

**HASHEMITE KINGDOM OF JORDAN**

**EMERGENCY SERVICES AND SOCIAL RESILIENCE PROJECT  
(JESSRP)**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK  
(ESMF)**

**Revised January 9, 2014**

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## ACRONYMS

ARAP	Abbreviated Resettlement Action Plan
BMPs	Best Management Practices
CBOs	Civil Society Organizations
CITES	Convention on International Trade in Endangered Species
CSOs	Community Based Organizations
CVDB	Community and Villages Development Bank
EA	Environmental Assessment
EC	European Commission
EHS	Environmental Health and Safety guidelines
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPL	Environmental Protection Law
ESMF	Environmental and Social Management Framework
GAM	Greater Amman Municipality
HIES	Household Income and Expenditure Survey
HKoJ	Hashemite Kingdom of Jordan
JESSRP	Jordan Emergency Services and Social Resilience Project
IPM	Integrated Pest Management
ISC	Inter-Sectoral Committee
KPIs	Key Performance Indicators
LDU	Local Development Units
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MOE	Ministry of Environment
MOH	Ministry of Health
MOMA	Ministry of Municipal Affairs
MOPIC	Ministry of Planning and International Cooperation
MOI	Ministry of Tourism and Antiquities
MOTA	Ministry of Interior
MOU	Memorandum of Understanding
MWI	Ministry of Water and Irrigation
MST	Municipal Services Team
NGOs	Non-Governmental Organizations
OM	Operations Manual
OP	Operational Policy
PAD	Project Appraisal Document
PCR	Physical and Cultural Resources
PIF	Project Information Form
PMP	Pest Management Plan
PMU	Project Management Unit
RAPs	Resettlement Action Plans
RLDP	Regional and Local Development Project
ROW	Right of Way
RPF	Resettlement Policy Framework
SC	Steering Committee
TEGs	Technical Environmental Guidelines
TORs	Terms of References

TRC	Technical Review Committee
UNDP	United Nations Development Program
VCNA	Vector Control Needs Assessment
WB	World Bank
WHO	World Health Organization
YWC	Yarmouk Water Company

## EXECUTIVE SUMMARY

More than two years of violent conflict in Syria has resulted in massive movements of people within Syria, as well as into neighboring countries. UNHCR estimates that by the end of 2013, the number of refugees in Jordan could surpass 650,000, constituting more than 10 percent of the population. While some of the Syrians are living in camps, the majority — as much as 70 percent — are staying in urban centers, where they share space, resources and services with their Jordanian hosts. This influx has rapidly expanded the population of many towns. The additional pressures are undermining the coping mechanisms of public institutions, communities, households and individuals. The rising influx of Syrian refugees has increased the burden on public service provision, worsened already stretched public finances, and is also having an impact on Jordanians working in the informal labor market, both in terms of competition for jobs and reduction of wages. Overall, the conflict across Jordan's border continues to pose significant downside risks to growth, stability and public wellbeing in Jordan.

The Hashemite Kingdom of Jordan will receive a Grant from multiple donors, including from the World Bank, to finance the activities of the Jordan Emergency Services and Social Resilience Project (JESSRP). The project aims to promote broader crisis resilience through support to participating municipalities to provide additional services based on local needs, the strengthening of community resilience through local economic development and community engagement, and the strengthening of institutional resilience to crises through development of emergency preparedness systems.

The project development objective is to help Jordanian municipalities and host communities address the immediate service delivery impacts of Syrian refugee inflows and strengthen municipal capacity to support local economic development.

The Project consists of two components:

*Component 1: Municipal Grants (US\$50.00 million):* This component will provide direct Municipal Grants to municipalities that are hosting the largest concentration of Syrians to finance additional public services and programs to help improve living conditions, reduce communal tensions and enhance social cohesion. These services would include those that are directly within the municipal competence (e.g., solid waste management, rehabilitation of roads, street lighting, pest control, recreational facilities, local economic development and livelihoods, etc.), as well as certain services that can be contracted out by municipalities to other service providers (e.g., water, wastewater, sanitation, etc.). The municipalities will initially focus on the most pressing service delivery priorities of their citizens. In parallel, they will work with governorates, communities, the private sector, Community-based Organizations (CBOs) and Non-Governmental Organization (NGOs), including those working for the inclusion of women. Such projects could include markets, labor intensive works, or investments leveraging some of the many other livelihood, entrepreneurship, or MSME programs supported by other partners. It could also include investments in social infrastructure, such as women's and children's centers, soccer fields, parks, or other communal infrastructure, activities and services. Grants will also allow municipalities to support community development programs and services amongst vulnerable communities, including women and children. The municipalities would employ a participatory model, involving vulnerable communities and social groups - women, the poor or the conflict affected – to help build strong local ownership, amplify their voice and inclusion and strengthen community-based coping mechanisms.

