporate their concerns and views in the design of the ESMP.

## 6.2 Environmental Mitigation Measures

By design, the project is expected to have far greater environmental benefits than adverse environmental impacts. The potential adverse environmental impacts from the project are likely to be small and limited. Spatial and temporal distribution of impacts that would result from the project activities, as well as the subprojects requires the attention especially during screening.

However, it is recognized that such impacts can accrue into larger impacts if they are not identified early during the planning cycle, and their mitigation measures integrated into the project planning and implementation. The following table provides direct and significant potential impacts due to project actions. Given the fact that minimum impact subprojects are eligible and the level of available fund, such impacts could be mitigated using sensible site selection criteria, good construction practices in harmony with the local culture and diligent management practices in the operational phase.

Subprojects such as small scale water harvesting, etc., that require mitigation procedures will be defined in the ESMP. Table 5 below identifies some of the possible environmental and social impacts that could arise in each selected subprojects, proposed mitigation measures, responsibilities, and rough cost estimate. As mitigation measures must be taken into account the 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.

The site specific ESMP will be prepared by the FAO/SFD team in cooperation with the community. The ESMP will be reviewed by the FAO/SFD project teams, then may also reviewed by the World Bank for final approval prior to implementation. The ESMP matrix is shown in Table 5, while the environmental monitoring plan matrix is indicated in Table 6.



**Table (5) Environmental and Social Management Plan**

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<p><b>Added value activities to agricultural or animal production, processing, and packaging</b></p>	<p><b>Air Quality and Noise Construction</b> Construction may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities.</p> <p><b>Operation</b> Potential impacts on ambient air quality would result from odors and gaseous emissions generated by a food washing/air compressors wastewater treatment (undesirable odors); vehicles and motorized engines - Odor and heat increase may happen due to ventilation - Deterioration of water pipe and electric cables. The placement of septic</p>	<p><b>Air Quality and Noise Construction</b> 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, Provide adequate protective wear for workers. Vehicles, boats and equipment must be maintained regularly to avoid any emissions; Pre-treat gases emitted by boilers and generators;</p> <p><b>Operation</b> Conserve energy use to reduce fuel combustion; Control emissions from wastewater treatment facility/septic tanks; Mitigation to the first factor could be addressed by frequent inspection to the buildings</p>	<p>FAO with SFD monitor the design and supervision consultant 's reports to ensure safeguards compliance, undertaking field visits or further investigations as necessary. The World Bank will also use 3<sup>rd</sup> party advisors to conduct its own monitoring to ensure the project is compliant with its environment and social safeguards</p>	<p>FAO with SFD oversee construction and operation activities and conducts visual inspection with the assistance of a representative of the local community. FAO/SFD ensures that contractors implement environmental management plans/regulations and that contractors perform continuous inspection and monitoring of areas of potential pollution and/or uses with the potential to</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Quarterly</p>	<p>To be covered as part of the construction cost</p>

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>disposal systems in impermeable soils with severe constraints to disposal of liquid effluent</p> <ul style="list-style-type: none"> <li>- Decaying by product</li> <li>- Vibrations, from short-term or long-term operation, which may affect adjoining areas and buildings.</li> </ul> <p>Handling Operations &amp; Occupational health: Exposure of the workers to dust and other contamination sources. Classification, cooling and loading due improper handling by workers. Transmission of diseases may occur due to affected personnel working in handling of seeds and vegetables during the different steps inside the landing and storage site.</p> <p><b>Soil Quality and Surface/Ground water Pattern/contamination Construction</b> Impacts on soil quality</p>	<p>construction and apply the required maintenance. Regular inception and examinations for mentioned impacts and address them through repairing and replacement of materials spoiled. Minimizing entrance of heavy machines to reduce vibration impact.</p> <p>For handling and occupational health applying restrict hygiene regulation and occupational health measurements is critical and a separate ESMP is required to parts of operational stages for handling, washing, classification, freezing, backing up to loading and distribution to consumption.</p> <p><b>Soil Quality and Surface/Ground water pattern/contamination Construction</b> Apply, inspect and maintain temporary/permanent erosion and sediment control measures (e.g. silt fences, rapid growth vegetation, erosion control matting) to exposed areas; Restrict movement of vehicles to designated tracks.</p>		<p>result in soil contamination;</p> <p>Complaints from local community</p> <p>Review of tender and bid documents by FAO/SFD</p>			

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>may result from the following construction activities: Site clearance, site grading, excavation, onshore infrastructure, and oil leaks from vehicles/equipment.</p> <p><b>Operation</b> Contamination of soils and groundwater with oils and chemicals may result from vehicles and equipment. Spills and leaks at liquid impoundment areas for fuels, solvents, waste and from infrastructure pipelines, may infiltrate through soil pores, under gravitational forces, and contaminate ground water aquifers; tourists driving around using four-by-four. Discharge into surface waters, or alteration of surface water quality, including but not limited to temperature, dissolved oxygen, turbidity, solids</p> <p><b>Waste waster</b></p>	<p><b>Operation</b> Maintain periodically vehicles and equipment to prevent leaks; Maintain records and procedures for equipment maintenance, handling and storage of liquid fuels and chemicals; lab regular testing for ground and surface water quality.</p> <p><b>Waste Water</b> Encourage using composting toilet rather than flushing ones; Use of bio-treatment to prevent land disposal; Septic tanks for excess treated wastewater should be lined.</p> <p><b>Biological Resources- Flora &amp; Fauna</b> Applying environmental operational standards within the</p>					

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	<p>Potential generation of waste water resulting for the project activities and/ or subprojects during both construction and operation.</p> <p><b>Biological Resources- Flora &amp; Fauna</b> Removal or disturbance of natural vegetation, A loss or disturbance to a unique, rare or threatened plant community, A reduction in the numbers or restriction in the range of any unique, rare or threatened species of plants wildlife habitat, Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife.</p>	<p>legal, policy and management framework of the project to minimize the negative impact on the environment using the comparative advantage of the different project counterparts. Compliance with SAPREP area is critical for the conservation of biodiversity. Coordination with relevant stakeholders is very important, Proper selection of sites as to avoid damaging natural habitat. Tender document will have to include provisions for site specific ESMP.</p>					

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<b>Small-scale spate irrigation using traditional techniques</b>	<p>The above parameters are applicable here in addition to special concern for alteration or damaging natural habitat during construction, contamination may occur from building materials, run-off surface water obstacles and divert to cause other flooding hazards.</p> <p>Generation and improper dumping of construction waste</p> <p>More possibility of accidents</p>	<p>Some of the above measurements are applicable here. Avoiding damaging natural habitat, cultural, historical, religious places during constructions or minimize it (proper site selection, use mooring system, use environmentally friendly materials, prepare materials off-site, etc.). Tender document will have to include provisions for site specific ESMP. Good practice in design to be observed.</p> <p>Collect generated solid waste and transport them to locally designated and authorized dump site</p> <p>Provide workers with proper protective clothing.</p>	<p>FAO with SFD monitor the design and supervision consultant 's reports to ensure safeguards compliance, World Bank 3<sup>rd</sup> party advisers will also conduct monitoring to ensure safeguards compliance, undertaking field visits or further investigations as necessary.</p>	<p>FAO/SFD</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Monthly</p>	<p>To be covered as part of subproject design or construction cost</p>
<b>Rooftop rainwater harvesting</b>	<p>If small workshops are required to be constructed to produce water harvesting materials, the potential impact can be damage of natural habitats due small constructions and construction waste.</p>	<p>Proper selection of sites as to avoid damaging natural habitat. Tender document will have to include provisions for site specific ESMP.</p>	<p>FAO with SFD; World Bank will also conduct its own monitoring</p>	<p>FAO/SFD oversee construction and operation activities</p>	<p>FAO/SFD with support from Governorate Units</p>	<p>Weekly/Monthly</p>	<p>To be covered as part of the design</p>

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
<b>Terraces construction and rehabilitation</b>	<p>Above parameters with special attention to alteration or damaging natural habitat during construction, contamination may occur from constructions materials, run-off surface water obstacles and divert to cause other flooding hazards</p> <p>More possibility of accidents</p>	<p>Above measures are applicable here. With special concern for avoiding damaging natural habitat during constructions or minimize it (proper site selection, use environmentally friendly materials, prepare materials off-site, etc.) Tender document will have to include provisions for site specific ESMP. Good practice in design to be observed.</p> <p>Protect site from trespassers. Provide proper support for terraces sides to avoid collapsing. Provide workers with protective clothing.</p>	FAO with SFD World Bank will also conduct its own monitoring	FAO/SFD oversees construction and operation activities	FAO/SFD with support from Governorate Units	Monthly	To be covered as part of subproject design or construction cost
<b>Beekeeping, small ruminant fattening and, backyard poultry</b>	<ul style="list-style-type: none"> <li>- introduction of alien species</li> <li>- change biological balance</li> <li>- waste</li> <li>- Odor</li> <li>- storage and handling of veterinary drugs (vaccines)</li> </ul>	<p>Site specific ESMP will be developed under each component, and will include: Measures taken to minimize pollution (on-site water/soil quality monitoring, ensure proper design of the fencing, etc.). No alien species are allowed; Regular monitoring of species; Use a warning system with environmental monitoring indicators. Measures taken to treat waste using biological methods. Apply best environmental practice to avoid</p>	FAO with SFD; World Bank will also conduct its own monitoring	FAO/SFD oversees construction and operation activities	FAO/SFD with support from Governorate Units	As required	60,000 USD/Year for Environmental and Social Consultant

Subprojects Measures	Potential Environmental or Social Impacts	Proposed Mitigation Measures	Monitoring Requirements (including supervision)	Means of insurance and compliance	Institutional Responsibility (including enforcement/coordination)	Time Frame or Schedule for Monitoring	Cost Estimate for Mitigation
	More possibility of accidents	odor and diseases; Apply proper feeding practices for ruminant. Safe management of veterinary drugs. Tender document will have to include provisions for site specific ESMP.  Provide workers with protective clothing.					
Access to natural resources (applies to all measures)	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, 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.	FAO with SFD monitor the sub project interventions will not result in negative impacts to any of the stakeholders.	FAO/SFD	FAO/SFD with support from Governorate Units	As required	--
<b>Total</b>						<b>60,000 USD</b>	

### 6.3 Environmental and Social Monitoring Plan

1. Environmental monitoring is an integral part of an ESMP, which outlines the specific information to be collected to ensure the environmental quality at different stages of project implementation. The parameters and their frequency of monitoring should be provided along with cost of monitoring plan and institutional arrangements for conducting monitoring. Reporting formats should be provided along with a clear arrangement for reporting and taking corrective action. Table (6) below outlines examples for monitoring a subproject. Monitoring costs are included within the budgets for the subproject components, to be financed from the GAFSP grant. In addition to regular -weekly or monthly- monitoring by FAO/SFD, SAPREP overall will be subject to Third Party Monitoring (TPM), which will review project compliance with the ESMF as well as conduct performance verification of other aspects of implementation. The TPM agency will be conduct oversight monitoring as needed, particularly in areas with security concerns and will report directly to the implementing agency on the outputs and findings of the monitoring, reports will be shared with the Bank.