*Component 2: Institutional Development and Project Management (US\$3.00 million)* will finance two subcomponents: (i) Subcomponent 2A - technical assistance to participating municipalities to plan, implement and manage activities funded by the Municipal Grant, as well as project management support to implementing agencies to coordinate, manage and oversee the Project; and (ii) Subcomponent 2B - capacity building of key Government agencies and vulnerable communities in emergency preparedness, and risk planning, management and financing. The United Nations Development Program (UNDP), which is currently working with host communities in Northern Governorates, will provide technical assistance to municipalities in year one to carry out consultations with communities, undertake needs assessment, establish grievance redress mechanisms appropriate to local socio-cultural context to ensure accessibility also by marginal and more vulnerable populations, and strengthen project management and monitoring capabilities. This component would also support strategic communications with the aim of strengthening crises resilience and emergency preparedness among key stakeholders.

Jordan has an environment protection law (EPL) no. 52/2006, which is implemented through its Environmental Impact Assessment (EIA) regulations no. 37/2006 and its five annexes. These require that all projects to conduct an EIA and prepare an EIA report prior to construction. The approval of an EIA is a pre-requisite for any subsequent licenses or permits by any or all other relevant authorities that may be required prior to construction. The Ministry of Environment (MoEnv), through its Department of Licensing and Guidance (which also includes the EIA section) arranges for screening, control and follow up on the EIA process and its implementation. As per the EIA law, all development projects, regardless of EIA classification, must adhere to the air emission, water, wastewater reuse; industrial and municipal discharge Jordanian standards.

This document presents an Environmental and Social Management Framework (ESMF) for the proposed Jordan Emergency Services and Social Resilience project (JESSRP). The ESMF ensures that the project activities are compliant with the relevant requirements of national policies, regulations and legislations as well as the World Bank relevant Operational Policies and Procedures (OPs). At present, the details of the subprojects and investments are not yet fully determined, therefore, the ESMF is the appropriate safeguard instrument to be prepared prior to project appraisal. The objective of this ESMF is to provide an environmental and social management framework for the design and implementation of the JESSRP and provides a practical processing tool during project formulation, design, planning, implementation, and monitoring to ensure that environment and social aspects are duly considered. The ESMF describes the steps involved in identifying and mitigating the potential environmental and social impacts of proposed investments, summarizes institutional arrangements for the implementation of mitigation measures, the monitoring arrangements, and the capacity building needs for effective implementation of recommendations outlined in the document.

The ESMF entails an Environmental and Social Screening process which allows subprojects to be classified according to their potential impacts and appropriate mitigation/rehabilitation measures required. The initial safeguards screening form for all proposed civil works subproject level activities is catered to assess for the application of the Bank Operational Policies on physical cultural resources and involuntary land acquisition and resettlement. While the Project is expected to only operate on public/state lands, the screening will assist in risk management, especially related to the presence of squatter or other encumbrances on state lands. The screening form also caters for “chance finds” relating to the Physical and Cultural Resources Policy of the Bank. The initial screening form will notscreen for the possible application of OP 4.04 Natural Habitats, OP 4.10 Indigenous Peoples, OP 4.36 Forests, OP 4.37 Safety of Dams, OP 7.50 Projects on International Waterways, or OP 7.60 Projects in Disputed Areas. Sub-project locations are all within existing municipal jurisdictions; these jurisdictions are highly-urbanized areas and natural habitats, forests, dams, etc. do not exist within the geographical range of possible sub-project locations.

The screening of subproject will result in the prospective subproject being determined as one of the below general modes of safeguards management:

- a. Important impact (Category "A" according to the World Bank (WB) and Category "1" according to the Government of Jordan). This class of projects will be excluded from financing as ineligible project;
- b. Above-average impact (new construction and/or expansion onto new site), This corresponds to World Bank category "B" and Category "2" according to Government of Jordan, a site-specific EMP will be developed, and the tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses;
- c. Average impact (civil-work rehabilitation on existing site), this corresponds to World Bank Category "B" and Category "2" according to Jordan Government, the relevant Technical Environmental Guidelines (TEG) will be selected and applied and a simplified "EMP" will be developed, and the tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses;
- d. Negligible or absent impact (Category "C" according to the WB and Category "3" according to the Government of Jordan): no impact assessment is required;
- e. Goods-only procurement of everything except pesticides/rodenticides, in which adherence with a goods-specific TEG is required;
- f. Good-only procurement of chemicals (pesticides/rodenticides) for chemical control, in which case the JESSRP Pest Management Plan (PMP) is to be used as primary document, along with a pesticide-specific TEG;
- g. Any site-specific civil works ((b.) or (c.) above) which at the time of design or construction engages OP 4.12 Involuntary Resettlement, in which case both the process for (b.) or (c.) plus the Resettlement Policy Framework (RPF) will be applied.

Eligible activities at the subproject level are not anticipated to trigger World Bank Operational Policy OP 4.12, which covers impacts mainly related to the relocation of households or communities; acquisition of private owned lands (temporarily or otherwise); adverse impacts on livelihoods including those that may occur through restriction of access to resources. It is anticipated that that subproject level activities will be carried out on public/state owned lands. However, the Project has prepared a RPF to address unexpected issues that might arise even in the context of state owned lands (i.e., presence of squatters or other encumbrances). This RPF will serve as a precautionary measure in the unlikely situation that squatters and/or encumbrances are found on government land used for the Project. In such events, RAPs will be prepared to address any adverse impacts that may arise as per OP 4.12. For JESSRP, the RPF is prepared as a separate document.

An inter-ministerial Steering Committee (SC) will provide strategic direction, overall coordination, and oversight at the national level. It will be headed by the implementing agency, the Ministry of Municipal Affairs (MOMA), and include key ministries and agencies such as Ministry of Planning and International Cooperation (MOPIC), Ministry of Interior (MOI), Ministry of Water and Irrigation (MWI). MOMA will be responsible for overall Project coordination, management and reporting, and for implementing

Subcomponent 2B. This will include project monitoring, financial management (FM), audits, safeguards compliance according to the ESMF provisions, and reporting to the Government and donors.

The Ministry of Water and Irrigation (MWI) through Yarmouk Water Company (YWC) will be responsible for supporting municipalities in identifying short term priorities and implementing subprojects in water, wastewater and sanitation (e.g., rehabilitation of wells, wastewater container units, household connections to wastewater networks, urgent supplies and equipment, etc.). The municipalities will be responsible for the identification and delivery of priority infrastructure and services to be financed through the Project, in close collaboration with the beneficiary communities.

During project preparation phase, the positive list of eligible projects was identified in consultation with municipalities and local communities and compiled by an identification-phase consultant. In addition, in-depth meetings and/or focus groups discussion were conducted with the elected municipal members and technical staff to confirm the initial list of eligible projects. Public consultations were carried out by the Ministry of Municipal Affairs together with the Mayors of Irbid, Al-Mafraq, and Sahel Horan Municipalities from November 18-20, 2013 to inform stakeholders of the project's launch and to ensure adequate information was made available to the communities regarding the specifics of the project including the types of activities expected to be financed. Over 200 persons from beneficiary communities participated in the consultations sessions including women's organizations, youth and sports clubs, civil society organizations (CSOs), farmers and academics.

The beneficiary communities will contribute to the selection of priority activities during the implementation phase through participatory processes, inclusive of women, youth and groups that are considered vulnerable. Local social organizations (NGOs, CBOs, charities, etc.) will be expected to facilitate the process. The local communities will also be consulted throughout project implementation and will be able to track progress and results through the publication and dissemination of relevant project information. During the EMP and RAP preparation process for sub-projects, the grantee municipalities will consult with project-affected groups and local nongovernmental organizations (NGOs) about the Project's environmental and social aspects and takes their views into account. For meaningful consultations between the grantee and project-affected groups, the grantee provides and discloses relevant material (e.g. the ESMF and the RPF) in a timely manner and in a form and language that are understandable to the affected groups. In addition, the grantee must consult with such groups throughout project implementation as necessary to address safeguards-related issues that affect them.

The cost associated with implementing the ESMF is accommodated by the project and estimated at around US\$219,400. First, the project will finance as part of the project management fee the cost of a full-time environmental specialist to join the operations team as well as the cost of a supporting specialized firm to carry out annual audits and review of compliance with the ESMF. Second, the project will finance training workshops addressed to the implementing entity and municipal operation staff and eligible contractors. Finally, it will finance public awareness campaigns at each of the municipalities to ensure public knowledge of the project objectives, description and what activities will be launched in their communities.