#### 6.3.1 Subprojects Monitoring and Evaluation

Monitoring and reporting will be supervised by FAO/SFD staff. Members of the community, through their representatives, should be trained to undertake both compliance monitoring and impact monitoring. This will be done throughout the subproject 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 aspects,
- During the operation and maintenance phase, the overall environmental monitoring (including monitoring human-natural resources conflict) and alerting on any emerging environmental hazards in conjunction with the ongoing subproject activities. Communities will pass on their observations and concerns through the local FAO/SFD Project staff.



**Table (6) Environmental Monitoring Plan Matrix**

Mitigation Aspects	Mitigation Measures	Monitoring Indicators	Monitoring Methods	Implementing Agency	Monitoring Agency	Monitoring Frequency
Reduce emissions, dust, and suppression of noise	<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>Covering waste disposal trucks with tarpaulins</li> <li>Ensuring that ambient air quality limits are not exceeded: vehicles and machinery should comply with emission standards.</li> <li>Construction activity noise levels will be maintained below limits.</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Adopting composting practices to reduce the amount of solid waste produced and reduces the need for waste collection vehicles.</li> </ul>	<p>Complaints from local community and occupants</p> <p>Dust deposition on vegetation and rocks</p> <p>Loud noise can be heard from a distance</p> <p>Change in natural habitats within surroundings</p>	<ul style="list-style-type: none"> <li>Monitoring devices to ensure compliance of noise and emissions</li> <li>Field observations</li> <li>Interaction with local community: use indigenous knowledge to understand impact on wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Contractor during food processing, grading and packing structures construction</li> <li>FAO/SFD during operation phase</li> </ul>	FAO/SFD with relevant CBOs	Daily/ Weekly
Occupational Health and Safety	<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>Compliance with General rules and regulations on Occupational Health and Safety.</li> <li>Provision of protective gear for workers including helmets, boots, gloves, masks, and earplugs.</li> <li>Provision of first aid kit at work sites and necessary information on rescue during emergency.</li> <li>Prohibiting admission of children, guests, or dependents of legal employees or underage workers to construction site.</li> <li>Provision of appropriate training and emergency response procedures.</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Provision of fire extinguishers and first-aid kits in the food processing, grading and packing structures and camp sites.</li> <li>An operational manual will also be developed for the building facilities management.</li> </ul>	<p>Complaints from labourers, occupants, and local community</p> <p>Number of incidents/accidents</p> <p>Adoption level of OHS</p>	<ul style="list-style-type: none"> <li>Construction site inspection</li> <li>Review of incidents records</li> </ul>	<ul style="list-style-type: none"> <li>Contractor during food processing, grading and packing construction</li> <li>FAO/SFD during operation phase</li> </ul>	FAO/SFD with relevant CBOs	Monthly
Solid Waste Management	<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>Construction waste will be stored and disposed of in an environmentally safe manner.</li> </ul>	Complaints from local community and occupants	<ul style="list-style-type: none"> <li>Construction site inspection</li> </ul>	<ul style="list-style-type: none"> <li>Contractor during food processing,</li> </ul>	FAO/SFD with relevant	Weekly during construction

Mitigation Aspects	Mitigation Measures	Monitoring Indicators	Monitoring Methods	Implementing Agency	Monitoring Agency	Monitoring Frequency
	<ul style="list-style-type: none"> <li>A suitable location will be designated for the safe storage of construction waste onsite. The designated location should be void of vegetation, natural habitats, and distant from depressions or surface drainage.</li> <li>Onsite waste shall be covered with tarpaulin to prevent dust clouds from forming.</li> <li>Waste will be carted away from the onsite storage location to a location identified by for filling purposes.</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Spaces should be designated for on-site separation for paper, glass, aluminium, steel and plastics.</li> <li>Adopting a garbage prevention strategy: recycle for reuse or recycled back into the environment through biodegradation where possible</li> </ul> <p>Final disposal of waste through landfills should be remote from population and properly designed in accordance with global and national specifications.</p>	Improper disposal of waste products		grading and packing structure/ seed bank construction <ul style="list-style-type: none"> <li>PIU during operation phase</li> </ul>	CBOs	phase
Sewage Waste Management	<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>Recommended use of pit latrines during the construction stage of food processing, grading and packing/ seed bank structures and in the remote camping areas. Pit latrines should not be located in runoff areas, in depression, or near water resources.</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Adopting composting strategy of solid sewage waste and use compost for greenery.</li> <li>Use of composting toilets not flush toilets.</li> <li>Recommended use of biological treatment technologies of sewage waste that does not involve land disposal.</li> </ul> <p>Recommended use of biological systems to purify wastewater.</p>	Construction specifications and infrastructure design Improper disposal of waste products Soil and water quality measurements reflecting Contamination of nearby areas from sewage waste products.	<ul style="list-style-type: none"> <li>Review of tender and contractor bid documents</li> <li>food processing, grading and packing/ seed bank structures site inspection</li> <li>Water and soil quality monitoring</li> </ul>	<ul style="list-style-type: none"> <li>FAO/SFD</li> </ul>	FAO/SFD with relevant CBOs	Annually
Soil protection and prevention of	<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>Soil removed through excavation should be used as back filling or immediately removed from the project.</li> </ul>	Indication of rill or inter-rill erosion Soil compaction during	<ul style="list-style-type: none"> <li>Field observations</li> <li>Complaints from local</li> </ul>	<ul style="list-style-type: none"> <li>Contractor during food processing,</li> </ul>	FAO/SFD with relevant	Weekly during construction

Mitigation Aspects	Mitigation Measures	Monitoring Indicators	Monitoring Methods	Implementing Agency	Monitoring Agency	Monitoring Frequency
compaction	<ul style="list-style-type: none"> <li>Any excavated soil remaining temporarily on site should be placed in proper location and covered using tarpaulin.</li> <li>Construction should be avoided during periods of anticipated rainfall to prevent any soil erosion.</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Use of existing paths for transportation and avoiding the creation of new routes that would disrupt vegetation, wildlife and compact soils.</li> <li>Limit the use of vehicles in the region to reduce soil compaction and ecosystem disruption.</li> </ul> <p>Reduce dependency on vehicles for services</p>	<p>construction or operation</p> <p>Disruption of vegetation and wildlife</p>	community	<p>grading and packing/ seed bank structures construction</p> <ul style="list-style-type: none"> <li>FAO/SFD during operation phase</li> </ul>	CBOs	phase and periodically during project operation
Horticulture marketing, selling improved livestock product, apiculture pollution management	<p><b>Construction phase:</b></p> <ul style="list-style-type: none"> <li>Cages should be fixed by proper mooring system</li> <li>Care should be given during instalment to prevent physical damage (experienced divers)</li> </ul> <p><b>Operation Phase:</b></p> <ul style="list-style-type: none"> <li>Measures to minimize pollution (on-site water quality monitoring, ensure proper design of the Horticulture marketing, etc.)</li> <li>No alien species are allowed</li> <li>Regular monitoring of species</li> <li>Use a warning system with environmental monitoring indicators</li> <li>Measures to treat waste using biological, chemical and physical filters, prioritize water re-use</li> <li>Apply best env practice to avoid odor and diseases.</li> </ul> <p>Proper feeding practices</p>	<p>Complaints for locals</p> <p>Disturbance of livestock life</p> <p>Change of water quality</p>	<ul style="list-style-type: none"> <li>Field observations</li> <li>Water quality monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Contractor during construction stage</li> </ul>	FAO/SFD with relevant CBOs	<p>Daily</p> <p>Weekly</p>
Waste from food processing	<p><b>Operation phase:</b></p> <ul style="list-style-type: none"> <li>Proper waste management</li> <li>Implementation of national waste management strategy, designation of sites for disposal of biological waste.</li> </ul> <p>Occupational Health and Safety Standards applied</p>	<p>Complaints from local community on odor/contamination</p> <p>Presence of food related diseases in enclosed yards,</p>	<ul style="list-style-type: none"> <li>Field observations</li> <li>Incident report</li> <li>Violations</li> <li>Water quality monitoring</li> </ul>	<ul style="list-style-type: none"> <li>FAO/SFD</li> </ul>	FAO/SFD with relevant CBOs	Quarterly

Mitigation Aspects	Mitigation Measures	Monitoring Indicators	Monitoring Methods	Implementing Agency	Monitoring Agency	Monitoring Frequency
		Incorrect disposal of waste products				
Access to natural resources (especially water)	<p><b>Design phase:</b></p> <ul style="list-style-type: none"> <li>Beneficiary 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.</li> </ul> <p><b>Operation phase:</b> Regular monitoring by FAO/SFD to ensure equitable access to project benefits, with particular attention to vulnerable groups (women, youth, returnees).</p>	<p>Consent form</p> <p>Complaints from local community and occupants</p>	<p>Site visits</p> <ul style="list-style-type: none"> <li>Complaints</li> </ul>	<ul style="list-style-type: none"> <li>FAO/SFD</li> </ul>	<p>FAO/SFD with relevant CBOs</p>	<p>Quarterly</p>

## **7. Institutional Assessment and Strengthening Institutional Capacities**

SAPREP will be implemented by the FAO representation in Yemen and the Social Fund for Development (SFD), as FAO's local implementation partner. FAO remains active and SFD has sustained delivery of critical programs in the country throughout the conflict. While both FAO and SFD have strong capacity to implement SAPREP, additional staff or consultants may be engaged to ensure the right skills mix and numbers of specialists to work in all the project areas. Component 2 provides for capacity building activities to strengthen skills of stakeholders involved in service provision in the project areas and extension activities for project beneficiaries in a range of fields.

## **8. Pest Management Plan (PMP)**

Procurement of pesticides is not envisaged under the project. However, the project could include subprojects relating to enhancement of agricultural production and introduction of high value crops, support seed banks and beekeeping. These activities could result in the use of pesticides and therefore OP 4.09 is triggered. The ESMF has included a screening tool to identify subprojects that would need to prepare a simple pest management plan (PMP). Such subprojects will prepare the PMP before they are approved for implementation. The Project will include relevant training at the field level such as in PM, selecting disease free seeds, bee keeping, etc. A mechanism will be put in place to demonstrate Pest Management procedures and to develop a farmer education program that stresses good and safe practices for storage and application of pesticides. Yemen has gained increasing experience with PM techniques over the last few years, preparing pest management plans for grapes and qat, building capacity in the MAI's Department of Plant Protection, and providing outreach and advice to farmers. The SAPREP will reinforce and build on these experiences as necessary to ensure proper pest management. The project will use the FAO Guidance document provided in Annex III for identifying the need to prepare an PMP for a subproject. A separate PMP is needed if expected quantities of pesticides to be used are significant from health and environment standpoint; or if pesticide use or other non-indigenous biological control into an area will be introduced; or if hazardous products (WHO Class Ia and Ib) will be financed. The PMP consists of the following components:

- Activities
- Actors and partners
- Institutional arrangements for implementation
- Phasing plan
- Cost estimates

The activities of the PMP are designed to ensure that implementation of the SAPREP project complies with the World Bank's Safeguard Policy on Pest Management, OP 4.09.

- Activity 1 – If feasible, study tours will be organized to similar programs/agency where farmer participatory Pest Management (PM) programs have been successfully implemented. The study tour will be organized for representatives of selected areas. A national PM workshop will be organized to share experiences gained during the study tour and to facilitate the implementation of the PMPs.
- Activity 2 - Promoting the adoption of /PM practices
  - Supporting activities of the Community PM Action Committees
  - Developing PM training capacity in the extension services
  - Developing PM capacities amongst PIU and farmer Groups

- Production of field brochures, PM posters, field guides and other IPM promotional materials; purchase of various PM Extension Guides publications.
- Public awareness programs and PM networking amongst the project stakeholders
- Activity 3 - Training in pesticides management; safe use of pesticides
  - Making decisions to use pesticides
  - Transport, storage, handling and distribution of pesticides
  - Safe application of pesticides
  - Risks in the handling and use of pesticides
  - Managing risks and pesticide poisoning
  - Protective gear; use and maintenance
  - Public awareness on safe use of pesticides; radio talks, etc.
- Activity 4 - Strengthening national regulatory frameworks and institutional capacities
  - Support PIU to assist with national coordination of PMP activities of the SAPREP project.
  - Support to the MAI to participate effectively in the implementation of the PMP
- Activity 5 - Integrated Vector Management: surveillance of disease vector populations in the environment of small irrigation schemes
  - Surveillance teams to be set up in villages around the water sources and irrigation sites to conduct regular surveys on the incidence of water borne diseases.
  - Training in environment management for the control of water borne diseases

## **9. Public Consultations**

This is a demand-driven program, and farmer organizations and user associations will be principal partners, building on successful experience e.g. under RALP. Community ownership and program accountability will be achieved through participatory, local level programming and through social accountability mechanisms such as participatory M&E. Broad participation of beneficiary groups is also a risk-mitigating factor to ensure effective implementation, as has been demonstrated by other similar interventions. Public consultations proved to be successful approach to ensure genuine participation and engagement of all stakeholders in different project phases and steps which requires developing consultations strategy.

### **9.1 Consultation Strategy**

The project will be managed through FAO, which had good coordination with strong ties to government, academia and CSOs. This ensures smooth flow of information between the community and the managing bodies of the project. A basic step in this regard is public consultations and/or Focused Group Discussions (FGD) with the local communities and all other relevant stakeholders during the screening process (and during subproject implementation). These consultations/FGD should identify key issues and determine how the concerns of all parties will be addressed. The concerns of local people, vulnerable and marginalized groups must be taken into account fully in subproject planning. Annex IV reflects local communities and other relevant stakeholders that were met in the consultations sessions in 2014, while Annex V provides an update of the current situation in Yemen. It should be mentioned that despite slight modification of geographical coverage of the project, the public consultations conducted in 2014 remain valid and relevant as they reflect opinions and concerns of communities on the type and scale of proposed investments under the project. Further public consultations and/or Focused Group Discussions (FGD) with the local communities and all other relevant stakeholders will be

conducted during the screening process for each proposed subproject. The 2014 social assessment together with the update will be available as a separate annex to the ESMF.

To facilitate meaningful consultations and/or FGD, FAO/SFD will provide all relevant material and information concerning the subprojects activities in a timely manner prior to the consultation, in a form and language that are understandable and accessible to the groups being consulted. Once a proposed subproject has been reviewed the FAO/SFD field units will inform the public about the results of the review.

For all subprojects that will be implemented at the community level, the FAO/SFD field units will be responsible for disclosing the findings and recommendations of the environmental and social screening process to the communities. FAO/SFD field units' staff will be responsible for taking minutes of the public disclosure meetings along with list of participants and photos if possible and will produce and distribute copies of the minutes to offices at the community level. A summary of the outcome of this public disclosure meeting will be posted at appropriate places in communities. To ensure that an appropriate public consultation and/or FGD mechanism is developed, the environmental and social screening process will include:

- Development of individual subproject ESMP (if required);
- Once the subproject activities have been cleared by the FAO/SFD project teams, the FAO/SFD field units will inform the communities about the results of the review;
- In the context of the Monitoring Program, the FAO/SFD field units will undertake both compliance monitoring and impact monitoring throughout the subproject cycle.

The table below explains the setup of these consultations and/or FGD:

**Table (7): Set up of consultations**

<b>Phase role</b>	<b>Responsible body</b>
Design phase – using the checklists, assist each applicant to identify potential environmental and social impacts resulting from proposed subprojects activities, and to subsequently redesign proposals to avoid/minimize such impacts or include mitigation measures	FAO/SFD field unit and FUs under coordination of the social mobilizer team (male and female) to ensure that both men and women are consulted with the community committee/community facilitator
Screen proposals - based on environmental and social checklists, either approve subproject proposals for implementation, or stipulate that an ESMP is necessary	FAO/SFD with support of relevant CBOs
Draft an ESMP if necessary	FAO/SFD
Review and approve ESMP and implementation arrangements	FAO with support of NSC and GSC before submitting for clearance by the Bank
Monitoring the implementation of subprojects activities	FAO/SFD with support of FUs and relevant CBOs

**Annex I**

**Environmental and Social Screening Form/Checklists for Subprojects under Component 1  
(to be completed by FAO/SFD in consultation with community)**

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 subproject: .....

Screening Checklist Completed By (Name and Title): .....

Date: .....

Category of subproject assigned by FAO/SFD (A, B or C): .....

Name of Approving Authority (if functioning): .....

**1. Brief Description of Subproject (activities)**

Please provide information on the type and scale of subproject (subproject area, area of required land, approximate size of total building floor areas, etc.)

---

---

---

**2. The Natural Environment**

(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)?

(i) Intact natural forests Yes \_\_\_\_\_ No \_\_\_\_\_

(ii) Riverine forest Yes \_\_\_\_\_ No \_\_\_\_\_

(iii) Wetlands (lakes, rivers, seasonally inundated [flooded] areas) Yes \_\_\_\_\_ No \_\_\_\_\_

(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 Yemeni laws and/or international agreements Yes \_\_\_\_\_ No \_\_\_\_\_

(vi) Others (describe) (e.g. cultural sites, burial places, etc.) Yes \_\_\_\_\_ No \_\_\_\_\_

### 3. Fauna and Flora

- Will subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems? Yes \_\_\_\_\_ No \_\_\_\_\_

### 4. Destruction/Disruption of Land and Vegetation

- Will the subproject lead to unplanned use of the infrastructure being developed? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to landslides, slumps, slips and other mass movements in road cuts? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will the subproject lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles? Yes \_\_\_\_\_ No \_\_\_\_\_

### 5. Protected areas

- 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.)

Yes \_\_\_\_\_ No \_\_\_\_\_

- 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)

Yes \_\_\_\_\_ No \_\_\_\_\_

## 6. Geology and Soils

- Based upon visual inspection or available literature, are there areas of possible geologic or soil instability (erosion prone, landslide prone, etc.)?

Yes \_\_\_\_\_ No \_\_\_\_\_

- Based upon visual inspection or available literature, are there areas that have risks of large-scale increase in soil salinity?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 7. Historical, archaeological or cultural heritage site

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?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 8. Resettlement and/or Land Acquisition

- Will the subproject require land acquisition?

Yes \_\_\_\_\_ No \_\_\_\_\_

- If so, will this land acquisition be involuntary?

Yes \_\_\_\_\_ No \_\_\_\_\_

- If so, will this involuntary land acquisition lead to relocation or loss of shelter, loss of assets, or access to assets?

Yes \_\_\_\_\_ No \_\_\_\_\_

- 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)?

Yes \_\_\_\_\_ No \_\_\_\_\_

-If so, will this involuntary land acquisition lead to loss of income sources of vulnerable groups such elderly people, women headed family, etc.)?

Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject lead to involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on livelihoods of displaced persons?

Yes \_\_\_\_\_ No \_\_\_\_\_

## 9. Loss of Household Infrastructure

- Will subproject result in permanent or temporary loss of household infrastructure (such as granaries, outside toilets and kitchens, etc.)?

Yes \_\_\_\_\_ No \_\_\_\_\_

-If these impacts on granaries, outside toilets and kitchens are lost due to acquisition of land they fall under OP 4.12 and thus ineligible for project financing.