## **CHAPTER ONE: INTRODUCTION**

### ***1.1 Introduction and Objective of the ESMF***

This document presents an Environmental and Social Management Framework (ESMF) for the proposed Jordan Emergency Services and Social Resilience project (JESSRP). This project is financed by several partners' organizations including the World Bank. The objective of this ESMF is to provide an environmental and social management process for the design and implementation of the JESSRP and provides a practical tool during project formulation, design, planning implementation and monitoring to ensure that environment and social aspects are duly considered in the planning an implementation process. It describes the steps involved in identifying and mitigating the potential environmental and social impacts of proposed investments and ensures that all relevant institutional capacity building and trainings needs are established for effective implementation of recommendations outlined in the ESMF.

The ESMF details agreed policies, guidelines and procedures to be integrated into project implementation and assists the achievement of the compliance with applicable Jordanian laws and regulations and relevant World Bank policies environment and social development safeguard policies and triggers. At present, the details of the subprojects of the components are not yet in place. Therefore, ESMF is the appropriate safeguard instrument to be prepared prior to project appraisal. The ESMF entails an Environmental and Social Screening process which allows subprojects to be classified according to their potential impacts and appropriate mitigation/rehabilitation measures required. The ESMF summarizes institutional arrangements for the implementation of mitigation measures, the monitoring arrangements, including monitoring indicators, capacity building needs as well as cost estimates.

### ***1.2 Project Background***

More than two years of violent conflict in Syria has resulted in massive movements of people within Syria, as well as into neighboring countries. UNHCR estimates that by the end of 2013, the number of refugees in Jordan could surpass 650,000, constituting more than 10 percent of the population. While some of the Syrians are living in camps, the majority — as much as 70 percent — are staying in urban centers, where they share space, resources and services with their Jordanian hosts. This influx has rapidly expanded the population of many towns. The additional pressures are undermining the coping mechanisms of public institutions, communities, households and individuals. At a broader level, Jordan has experienced large exogenous shocks over the past years that have resulted in a sharp and unsustainable deterioration of its fiscal and external balances. The rising influx of Syrian refugees has increased the burden on public service provision, worsened already stretched public finances, and is also having an impact on Jordanians working in the informal labor market, both in terms of competition for jobs and reduction of wages. Overall, the conflict across Jordan's border continues to pose significant downside risks to growth, stability and public wellbeing in Jordan.

### ***1.3 Project Description***

The Hashemite Kingdom of Jordan will receive a Grant from multiple donors, including from the World Bank, to finance the activities of the Jordan Emergency Services and Social Resilience Project (JESSRP). The project aims to promote broader crisis resilience through support to participating municipalities to provide additional services based on local needs, the strengthening of community resilience through local economic development and community engagement, and the strengthening of institutional resilience to crises through development of emergency preparedness systems.

The project development objective is to help Jordanian municipalities and host communities address the immediate service delivery impacts of Syrian refugee inflows and strengthen municipal capacity to support local economic development.

### **JESSRP Components**

The project consists of two components: (i) municipal grants for service delivery and local economic development; and (ii) institutional development and project management, as described below:

#### ***Component 1: Municipal Grants (US\$50.00 million)***

This component will provide direct Municipal Grants to municipalities that are hosting the largest concentration of Syrians (i.e., weighting the number of Syrians hosted and their ratio to the host population). The Grants will allow municipalities to finance additional public services and programs to help improve living conditions, reduce communal tensions and enhance social cohesion. These services would include those that are directly within the municipal competence (e.g., solid waste management, rehabilitation of roads, street lighting, pest control, recreational facilities, local economic development and livelihoods, etc.), as well as certain services that can be contracted out by municipalities to other service providers (e.g., water, wastewater, sanitation, etc.). Grants will also allow municipalities to support community development programs and services amongst vulnerable communities, including women and children. Municipalities can also procure urgent and temporary human resources to ramp up their capacities to deliver various services and programs. The simplicity and flexibility attached to the Grants will allow municipalities to be quick and responsive to local needs and thus win the confidence of their citizens. The Municipal Grants will finance goods, works and services.

The municipalities will initially focus on the most pressing service delivery priorities of their citizens. In parallel, they will work with governorates, communities, the private sector, Community-based Organizations (CBOs) and Non-Governmental Organization (NGOs), including those working for the inclusion of women, to prioritize activities and subprojects for years two and three. This could include identifying areas of critical service gaps, drivers of local economic development and actions to foster job creation locally, or investments in social infrastructure, such as women's and children's centers, soccer fields, parks, or other communal infrastructure, activities and services. The prioritization of key investments, especially those in the realm of social infrastructure, will take into account the specific needs of women, youth and other vulnerable social groups. See Table 1 for an Indicative List of Eligible Expenditures, to be reviewed over the lifespan of project implementation.