10. Will the subproject lead to child labor less than 18 or forced labor?

Yes \_\_\_\_\_ No \_\_\_\_\_

-If so, then this subproject will be ineligible for financing

10. Noise pollution during Construction and Operations

Will the operating noise level exceed the allowable (ambient) noise limits? Yes \_\_\_\_\_ No \_\_\_\_\_

11. Solid or Liquid Wastes, including Medical Waste

- Will subproject generate large amounts of residual wastes (solid or liquid wastes), including medical waste? Yes \_\_\_\_\_ No \_\_\_\_\_

- If "Yes", does subproject include a plan for collection/disposal? Yes \_\_\_\_\_ No \_\_\_\_\_

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

- Will the subproject require the use of such chemicals? Yes \_\_\_\_\_ No \_\_\_\_\_

- If, "Yes", does subproject include a plan for safe handling, use and disposal? Yes \_\_\_\_\_ No \_\_\_\_\_

- If, "No" the subproject is ineligible for financing under this project.

13. Water and Soil Contamination

- Will subproject require large amounts of raw materials/construction materials? Yes \_\_\_ No\_\_

- Is the proposal for constructing large scale project e.g. road, public sewage treatment plant, dams i.e 10 meters height or more? If, yes, the subproject is ineligible. Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject generate large amounts of residual wastes, construction material waste or cause soil erosion? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject result in soil or water contamination (e.g. from oil, grease and fuel from equipment)? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject lead to contamination of ground and surface water bodies by herbicides for vegetation control and chemicals for dust control? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject lead to the destruction of vegetation and soil in the right-of-way; borrow pits, waste dumps, and equipment yards? Yes \_\_\_\_\_ No \_\_\_\_\_

- Will subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquitoes? Yes \_\_\_\_\_ No \_\_\_\_\_

Signature of community representative:

Date:

\_\_\_\_\_

\_\_\_\_\_

Signature of FAO/SFD environmental/social risk specialist:

Date:

\_\_\_\_\_

\_\_\_\_\_

## FAO Environmental and Social Risk Identification

### FAO Trigger questions

	Question	YES
1	<p>Could this project:</p> <ul style="list-style-type: none"> <li>• result in the degradation (biological or physical) of soils or undermine sustainable land management practices; or</li> <li>• include the development of a large irrigation scheme, dam construction, use of waste water or affect the quality of water; or</li> <li>• reduce the adaptive capacity to climate change or increase GHG emissions significantly; or</li> <li>• result in any changes to existing legitimate tenure rights<sup>3</sup> (formal, informal and customary<sup>4</sup>) of individuals, communities or others to land, fishery and forest resources?</li> </ul>	
2	<p>Would this project be executed in or around protected areas or natural habitats, decrease the biodiversity or alter the ecosystem functionality, use alien species, or use genetic resources?</p>	
3	<p>Could this project:</p> <ul style="list-style-type: none"> <li>• introduce crops and varieties previously not grown, and/or;</li> <li>• provide seeds/planting material for cultivation, and/or;</li> <li>• involve the importing or transfer of seeds and or planting material for cultivation <u>or</u> research and development;</li> <li>• supply or use modern biotechnologies or their products in crop production, and/or</li> <li>• establish or manage planted forests?</li> </ul>	
4	<p>Would 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?</p>	
5	<p>Could this project:</p> <ul style="list-style-type: none"> <li>• result in the direct or indirect procurement, supply or use of pesticides<sup>5</sup>: <ul style="list-style-type: none"> <li>– on crops, livestock, aquaculture, forestry, household; or</li> <li>– as seed/crop treatment in field or storage; or</li> <li>– through input supply programmes including voucher schemes; or</li> <li>– for small demonstration and research purposes; or</li> <li>– for strategic stocks (locust) and emergencies; or</li> <li>– causing adverse effects to health and/or environment; or</li> </ul> </li> <li>• result in an increased use of pesticides in the project area as a result of production intensification; or</li> </ul>	

<sup>3</sup> Tenure rights are rights to own, use or benefit from natural resources such as land, water bodies or forests

<sup>4</sup> Socially or traditionally recognized tenure rights that are not defined in law may still be considered to be 'legitimate tenure rights'.

<sup>5</sup> Pesticide means any substance, or mixture of substances of chemical or biological ingredients intended for repelling, destroying or controlling any pest, or regulating plant growth.

	<ul style="list-style-type: none"> <li>• result in the management or disposal of pesticide waste and pesticide contaminated materials; or</li> <li>• result in violations of the Code of Conduct?</li> </ul>	
6	Could this project permanently or temporarily remove people from their homes or means of production/livelihood or restrict their access to their means of livelihood?	
7	Could this project affect the working conditions or job prospects of project beneficiaries or others who may be impacted by it, or will the project directly or indirectly employ hired labour?	
8	Could this project risk be overlooking existing gender discrimination or inequalities in terms of men’s and women’s participation in decision making and/or their differential access to productive resources, services and markets?	
9	<p>Would this project:</p> <ul style="list-style-type: none"> <li>• have <i>indigenous peoples</i><sup>6</sup> living <i>outside the project area</i><sup>7</sup> where activities will take place; or</li> <li>• have indigenous peoples living in the project area where activities will take place; or</li> <li>• adversely or seriously affect on indigenous peoples’ rights, lands, natural resources, territories, livelihoods, knowledge, social fabric, traditions, governance systems, and culture or heritage (<i>physical</i><sup>8</sup> and <i>non-physical or intangible</i><sup>9</sup>) inside and/or outside the project area; or</li> <li>• be located in an area where cultural resources exist?</li> </ul>	

<sup>6</sup> FAO considers the following criteria to identify indigenous peoples: priority in time with respect to occupation and use of a specific territory; the voluntary perpetuation of cultural distinctiveness (e.g. languages, laws and institutions); self-identification; an experience of subjugation, marginalization, dispossession, exclusion or discrimination (whether or not these conditions persist).

<sup>7</sup> The phrase “outside the project area” should be read taking into consideration the likelihood of project activities to influence the livelihoods, land access and/or rights of Indigenous Peoples’ irrespective of *physical* distance. In example: If an indigenous community is living 100 km away from a project area where fishing activities will affect the river yield which is also accessed by this community, then the user should answer “YES” to the question.

<sup>8</sup> Physical defined as movable or immovable objects, sites, structures, group of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance located in urban or rural settings, ground, underground or underwater.

<sup>9</sup> Non-physical or intangible defined as “the practices, representations, expressions, knowledge and skills as well as the instruments, objects, artifacts and cultural spaces associated therewith that communities, groups, and in some cases individuals, recognize as part of their spiritual and/or cultural heritage”

**Annex II**

**Subproject Environmental and Social Management Plan  
For Category “B” Subprojects**

**1. Project Name:** \_\_\_\_\_

**2. Project Type:** \_\_\_\_\_

**3. Brief description of the project** (project's components including assisting services, scope of service, number of beneficiaries, number of workers, etc.)

---

---

---

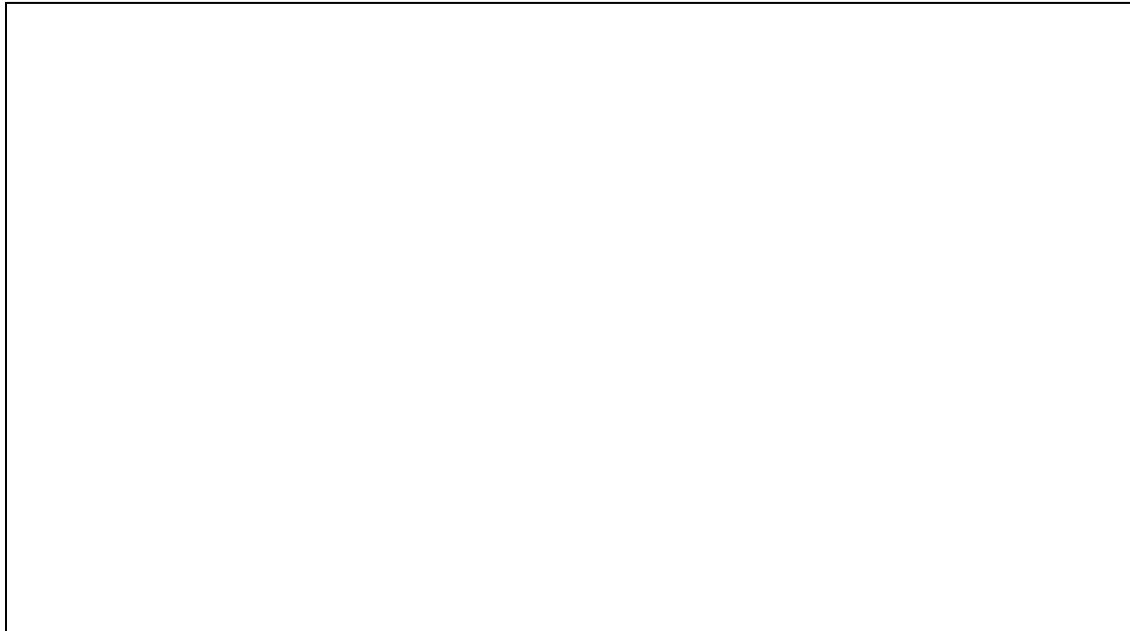
**4. Brief description of the project's location** (nature of location: rocky or dusty, the previous usage of the location):

---

---

**5. Description of the surrounding area:** for a circle of 50m radius from the drainage point, especially locations of environmental sensitivity (utilities, constructions, land usage, water sources) etc.).

(Sketch drawing of the project)



**6. Environmental Impacts & Mitigation Measures \* (Construction & Operation Phase)**  
 (Refer to EMSF Table 5 for examples for different types of subprojects)

<b>Project's Phase</b>	<b>Parameter</b>	<b>Influencing Factor</b>	<b>Mitigation Measure</b>	<b>Institution Responsibility for Execution</b>
<b>Design</b>				
<b>Construction</b>				
<b>Operation</b>				

\* Example for design phase: Parameter: Water, influencing factor: Disposal of wastewater, mitigating measure: design proper wastewater treatment, Responsibility: Consultant

**7. Does the project need monitoring during its operation? (in case there is a probability of polluting water resources, or soil or air) yes No**

**8. In case the answer is yes, mark the monitoring issues applicable to your project:**

- Monitoring water sources
- Monitoring the performance of health care waste disposal
- Monitoring the performance of sanitary drainage system
- Monitoring the cleanness of the building's yard
- Monitoring the planting of trees in the building's yard
- Monitoring access to natural resources by eligible beneficiaries

**Table for Environmental monitoring during subproject implementation**  
 (Refer to EMSF Table 6 for examples for different types of subprojects)

<b>Parameter</b>	<b>Indicator</b>	<b>Location</b>	<b>No. of samples</b>	<b>Intervals</b>	<b>Responsibility</b>

**Annex III**

**FAO GUIDANCE DOCUMENT**

**FOR PEST AND PESTICIDE MANAGEMENT IN FIELD PROJECTS**

This guidance document has been prepared by the FAO Plant Production and Protection Division (AGPM) and replaces a Field Programme Circular from 8/92 on Pesticides Selection and Use in Field Projects.

It provides guidance on pest management and the selection and use of pesticides in FAO projects. Its objective is to reduce reliance on pesticides through promotion of Pest Management (PM) and to avoid that pesticides procured by FAO, or on the advice of FAO, cause harm to people, animals, plants or the environment. As such, it also serves to limit reputational risk and liabilities for FAO.

The outlined rules and procedures apply to all pesticide procurement, and advice on pesticide procurement, within the framework of FAO field projects, including emergency assistance and activities implemented by subcontractors. It involves an established procedure for mandatory clearance of such projects and activities by the Deputy Director AGP, as specified below.

### **Background**

**Pesticides** require special attention because they are toxic and their distribution and use should always involve managing the risks to human health and the environment. Furthermore, inappropriate use of pesticides may reduce agricultural productivity and result in pesticide residue levels that become a constraint to marketability of crops both on domestic and export markets.

Although most countries have pesticide legislation, many may still lack capacity to ensure appropriate selection, management, use and disposal of pesticides. Circumstances in developing countries often make it difficult for farmers to follow recommended practices regarding personal protection, use and cleaning of application equipment, storage of pesticides, and disposal of obsolete pesticides and empty containers.

In many cases, use of pesticides is still unnecessarily high, uneconomic and unsustainable. Available non-chemical techniques and PM approaches often can help reduce pesticide use.

The overall framework for sound pest and pesticide management is provided by the FAO/WHO International Code of Conduct on Pesticide Management<sup>10</sup> and its accompanying technical guidelines.

### **Pest management**

The protection of plants from pests is an integral part of agriculture. The presence of pests does not automatically require control measures, as pest populations are usually under some form of natural control and actual economic damage may be insignificant. When plant protection measures are deemed necessary, available non-chemical pest management techniques should be considered with preference before a decision is taken to use pesticides, even if the cost is higher or specialist inputs are required that make use of non-chemical options more complex.

---

<sup>10</sup> AGPM Website: FAO/WHO International Code of Conduct on Pesticide Management (2014):  
<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/en/>



Proper comparison of pest management strategies requires a full assessment of costs that takes into account additional private costs (e.g. personal protection, storage, health effects on users) and public costs (negative effects on public health and the environment).

Where possible, pest management strategies should be based on an PM approach. Pesticides should only be supplied following a detailed assessment of the actual field situation, the nature and the impact of the pest, and an evaluation of available pest management options.

### **Selection and procurement of pesticides**

If pesticides are deemed to be the best or only available option, then careful and informed consideration should be given to the selection of pesticide products. Factors to be taken into account include efficacy and likelihood of development or presence of resistance by the target organism. Overriding importance should be given to reducing negative effects on human health and the environment.

FAO does not maintain a list of permitted or non-permitted pesticides. However, in line with the provisions of the FAO/WHO International Code of Conduct on Pesticide Management and relevant multilateral environmental agreements that include pesticides, the following list of criteria will need to be met in order for a pesticide to be considered for use in an FAO project:

1. The product should not be subject to the Stockholm Convention on Persistent Organic Pollutants. The list of pesticides concerned can be found at: <http://chm.pops.int>.
2. The product should be registered in the country of use. If specified in the registration decision, the product should be permitted for the crop-pest combination concerned.
3. Users should be able to manage the product within margins of acceptable risk. This means that FAO will not supply pesticides that fall in WHO Hazard Class 1 or GHS Class 1 and 2. Pesticides that fall in WHO Hazard Class 2 or GHS Class 3 can only be provided if less hazardous alternatives are not available and it can be demonstrated that users adhere to the necessary precautionary measures<sup>11</sup>.
4. Preference should be given to products that are less hazardous, more selective and less persistent, and to application methods that are less hazardous, better targeted and requiring less pesticides. Products listed in Annex 3 of the Rotterdam Convention should for instance be avoided.

---

<sup>11</sup> The hazard classification concerns the formulated product. Formulations with a low concentration of active ingredient are less hazardous than formulations with a high concentration of the same active ingredient. The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification ([http://www.who.int/ipcs/publications/pesticides\\_hazard/en/](http://www.who.int/ipcs/publications/pesticides_hazard/en/)) classifies technical products based on acute oral and dermal toxicity. It includes a conversion table that allows determination of the hazard class for the pesticide formulation under consideration. Towards 2008, this list will be replaced by the Globally Harmonized System of Classification and Labelling of Chemicals, which in addition to acute toxicity also takes into consideration chronic health risks and environmental risks ([http://www.unece.org/trans/danger/publi/ghs/ghs\\_welcome\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html)) The term "pesticide formulation" means the combination of various ingredients designed to render the product useful and effective for the purpose claimed; the form of pesticide as purchased by users. The term "active ingredient" means the biologically active part of the pesticide.

Any international procurement of pesticides must abide with the provisions of the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. Pesticides listed in Annex III of the Convention and subject to the PIC procedure, and requirements of the Convention, can be found at the website of the Secretariat of the Rotterdam Convention: <http://www.pic.int/Implementation/Pesticides/tabid/1359/language/en-US/Default.aspx>

### **Pesticide management**

The following requirements apply to all pesticides that are being supplied directly by FAO and to pesticides supplied by others within the framework of FAO projects.

1. Procurement of pesticides should be preceded by a thorough risk assessment, which should lead to adequate measures to reduce health and environmental risks to acceptable levels.
2. Quantities to be provided should be based on an accurate assessment of actual needs in order to avoid over-use or accumulation of stockpiles that may become obsolete. Pesticides should not be provided as fixed components of input packages of projects, credit schemes or emergency assistance.
3. Appropriate application equipment and protective gear should be provided in adequate quantities along with the pesticides, unless it is explicitly confirmed that the recommended equipment and gear is already sufficiently available.
4. Training of users may be required to ensure they are capable of handling the supplied pesticides in a proper and responsible manner.
5. Proper storage of pesticides in accordance with FAO guidelines should be ensured for all supplies.

### **Clearance**

The following documents and activities require clearance from the respective FAO Sub- and/or Regional Coordinator and Plant Protection Officer. Review and clearance of pesticide purchase requests including treated seeds and treatment of stored agricultural products will be carried out in close collaboration with FAO HQ based Pest and Pesticide Management Group (AGPMC) (c/o Senior Officer Pesticide Risk Reduction Group (AGPMC)):

- All orders for pesticides to be procured by FAO, regardless of whether bought through Headquarters order, field project order or local purchase.
- Project documents that envisage procurement of pesticides.
- Terminal reports for projects that involved pesticide supply.

Requests for clearance should be submitted to the respective FAO Sub-/Regional Coordinator and Plant Protection Officer (focal point for pesticides and crop protection). Requests for procurement of pesticides must include a completed Request for Procurement of Pesticides (Annex I: Pesticide check list) for each pesticide.

In addition, clearance must be obtained from the respective FAO Sub-/Regional Coordinator and Plant Protection Officer for any contemplated collaboration with a pesticide company or other entity of

the pesticide industry (e.g.: in designing or implementing training). This in addition to the established general procedure for OPC approval of collaboration with the private sector as described in DGB 2014/14.

### Conditions to be met for purchase and use of pesticides

For the purchase and use of any pesticide product, it must be assured, that the following conditions are met:

- The product must be registered in the *target country* by the respective national authority;
- The company providing the pesticide has to declare that they are observing the **FAO/WHO International Code of Conduct on Pesticide Management**, especially its provisions on labelling<sup>12</sup>, as well as packaging and transport of pesticides;
- Individuals involved in applying the pesticide will be trained in the use of protective equipment, use of the pesticide application equipment and protection of health and the environment from exposure to pesticides;
- The protective equipment supplied to applicators complies with EC, US or appropriate internationally accepted standards;
- Suitable application equipment that permits pesticide applicators to apply the pesticide in the correct dose without causing human and environmental exposure, will be used or provided if it is not available;
- All empty pesticide containers will be triple rinsed and punctured in accordance with FAO guidelines<sup>13</sup>

If pesticides are to be purchased for seed treatment (seed storage chemical or seed treatment), the following conditions must be met:

#### At the seed treatment facility:

- Each pesticide seed treatment product must be cleared by AGP and must be registered in *Countries concerned (importing/exporting country)* by the relevant national authority/authorities.
- The company providing the pesticide has to declare that they are observing the **FAO/WHO International Code of Conduct on Pesticide Management**, especially its provisions on labelling, as well as packaging and transport of pesticides or pesticide-treated seeds.
- Users of seeds treated with pesticides must adhere to the necessary precautionary measures described on the product labels (e.g. wearing a protective mask, goggles and gloves).

---

<sup>12</sup> Reference to Guideline on Good labelling practice for pesticides:

<http://www.fao.org/ag/AGP/AGPP/Pesticid/Code/Download/label.pdf>

<sup>13</sup> Reference to Guideline on Management options of empty pesticide containers :

[http://www.fao.org/fileadmin/templates/agphome/documents/Pests\\_Pesticides/Code/Containers08.pdf](http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/Containers08.pdf)

- The treatment of seeds must be done in an appropriately equipped facility that ensures full containment of the pesticides.
- Users of seed treatment equipment should be provided with suitable application equipment and instructed on calibration, use and cleaning of the equipment.
- Treated seeds must be dyed using an unusual and unpalatable color to discourage consumption.
- All packages containing treated seeds must be clearly marked "*Not for human or animal consumption*" and with the skull and crossbones symbol for poison.