The municipalities will employ a participatory model, leveraging platforms supported by other stakeholders and programs — for example, the Community Empowerment Project supported by the USAID, to involve local populations in prioritizing needs and identifying solutions. The precise participatory modalities will be further developed and outlined in the Project Operations Manual (OM). This will help build strong local ownership and thereby foster community resilience and social cohesion. Involving vulnerable communities and social groups, be it women, the poor or the conflict affected, in both the participatory processes and in the provision of benefits will help amplify their voice and inclusion and strengthen community-based coping mechanisms.

The size of and the rules surrounding the Municipal Grant will be flexible and evolve over the life of the Project. Initially, the Grant size to each municipality will be based on number of refugees hosted — about US\$52 per capita in year one. While the municipalities will have significant discretion to determine the expenditure priorities in year one, based on ground conditions and emerging needs, additional norms may be tagged to the Grant in years two or three. For example, provision of critically undersupplied municipal services may dominate year one, but with improved services, in later years, the use of Grants may include

greater focus on local economic development/livelihood activities and services, and/or strengthening community and municipal level crisis coping mechanisms. This will be determined based on biannual reviews involving the municipalities, Ministry of Municipal Affairs (MOMA), Ministry of Interior (MOI) and donor partners.

**Table 1: Indicative list of eligible expenditures<sup>1</sup>**

Waste compactor	Waste collection vehicles
Tipper	Parks and other community recreational spaces
Loader	Libraries
Sewage tanks	Community centers
Water tanks	Women's and youth centers
Pick ups	Construction and expansion of cemeteries
Fumigation vehicles	Construction of new roads and sidewalks, maintenance of existing roads and sidewalks
Garbage containers	Water suction pumps
Insecticides	Rehabilitation/maintenance of public wells
Rehabilitation/maintenance slaughter houses and markets	Short term hiring of technical and operational personnel for Project related support

***Component 2: Institutional Development and Project Management (US\$3.0 million)***

Component 2 will finance two subcomponents: (i) Subcomponent 2A - technical assistance to participating municipalities to plan, implement and manage activities funded by the Municipal Grant, as well as project management support to implementing agencies to coordinate, manage and oversee the Project; and (ii) Subcomponent 2B - capacity building of key Government agencies and vulnerable communities in emergency preparedness, and risk planning, management and financing. The component will finance goods and services.

Technical assistance to municipalities will help them utilize the Municipal Grant effectively and efficiently and thus meet the service delivery, local economic development and livelihoods needs of host communities. This support will not only allow municipalities to immediately ramp up delivery of urgent services but also to reach out to communities, prioritize needs and plan investments and activities for years two and three. A central element of this will be the preparation of simple local economic development plans that will tap into the latent endowments and comparative advantages of municipalities, local communities and the private sector to identify potential drivers of local growth and job creation.

The United Nations Development Program (UNDP), which is currently working with host communities in Northern Governorates, will provide technical assistance to municipalities in year one to carry out consultations with communities, undertake needs assessment, identify local endowments, prepare service delivery and local economic development plans (in collaboration with Governorate level Local Development Units (LDUs)), establish grievance redress mechanisms appropriate to local socio-cultural

context to ensure accessibility also by marginal and more vulnerable populations, and strengthen project management and monitoring capabilities. This will help kick start implementation, check potential elite capture in the early stage, build local capacities and enhance on-the-ground synergies among various donor efforts.

Project management support will help MOMA, the Community and Villages Development Bank (CVDB), and other relevant national and sub-national agencies, including governorates, coordinate, manage and oversee Project implementation. It will finance *inter alia* implementation support, fiduciary and safeguards oversight and management, preparation and dissemination of the Project OM, Project related communication activities, workshops, trainings, and various studies and surveys related to project monitoring and evaluation.

A key element of Component 2 is strengthening the resilience at the municipal, governorate, and central levels and among vulnerable communities to external crises and shocks through risk planning, management and financing, emergency preparedness systems and capacities. A study identifying the existing systems, capacities, gaps and needs will be undertaken in the Project's first year under the direction of MOI/MOMA to inform the design of the specific support that will be provided to the relevant institutions and vulnerable communities under this sub-component. Based on the study, the subcomponent could support the preparation and operationalization of emergency preparedness plans, training of communities and public officials, establishment of crisis management protocols and systems, and so forth. This subcomponent would also support strategic communications with the aim of strengthening crises resilience and emergency preparedness among key stakeholders.