**At the point of use of the treated seeds:**

- Those handling treated seeds should be informed that the seeds are treated with pesticides which can have toxic effects on their health, the health of others and on the environment.
- Handlers should be advised to wear clothes that fully cover their body (long sleeves, long trousers/skirt and closed shoes), and -if not available- be provided with gloves and dust masks and instructed on their use and advised to wash themselves and their clothes after handling the seed.
- Packaging from treated seeds should not be reused for any purpose.

**Further guidance**

Further guidance on all aspects of pesticide distribution, handling and use, is provided by the International Code of Conduct on Pesticide Management, and the Technical Guidelines that have been produced in support of the Code itself (Copies are available from the AGPMC website: <http://www.fao.org/agriculture/crops/core-themes/theme/pests/en/>).

The Plant Production and Protection Department (AGPM) and Pest and Pesticide management group/Pesticide Risk Reduction team (AGPMC) and Sub-, Regional Plant Protection Officers will be available to provide further clarification.

## **Annex IV**

### **Public Consultations Report**

Public consultation outcomes with farmers, local community and the concerned authorities in the four targeted governorates namely "Sana'a, Hadhramout, Hajjah and Shabwah" (June 2014)

#### **1. Objectives**

As part of ESMF study, public consultation involves meeting the stakeholders, to inform them and discuss with them the project design and ESMF contents, and get their feedback. The output of the public consultation outcomes will be considered an important part for the project implementation. Public consultation takes into account the views and opinions of the farmers and local community as well as the concerned bodies in the four targeted governorates (namely Sana'a, Hajjah, Shabwah and Hadhramout. It is assumed that with the experience of beneficiaries on their social, environment and geographical situation, the project activities will be according to their needs and therefore, successful and beneficial. The components that were considered during the public consultation are as follows:

- The list of proposed subprojects was presented to get feedback on its compatibility with the beneficiaries needs or whether there still need any additional subprojects that could be included in the list or need to replace with other subprojects in accordance with the geographical and social conditions at each governorate.
- The ESMP of the projects with positive and negative impacts expected during construction and operation of project activities under the various components were presented to make them aware about such impact which would affect them and their environment as well as the mitigation activities to alleviate such impact.
- Presenting to get to know their opinions on the procedures for mitigating measures against environmental impacts as result from the project activities.
- Identify a mechanism to monitor the ESMP at the project construction and operation in order to ensure compliance with these mitigation measures and find out the community's willingness to participate in the monitoring in cooperation with the concerned authorities.
- Identify the role of women and youth in the project activities to be in line with their needs and the nature of their concerns
- Make sure that the grievances mechanism and resolving complaints are applied when needed during the project implementation and operation
- Identify a common site(s) to publish ESMF study in order to make it available for public as a reference.

## 2. Public Consultation approach

nO.	NAME	SPECIALIZATION	TARGETED GOVERNORATE	POSITION/ tASK
1	Dr. Fadhl Ali Al-Nozaily	Env. Eng.	SAPREP office	TEAM LEADER
2	[Dr. Abdulbari Al-Bourani	Env. Eng.	SAPREP office	MEMBER
3	Munir Al-Jahafi	Environment	SAPREP office	MEMBER
4	Eng.Abdulkarim Al-Sabri	Agriculture Eng.	SAPREP office	MEMBER
5	Eng. Hamoud Al-Rubaidi	Agriculture Eng.	SAPREP office	SAPREP director
6	Eng. Ahmed Al-Moallim	Agriculture Eng.	SAPREP office	Coordinator
7	Abdulrahman Abobakr	SPECIALIST	Hadhramout	SPECIALIST
8	Ali Omar Al-Jareedi	SPECIALIST	Hadhramout	SPECIALIST
9	Rasheed Al-Washali	SPECIALIST	Sana'a	SPECIALIST
10	Khaled Al-Tawqi	SPECIALIST	Sana'a	SPECIALIST
11	Adel Al-Faqih	SPECIALIST	Hajjah	SPECIALIST
12	Isam Ahm. Al-Wazan	SPECIALIST	Hajjah	SPECIALIST
13	Nazim Moh. Fateh	SPECIALIST	Shabwah	SPECIALIST
14	fuad Abdalla Naser	SPECIALIST	Shabwah	SPECIALIST

### 2.2. Preparation Steps for conducting the public consultation in targeted areas:

To prepare for the public consultation, the following steps were followed:

- Important documents to be presented with local community and stakeholders during public consultation were prepared
- Assistant teams were selected to be from the targeted governorates consisting of specialists who have experience in environmental issues and were members of the social study of the same project so that they are familiar with the sites and the people.
- The Assistant teams were trained through a two-day workshop on ESMF with focus on the topics and information that need to be presented with the local community and stakeholders in the targeted governorates (see photos 1).
- A timetable for the implementation of the public consultation activities in the targeted areas was prepared.
- The outcomes documents of the public consultation activities as reports supported with photos, names and signatures of the participants.

### 2.3. Documents of public consultation

The most important materials that have been distributed before started of public consultation with the local communities and concerned authorities related environmental and social issues are as follows:

- Goals and components of the project
- List of proposed subproject activities
- Environmental and social impacts and mitigation measures
- Check list of inspection and control for the environmental and social impacts,

- Summary of the ESMF in Arabic.

2.4. The timetable for implementation of consultation meetings with farmers, local community, and the concerned authorities:

#### **2.4.1. Sana'a Governorate**

Table 1 shows the details time table of public consultation with farmers, local community, and the concerned authorities (a list of names and signatures is in Annex -1).

Table 1 - Timetable for public consultation with farmers, local community, and the concerned authorities in Sana'a governorate

<b>PUBLIC CONSULTATION WITH FARMERS AND LOCAL COMMUNITY IN SANA'A GOVERNORATE</b>				
<b>Nr</b>	<b>Meeting date</b>	<b>Directorate name</b>	<b>Nr of participants</b>	<b>Venue</b>
1	10 June 2014	Bani Matar and Al-Haymah Al-Kharijiah	24	House of Shiekh Yehya Mohamed Al-Musta'a, Matnah, BainMatar
2	12 June 2014	Al-Haymah Al-Dakhliah, Manakhah and Sa'afan	36	House of Ali Mohamed Al-Ghorbani
<b>PUBLIC CONSULTATION WITH CONCERNED AUTHORITIES</b>				
<b>Nr</b>	<b>the concerned body</b>	<b>Meeting date</b>	<b>Responsible met</b>	
1	National Irrigation Program	13 June 2014	Eng. Khaled Al-Selwi, The Director General	
2	Water and Environment office of Sana'a Gov.	13 June 2014	Mujeeb Al-Yamani	
3	General Authority for Research and agriculture extension	13 June 2014	Eng. Ahmed Al-Moallem, The Director General	
4	Agriculture and Irrigation office in Sana'a	14 June 2014	Eng. Ali Al-Qiary	
5	Environmental Protection Authority	14 June 2014	Murad AbdulAziz Sultatn; Env. Evaluation office	

#### **2.4.2. Hadhramout Governorate**

Table 2 shows the details time table of public consultation with farmers, local community, and the concerned authorities (a list of names and signatures is in Annex -1).

Table (2) Timetable for public consultation with farmers, local community, and the concerned authorities in Hadhramout governorate

<b>PUBLIC CONSULTATION WITH FARMERS AND LOCAL COMMUNITY IN HADHRAMOUT GOVERNORATE</b>				
No.	Meeting Date	Directorate	No. of Participants	Venue
1	5 June 2014	Al-Qitn	14	Agriculture and Irrigation office at Al-Qitn
2	8 June 2014	Shibam	13	House AbdulHakim Bin AbdulAziz at Al-Qarah
3	8 June 2014	Saiown	22	Boor School for basic education at Saiown
4	9 June 2014	Al-Sawm	18	Agriculture and Irrigation office at Al-Sawm
5	9 June 2014	Tarim	14	Agriculture and Irrigation office at Tarim
<b>PUBLIC CONSULTATION WITH CONCERNED AUTHORITIES</b>				
No.	Concerned authority		Meeting date	Responsible met
1	Agriculture and Irrigation office for Saiown and Al-Wadi		1 June 2014	Abobakr Abdalla Eideed Omar Salem Ba Mohaimood
2	Local council for Al-Wadi and Sahra'a		2 June 2014	Salem Al-Menhali
3	Agriculture research and extension office at Saiown		3 June 2014	Salem Mohamed Al-Sakkaf
4	EPA office		4 June 2014	Husien Awadh bin Taleb

### **2.4.3. Hajjah Governorate**

Table 3 shows the details time table of public consultation with the local community, farmers and the concerned authorities (a list of names and signatures is the annex -1).

Table 3 - Timetable for public consultation with farmers, local community, and the concerned authorities in Hajjah governorate

<b>PUBLIC CONSULTATION WITH FARMERS AND LOCAL COMMUNITY IN HAJJAH GOVERNORATE</b>				
No	Meeting date	Directorate	No. of Participants	Venue
1	9/6/2014	Washhah	30	School Al-Mesial at Dhaen
2	10/6/2014	Qarah	30	Scholl Al-Hadabah at Bani Sowair
3	11/6/2014	Kushar	30	House sheikh Hasan Al-Qarsoos at Aahim
4	12/6/2014	Kuhlan Al-Sharaf	25	Hous Ali Naser Al-Maazi at Al-Darb village, Bait Al-Maazi village, Bani Mahdi Ozlah

<b>Public consultation with concerned authorities</b>			
No.	Concerned Authority	Meeting date	Responsible Met
1	Agriculture and Irrigation office	Sunday 15/6/2014	Abdallah Rajeh
2	NIP Field Unit	Sunday 15/6/2014	Eng. Yehya Al-Qudami
3	NWRA office	Monday 16/6/2014	Eng. Jamal Al-Dowah
4	EPA at Hajjah	Monday 16/6/2014	Eng. Ali Al-Dhelea



#### **2.4.4. Shabwah Governorate:**

Table 4 shows the details time table of public consultation with farmers, local community, and the concerned authorities (a list of names and signatures is in Annex -1).

Table 4 - Timetable for public consultation with farmers, local community, and the concerned authorities in Shabwah governorate

<b>PUBLIC CONSULTATION WITH FARMERS AND LOCAL COMMUNITY IN SHABWAH GOVERNORATE</b>				
<b>No</b>	<b>Meeting date</b>	<b>Directorate</b>	<b>No. of Participants</b>	<b>Venue</b>
1	12 June 2014	Hateeb	17	House Secretary General of local council
2	13 June 2014	Nisab	10	Agriculture and Irrigation office
3	14 June 2014	Marakhah Al-Olya'a	11	school Marakhah Al-Olya'a
4	15 June 2014	Marakhah Al-Sufila'a	12	School Al-Garasha, Markhah Al-Sofla'a
<b>PUBLIC CONSULTATION WITH CONCERNED AUTHORITIES</b>				
<b>No.</b>	<b>Concerned Authority</b>	<b>Meeting date</b>	<b>Responsible Met</b>	
1	PA office at Shabwah	15 June 2014	Naif Ba-Oom-Director General	
2	Agriculture and Irrigation office	15 June 2014	Fahd Salem Al-Ateeqi, Director General	
3	Field Unit of NIP	16 June 2014	Eng. Moh. Saleh	
4	NWRA office	17 June 2014	Naser Ba-Oom	

2.5. Implementation of public consultation in the governorates: In order to prepare for public consultation, the following steps were followed:

##### 2.5.1. Public consultation with farmers and local community

According to the timetable, the environmental team communicated with farmers and local community and called target groups in the districts of the four governorates as shown in Tables 1,2,3,4 informing them for public consultation timing and venue. Announcement was distributed one week before the public consultation through the local media and by distribution of posters in public places.

Documents were also distributed one week before so that the people read and prepare their feedback.

The Environmental team invited various categories of stakeholders to attend the public consultation as follows:

- Representatives of active civil society organizations;
- Representatives from the private sector;
- Representatives from the local council;
- Representatives of the target farmers, including young people and woman
- Representatives of groups affected by the project;
- Others (academics, engineers, teachers, lawyers, etc.),

During public consultation, the environmental team presented the list of project activities and the ESMP (Table 7 of the ESMF) and then the following questions were forwarded to the public:

Q1. What is your opinion about the proposed subproject activities?

Q2. Do you think that the subproject activities are appropriate for your geological, social and environmental situation?

Q3. What is your opinion about the ESMP monitoring?

Q4. Are you interested in participating in the monitoring?

Q5. What is your opinion about the checklist content and its application during the construction of the subproject?

Q6. What is your opinion about the PM as part of ESMF?

During the public consultation, every environmental team has documented the events of the meetings with answers to the questions, attendees were registered with their photos and signatures (Annex 1),

Analyzing the participants' views, perspectives and come up with recommendations of the public consultation.

#### 2.5.2. Public consultation with the concerned authorities

In the framework of public consultation, with the concerned authorities, the environmental team have informed the concerned authorities one week before the meeting and handed them a copy of the documents mentioned earlier. According to the timetables presented earlier (Tables 1,2,3,4) the meetings were held between the environmental team and the representatives of the concerned organizations. During the meeting, the environmental team first briefed the different organization representatives about the outcomes of the public consultation with the farmers and the local council, then the following questions were forwarded:

- What is your opinion about the different subprojects?
- What is your opinion about the ESMP of the ESMF?
- Are the Mitigation measure for the expected environmental impact are sufficient?
- How will you cooperate by participating with the local authority and users associations in ESMP implementation?
- What are the opinions of youth and women?
- What is the grievance mechanism?
- What is the public disclosure site for the ESMF study?

### 3. Outcomes of Public Consultation

#### 3.1. Outcome public consultation with farmers and local community

##### 3.1.1. Results of presenting list of subprojects

In all public consultation meetings, the public raised enquiries for irrigation projects but after clarification by the environmental team members that the SAPREP project does not focus on large-scale projects for irrigation or dams or canal rehabilitation ... etc. Then by focusing on the proposed

subprojects listed in the ESMF. The local community unanimously approved the projects included in the list and confirmed their willingness to participate in some projects, although others considered the agriculture society is poor so the participation could be in kind but not in cash. They considered these projects as requirements and will contribute to solve many agricultural problems prevailing in the four targeted governorates. The participants approved most of the agricultural projects with some modification in each Governorate as will be elaborated in the next sections. At the same time, all participants agree fully on the income projects such as pastures, honey bees, livestock and the production of new species with high productivity.

Regarding to ESMP, the following outcome discussion and opinions are achieved:

### 3.1.2. Results of presenting the environmental management plan and mitigation measures

In each Governorate, the environmental team explained the positive impacts of the project activities as well as expected negative impacts of the projects on environmental resulting from the construction and operation of project activities (Table 8 of the ESMF). The participants agreed that the mitigation measures proposed by the environmental study are sufficient.

Monitoring of the mitigation measures of an environmental management plan during project construction and operation and ensure compliance with procedures mitigation concluded many opinions and suggestions during the public consultation in the four targeted governorates and concluded to be shared among all the representative of the local community and a representative of the relevant authorities and representative of the project.

### 3.2. Outcomes of public consultation with the concerned authorities

The results of the conducted public consultation with concerned authorities were positive, and the representatives of all authorities of all targeted governorates have confirmed their willingness to participate in the implementation of the environmental management plan and mitigation measures for environmental impacts expected during the construction and operation of the project. They also provide their scientific expertise, for different geographical situations and employ their relationship with the various parties in the implementation of project activities. The most critical issue raised by the EPA is that they need to receive ESIA for each project in order to approve it for implementation (a letter from Hadhramout governorate is shown in Fig. 1). It is understood that SFD has established coordination mechanisms with EPA, which could be applied to SAPREP. EPA may also provide approval for SAPRED subprojects by 'type', or 'collectively' for several lists of small projects.



Fig. 1. Letter from Hadhramout EPA

The letter from EPA – Hadhramout insisting on conducting ESIA on each project for approval.

The following specific outcomes of public consultations in each governorate as the following:

**Sana'a Governorate:**

During the public consultation meetings at Sana'a Gov., the farmers and the local community and the concerned authority requested to add the following activities (Photos 2)

- Greenhouse subprojects
- Old indigenous rainwater harvesting systems such as cisterns
- Combating the red Barbary fig as a non-edible because it is harmful to human, animals and birds
- Protecting land from degradation
- Introducing new drought resistant species
- Introducing new fruits adapted to climate change

Regarding applying ESMP, the concerns of the participants at Al-Haimah Al-Dhakhiliah and Al-Haimah Al-Kharijiah directorates on the impact of using pesticides and chemicals but with applying the pest management (PM), the impact will be mitigated, provided that the PM will be applied by the whole beneficiaries and supported by the government and agricultural organizations in order to protect the useful insects to keep balance with the harmful insects.

Regarding to the public consultation with the concerned authorities in Sana'a governorate, they agree to support implementation of ESMP with awareness and mobilization program of PM to the local community.

**Hadhramout Governorate:**

During the public consultation meetings at Hadhramout Gov., the farmers and the local community and the concerned authority requested to add the following activities:

- Greenhouse for improving crop production
- Rainwater harvesting, by means of introducing the indigenous old local technology called "Al-Dhemr and Al-Quood" structures.
- Replacing the Terraces by protection of wadi banks.
- Combat of Al-Saisaban and Al-Hindro trees as part of PM
- Replacing the rainwater harvesting from roofs with introducing the old indigenous structures such as cisterns and leveling and protecting the agricultural fields.
- Introducing the pastures and Honey-Bees
- Supporting the irrigation system by pipes and networks
- Supporting the use of solar energy to replace the use of Diesel as a mean of Environmental protection.
- Conservation and maintaining the flood irrigation system.
- Supporting Agriculture extension
- Land rehabilitation and protection from degradation.
- Introducing of typical Nurseries
- Establishment of Corrals for livestock breeding,
- Supporting the provision of agricultural machinery to remote areas,
- Taking Care of Palms
- Reuse of gray water from mosques and other institutions

Regarding to the ESMF, people in all directories and especially at Tarim and Al-Saom directorates insisted in contributing to the monitoring and they were mostly concern about the quick implementation of the project as it is badly needed.

Production of seeds suitable for the desert region to resist the drought and desertification with contribution into mobilization and awareness of applying PMP and ESMP monitoring.

#### **Hajjah Governorate:**

During the public consultation meetings at Hajjah Gov., the farmers and the local community and the concerned authority requested to add the following activities:

- Constructing roof covers for the cisterns to avoid polluting the harvesting water as well to protect falling of children and animals.
- Good implementation of terraces with stones to protect the upstream terraces
- Replacing Qat with introducing alternative cash crops.
- Introduce more projects on cisterns construction
- Land protection from erosion by means of introducing flood flow reducing structure.
- The introduction of drought-tolerant varieties of fruit, vegetables and fodder.

Regarding to the ESMF, the concerns was regarding applying PMP specifically Hajjah Gov. is the most gov. using pesticides for Qat production. They considered speeding of the subprojects implementation as they are badly needed. They considered the awareness to protect environment as part of agriculture extension in order to become a habit, they also insisted to employ local workers as well as covering the cisterns and introducing taps to the drinking water reservoir. As far as the monitoring concerns, the participants suggested introducing the ESMF implementation as a component in the bill of quantities.

With respect to the public consultation with the concerned authorities, the concern was in applying the mitigation measures during the implementation, conducting awareness program, apply PM with replacing Qat with another cash crops. Their concerns were during spraying of pesticides nearby beehives and chicken farms, applying environmental safety standards, the optimal use of agricultural land and produce seeds adopted to the climatic conditions of the targeted areas.

### **Shabwah Governorate**

During the public consultation meetings at Shabwah Gov., the farmers and the local community and the concerned authority requested to add the following activities:

Note: Due to the security reasons, the team was not allowed to take photos with the concerned authorities representatives. However, if it is important, we can arrange for photos in a later time.