#### **1.4 Methodology and Consultation**

The positive list of eligible projects was identified in consultation with municipalities and local communities and compiled by an identification-phase consultant. In addition, either in-depth meetings and/or focus groups discussion were conducted with the elected members, as well as the technical staff, of the municipal councils to finalize the list in order to confirm and/or amend the initial list of eligible projects.

Robust public consultations were carried out under the project by CVDB and MOMA together with the Mayors of Irbid, Al-Mafraq and Sahel Horan Municipalities from November 18-20, 2013 including over 200 participants to inform stakeholders of the project's launch and to ensure adequate information was made available to the communities regarding the specifics of the project including the types of activities expected to be financed. The project sought to ensure the greatest representation of a wide range of potentially affected stakeholders, including project beneficiaries, thus great attention was given to the mode of advertising these consultations. The public was invited to these sessions through personalized invitations which were distributed by the concerned municipalities. Specifically, stakeholder consultations consisting of women's organizations, youth and sports clubs, civil society organizations (CSOs), farmers and academics were held in the three municipalities of Irbid, Al-Mafraq and Sahel Horan.

The Mayors introduced the project, its objectives and components, and the type of emergency interventions it will support. Participants were given the opportunity to provide feedback on the project design and offer views on community level concerns and interests. The consultation findings were that communities are highly supportive of the project and appreciated the opportunity to present their feedback on the project. They expressed the urgent need for specific interventions that would directly address the accruing negative impacts of the crisis on public services related to:

- *Water and wastewater:* acute shortages of drinking water and lack of sewerage networks to minimize the use of cesspits.
- *Education:* huge pressures on public schools due to the influx of Syrian students and deteriorating conditions of public schools, requiring proper rehabilitation and maintenance.
- *Health:* shortages in medications and increased pressures on public hospitals, resulting in the need for the expansion of available public health facilities.
- *Other municipal services and infrastructure:* increased garbage and associated health risks, deteriorated road networks and lighting, crowded public parks and gardens, increased traffic and limited parking, and saturated local cemeteries.
- *Social and economic sectors:* lack of financing for small scale income generating projects for the poorer segments of the Jordanian female population; inter group competition between the refugee population with the hosting communities over resources and employment opportunities for youth; and lack of community centers and facilities for youth to prevent local social tensions, crimes, and vandalism.

The Mayors were appreciative of the feedback and assured the participants the project will take into consideration these concerns. Lists of attendees and photographs of consultations are attached as Annex 1.

## CHAPTER TWO: POLICY, REGULATORY AND INSTITUTIONAL FRAMEWORK

### *2.1 Environmental Regulations*

The Ministry of Environment (MoEnv) was established in 2003 as Jordan's lead institution for environmental management, with one of its responsibilities to coordinate national efforts to protect the environment. Jordan has an extensive web of laws and regulations pertaining to environmental protection and management. The following regulations have been initially identified to discuss within the framework of the legal requirements for the project and accordingly the ESIA study.

***Law of Environmental Protection, No. 52 of 2006, went into effect Oct. 16, 2006:*** The provisions under this Law include the requirement to protect the environment and all of its elements; the requirement to set policies for the protection of the environment and the preparation of plans for such policies; the requirement to monitor elements of the environment; the requirement to set principles for the handling of harmful substances; approval for the establishment of natural reserves, national parks, and their management and supervision; the requirement to issue environmental emergency plans; and the monitoring and inspection of projects and facilities to ensure that they are in compliance with Jordanian standard specifications. As per the law, MoEnv is responsible for setting Jordan's environmental protection policy, monitoring activities, coordinating national efforts for environmental protection, and preparing environmental contingency plans.

- Article 7 of the law assigns the MoEnv with the environmental monitoring and inspection responsibilities, and grants its employees the right to enter any facility for inspection needs;
- Articles 8, 9, and 10 relate to the marine environment;
- Article 13 sets the requirements for conducting Environmental Impact Assessment for projects;
- An Environmental Protection Fund was established under articles 16 and 17 and sets fees for violation of its provision, terms for delegation of authority, and the operation of environmental non-governmental organizations in Jordan. Finally it lists the regulations that should be issued in accordance to the law.

Of the required 12 regulations set by law; the following regulations have already been issued: marine and coastal environment; environment protection from pollution in emergency cases; air protection; nature reserves and national parks; management, transport and handling of harmful and hazardous substances; management of solid wastes; environmental impact assessment; and soil protection.