- Supporting agricultural inputs of seeds, fertilizers, trees and cattle,
- Providing and facilitating loans,
- Supporting and activating the agricultural and water users' associations,
- Emphasis on livestock development and manufacture of feed and pasture improvement,
- Replacement terraced projects (as it is not applicable for Shabwah) by wadi banks and fields protection
- Replace the rainwater harvesting from roofs (as it is not applicable in Shabwah) with cisterns and reservoirs and the protection of the fields
- Concentrate on pastures and honey bees' projects
- Concentrate on small income-generating projects.

The most concern about ESMF was in the impact of the floods on the drought and desertification of the agricultural fields. The participants emphasized on participation with the monitoring committee, employing the farmers and contractors from the concerned directorate in Shabwah when implementation of the projects, decrease the participation by the committee as they poor; equal distribution of the projects for all directorates in Shabwah.

Regarding the public consultations with the concerned authorities, the participants emphasized on ESMP implementation, with effective coordination. Combat desertification, resist the changes in the climate, and rehabilitate agricultural lands.

Newer methods in breeding cattle, introduce of veterinaries centers, the introduction of modern technologies in the pasture and water consumption, encourage small enterprises, mobilize the local community to participate in the implementation of the environmental management plan and mitigation measures.

### **3.3. Resolving disputes and Grievance mechanism**

As part of public consultation is to identify how the disputes are resolved and grievance mechanisms in the four targeted governorates, during the construction and operation of the project which might be implemented as part of the ESMP mentioned in the ESMF.

The different types of disputes are expected as follows:

- Water rights conflict;

- Operation and maintenance fees;
- Community participation as cash or in kind;
- Impact on pastures;
- aggression on improved crops by livestock and individuals;
- Dispute about the distribution of outcomes after improvement of the agricultural situation.
- Non-compliance with the environmental standards.

For the mechanism of resolving disputes in the targeted areas, the cooperative associations in various specialties will resolve such conflict. In case of non-acceptance of dissolution by the association, the problem will be forwarded to the local council or identify a person within the local council to monitor the disputes. In extreme cases the problem can be resorted to the judiciary. Generally, the disputed are resolved by appealing to tribal law (Sheikh, Aqil,) with regard to disputes over non-compliance with environmental standards, the offices of agricultural and environmental authorities are responsible for solving this kind of problem.

#### **Establishment of SAPREP Grievance mechanism**

An adequate grievance mechanism will be established to ensure beneficiaries may communicate their concerns due to subproject activities either with the relevant focal point at the local level or with FAO/SFD representatives at the central level and it is required this mechanism be publicized at the local level. Program and project managers will have the overall responsibility to address concerns brought to the attention of the focal point regarding any environmental and/or social impacts due to subproject activities. Complaints received by the implementing agency shall be recorded and documented in the subproject file and the subproject progress report including the number and type of complaints and the results of their resolution.

#### **Social Accountability**

Social accountability will be taken into consideration through: (i) the ability of beneficiaries to voice complaints and provide feedback through well-established GRMs; (ii) dissemination of information about the resumption of the SAPREP to the intended beneficiaries' relevant communities; (iii) independent verification through the third-party monitoring agency; and (iv) the FAOs/SFD field monitoring activities.

#### **3.4. The role of Youth and Women:**

During the Public consultation with the farmers and local community, the youth and women confirmed the importance of implementation of the ESMP as part of ESMF. They also supported the proposed the subprojects with the following suggestions:

The projects which are of interest to by women are livestock production, Beekeeping and Honey production, poultry production, house gardens, craft industries, rainwater harvesting, cheese industry. The projects which are interested by youth are: organic fertilizer manufacturing units, dates planting and production, Production of new seeds species, cheese industry, animal husbandry, plant nurseries, mechanical blowing

### **3.5. Public disclosure of the ESMF:**

During community consultations, in order to increase the environmental awareness of the environmental and social safeguards, the community has agreed to locate the public disclosure at the following sites:

- websites of the water sector represented by the Ministries of Agriculture, Water and Environment, the project website, official newspapers and specialized magazines (agricultural, water, environmental, etc.), as posters at official places where members of these groups are frequently attending, field agriculture offices in targeted areas, or during the outreach programs in the field days and public events.

Recommendations: The most important issue can be summarized as follows:

- Introducing the additional projects and alternatives proposed by the beneficiaries within the subprojects.
- Identify the roles of the concerned authorities to ensure the monitoring of ESMP during construction and implementation of each subproject; such monitoring should be shared between the project and beneficiaries.
- Empowerment of youth and women to apply their role in the implementation of project activities
- To apply the mechanism of the local community in the follow-up of complaints and grievances
- To establish a specialized association to be responsible for resolving any disputes that may arise among the beneficiaries.
- Quick implementation of the project in view of the need by the beneficiaries'.



## Annex V

### Brief of the Current Situation in Yemen

The Social Assessment produced in 2014 and its recommendations remain valid, despite the ongoing conflict. This note provides an update, based on recent developments in Yemen.

In March 2015, the conflict in Yemen entered a new phase, with the start of the military campaign carried out by the Coalition forces. Two years later, over 7,500 Yemenis have been killed, more than 35,000 have been injured and over 3 million have been displaced. In the absence of a political agreement, ordinary Yemenis, the very ones that the warring parties claim to fight for, bear the brunt of the conflict.

With an alarming 18.8 million people - over two thirds of the population - in need of some kind of assistance or protection to meet their basic needs, Yemen is one of the worst humanitarian crises of our time.

Of particular concern is the rapidly deteriorating food security situation in the country, with 60 per cent of the population - 17 million people - food insecure. This means that Yemenis are not able to feed themselves adequately and are frequently forced to miss meals and eat food of poor nutritional value. More worrying, because of the disruption and blocking of import mechanisms, the country is now facing the risk of famine in 2017.

Already by far the poorest country in the region before the conflict, Yemen's GDP per capita is estimated to have contracted by about 40 percent. The salaries and pensions of 1.5 million civil servants have been sporadically paid in the past months. This is affecting close to one quarter of the Yemeni population. An estimated eight million Yemenis have lost their livelihoods or are living in communities with minimal or no basic services. The fishing and agriculture sectors' production capacity have been reduced by 65 and 50 per cent respectively and over 70 per cent of small and medium enterprises have been forced to lay off half of their workforce.

As a result of the conflict, social service provision has nearly ceased. The situation is particularly alarming in the health sector. An estimated 14.8 million people lack access to basic healthcare, including 8.8 million living in severely under-served areas. This has seen thousands of Yemenis dying from preventable diseases, which shockingly includes one child every ten minutes.

Alarmingly, the consequences of the conflict are affecting the wellbeing of coming generations of Yemenis. With over two million children acutely malnourished and at least two million children out of school, their future has already been impacted in terms of health and social and economic opportunities.

The following key highlights provide further details with regards to the current food security situation:

- **Food security in Yemen has deteriorated further since the last Integrated Food Security Phase Classification (IPC) analysis** conducted in June 2016. From the 17 million food insecure people, approximately 10.2 million people are in IPC Phase 3 'crisis' and 6.8 million people are in IPC Phase 4 'emergency'. Nationally, the population under Emergency (IPC Phase 4) and Crisis (IPC Phase 3) has increased by 20% compared to 2016.

- **Conflict and civil insecurity are the main drivers of food insecurity** with devastating effects on livelihoods and the nutrition situation.
- **Displacement:** As of January 2017, over 2 million individuals were displaced across 21 out of the 22 governorates mainly due to the conflict. 85 percent of the conflict related IDPs come from Taiz, Hajjah, Sana'a City, Saada and Sana'a Governorates. In February 2017, the Task Force on Population Movements reported an additional 44,226 IDPs, with the majority (31,860 individuals) from Taiz Governorate (Al Mokha and Dhubab districts), followed by Al Hodaidah Governorate with 9,162 people.
- **Livelihoods and market disruptions:** The widespread civil insecurity has affected both urban and rural livelihoods resulting in protracted and continuous worsening of the food security situation. Restrictions and disruptions of commercial and humanitarian imports, mass displacements, loss of income, fuel scarcity and high prices, disrupted market systems, high food prices and the collapse of public services are aggravating the already fragile socio-economic context. Port infrastructure, essential for ensuring food imports and humanitarian assistance, are seriously threatened by the worsening conflict. Cultivated area and production in 2016 decreased by 38 percent compared to the pre-crisis period, affecting food availability and household stocks. Similarly, the majority of fishermen lost their fishing assets such as boats, nets and fishing gear and essential fishing infrastructure has been damaged.
- **Economic crisis:** The economic status of 78 percent households in Yemen is currently worse than in the pre-crisis period. This is mainly due to public budget deficit, which has led to a reduction in government expenditures, delayed or total unavailability of salaries for government employees since September 2016, collapse of the social protection system, liquidity crunch of the local currency, depreciation of the Yemeni Riyal against the US Dollar and depletion of central bank reserves. The economic meltdown aggravated and affected all dimensions of food security, especially food availability and access.
- **Acute malnutrition is a major outcome of the severe food insecurity** and is at alarming levels. Malnutrition has been a serious problem in Yemen for a long time, especially chronic malnutrition (stunting). However, the prevalence of acute malnutrition (wasting) has been rising in recent years, peaking in the last three years. Out of 22 governorates of Yemen, four governorates (Abyan, Taiz, Al Hodaidah, and Hadramout) have Global Acute Malnutrition (GAM) prevalence above the WHO emergency threshold ( $\geq 15\%$ ). Seven and eight governorates have GAM prevalence at critical levels (10-14.9%) and serious levels (5-9.9%), respectively.
- **Humanitarian assistance to most affected governorates did not fully cover the targeted beneficiaries in 2016.** Main challenges faced are; lack of funding, the ongoing conflict, restricted movements of humanitarian aid workers and procurement and transportation of lifesaving supplies. Going forward, unconditional humanitarian access must be facilitated by all parties for all humanitarian actors to reach the most affected populations and scaled up to reach the demands of the growing population in need.

Agriculture is critical for sustaining the livelihoods of people in Yemen. While other economic activities have stalled or stopped altogether, agriculture remains. Its huge potential in the areas selected by the SAPREP justifies the whole rationale behind the project.