Many other agencies retain their environmental responsibilities and structures. Environmental sections and departments are present in a number of institutions such as the Ministry of Water and Irrigation, Water Authority of Jordan, and Ministry of Health, among others.

Institutions that do not have dedicated environmental departments often resort to naming environmental focal points whose responsibilities often include liaising with institutions on issues that pertain to both their respective agencies' mandate and the environment.

Furthermore, Article 23 mandates MoEnv to issue a number of bylaws which include natural reserves and national parks. To date, the following by-laws have been issued:

- EIA regulation No. 37 for the year 2005;
- Noise Level Control Regulation for the year 2003;
- Hazardous Waste Management and Handling Regulation for the year 2003;
- Regulation for the Control of the Use of Ozone Depleting Materials for the year 2003;
- Regulation for the Management, Transport and Handling of dangerous and Hazardous Materials number 24 for the year 2005;

- Public Health Law (No. 54, 2002);
- Water Authority Law (No. 18, 1988) and related standards;
- Regulations for protection of birds and wildlife and roles covering their hunting (No. 113, 1973);
- The Antiquities Law (No. 21, 1988);
- Civil Defense Law (No. 18, 1999);
- Traffic Law No. 47, 2001;
- Labor Law;
- Penalty Law (No. 16, 1960);
- Ministry of Agriculture Law (No. 44, 2002);
- Natural Resources Authority Laws 2002;
- Jordanian Standards for Air Pollution (JS 1189/2006);
- Handling and discharge of used oil by-law of 2003;
- Natural Reserves and national parks by-law (No, 29, 2005); and
- Soil protection by-law (No.25, 2005)

## ***2.2 Jordanian Environmental Impact Assessment Policy***

Environmental Impact Assessment (EIA) is a key tool to ensure that decisions taken at the legislative and regulatory level are actually executed and built into the design and implementation of development projects.

The legal basis for EIA is established in the environment protection law (EPL) no. 52/2006. It is implemented through its EIA regulations no. 37/2006 and its five annexes. These require that the project proponent hire a national consulting firm to conduct the EIA and prepare an EIA report. It also assigns full authority to the MoEnv through its Department of Licensing and Guidance (which also includes the EIA section) to arrange for screening, control and follow up on the EIA process and its implementation. The approval of an EIA is a pre-requisite for any subsequent license or permit by any or all other relevant authorities that may be required prior to construction. All development projects, regardless of EIA classification, must adhere to the air emission, water, wastewater reuse; industrial and municipal discharge Jordanian standards.

As part of the ESMF a "negative list" excludes certain activities such as: those universally excluded by donors (weapons, illegal activities, casinos, etc...), in addition to those affecting natural habitats, forests, endangered species, forced relocation of populations, dams, watercourses, and activities in the disputed areas. The negative list includes activities not eligible for financing under the according to Jordanian regulations is as follows:

- Production or activities involving harmful or exploitative forms of forced labor / harmful child labor;
- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements;
- Production or trade in weapons and munitions;
- Gambling, casinos and equivalent enterprises;
- Trade in wildlife or wildlife products regulated under CITES;
- Production or trade in radioactive materials;
- Production or trade in or use of unbonded asbestos fibers;
- Production or trade in wood or other forestry products from unmanaged forests;
- Production or trade in products containing PCBs;

- Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals;
- Production or trade in pharmaceuticals subject to international phase outs or bans;
- Production or trade in pesticides / herbicides subject to international phase outs or bans (see JESSRP Pest Management Plan for more details);
- Production or trade in ozone depleting substances subject to international phase out;
- Production or activities that impinge on the lands owned, or claimed under adjudication, by indigenous peoples, without full documented consent of such people.

The Municipality as local executing agency must consult and refer to several Jordanian governmental institutions, regulatory authorities as well as other stakeholders from public & private sector several times during the clearance process to ensure environmental compliance; others must be approached prior to construction to take permissions. Approval for construction plans, etc. A summary of responsibilities of relevant governmental authorities is outlined in the following Table:

**Table 2.1: Summary of Responsibilities and Institutional Roles of Some Relevant Regulatory Agencies**

<b>Authority</b>	<b>Responsibility</b>
Ministry of Environment	<ul style="list-style-type: none"> <li>• Permitting prior to operation (EIA report is required).</li> <li>• Inspection during operation.</li> </ul>
Ministry of Labor	<ul style="list-style-type: none"> <li>• Permitting prior to operation (after the occupational health and safety measures are considered).</li> <li>• Inspection during operation.</li> </ul>
Ministry of Health	<ul style="list-style-type: none"> <li>• Inspection during operation.</li> </ul>
Water Authority	<ul style="list-style-type: none"> <li>• Permitting prior to construction (identification of intersection with water piping distribution system).</li> <li>• Supplying water needs for the project.</li> </ul>
Department of Antiquities	<ul style="list-style-type: none"> <li>• Permitting in case of existence of Archaeological remains.</li> </ul>
Ministry of Transport	<ul style="list-style-type: none"> <li>• Responsible for Setting accidents' prevention measures and developing them under the international requirements</li> </ul>
Ministry of Energy and Mineral Resources	<ul style="list-style-type: none"> <li>• Supplying electricity needs for the project.</li> </ul>
Civil Defense	<ul style="list-style-type: none"> <li>• Approval for construction plans.</li> <li>• Permitting prior to operation.</li> </ul>
Ministry of Housing and Public Works	<ul style="list-style-type: none"> <li>• Permitting prior to construction.</li> </ul>
Ministry of Industry and Trade	<ul style="list-style-type: none"> <li>• Permitting prior to construction.</li> </ul>
Public Security Directorate	<ul style="list-style-type: none"> <li>• Permitting prior to construction.</li> <li>• Permitting during operation</li> </ul>

Department of Land and Survey	<ul style="list-style-type: none"> <li>• Permitting prior to construction.</li> </ul>
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The ESMF ensures that the project activities are compliant with the relevant requirements of national policies, regulations and legislations.

Table 2.2 summarizes the Jordanian EIA Procedures which are followed for any project proposal/application:

**Table 2.2: Jordanian EIA Procedures and Steps**

<b>Jordanian EIA Procedures and Steps</b>	
<b>Stage</b>	<b>Activity</b>
Initial Filing and Screening	<ul style="list-style-type: none"> <li>• The Project Proponent completes a Project Information Form (PIF) for the intended project and submits it to the Ministry of Environment for screening;</li> <li>• An Inter-ministerial Central Licensing Committee reviews the PIF, and after conducting site surveys determines if the project is classified as: <ul style="list-style-type: none"> <li>• A Category I project; for which a full EIA/EMP report is required</li> <li>• A Category II project, for which an initial EIA/EMP is required</li> <li>• Category III for which no environment analysis is required</li> </ul> </li> <li>• The decision is publicly displayed for 2 weeks.</li> </ul>
Scoping	<ul style="list-style-type: none"> <li>• The Ministry issues legally binding guidance on the Scope of the Assessment</li> <li>• Proponent prepares a TOR for the EIA/EMP, after a mandatory public consultation.</li> <li>• An Inter-Ministerial Technical Review Committee (TRC) reviews and approves the TOR.</li> </ul>

### **2.3 World Bank Safeguard Policies**

This Project would include small-scale investments in eligible municipalities selected based on the positive list and pre-approved selection criteria. They will include rehabilitation of basic municipal infrastructure and services and municipal assets that provide services while generating revenue streams (e.g. vegetable markets, bus/transport terminals, small-scale manufacturing areas, tourism facilities, etc.). During the implementation process, some negative environmental impacts which are easily mitigated may occur due to the implementation of the rehabilitation and maintenance sub-projects. As a result, this Project is rated a category “B” in accordance with World Bank Operational Policy 4.01 (January 1998).

The locations and details of the subprojects to be financed under the JESSRP are not known yet. It is anticipated that subprojects activities will have some negative environmental impacts which will need to be managed. The Operational Policies of the World Bank which have been triggered are detailed in the table below. The ESMF is therefore a precautionary measure and details steps to be undertaken for each specific category of investment through preparation of subproject specific environmental and social management plans.

**Table 2.3: World Bank Safeguard Policies and their Applicability to the JESSRP**

<b>Yes</b>	<b><i>If applicable, how might it apply</i></b>
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[x]	<p><i>Environmental Assessment (OP/BP/GP 4.01)</i></p> <p>The project is classified as an environmental Category B requiring partial assessment. The proposed scope of sub-projects will largely result in positive environmental impacts, and the minor, site-specific impacts mainly from small-scale works can be mitigated with integration of appropriate measures and implementation of common sense good practice measures.</p>
[ ]	<p><i>Natural Habitats (OP/BP 4.04)</i></p> <p>N/A</p>
[X]	<p><i>Pest Management (OP 4.09)</i></p> <p>This policy is triggered as some pesticides spraying will be involved and would entail the use of mobile sprayers used for pest control. A Pest Management Plan (PMP) is included in this document (Annex 10)</p>
[ ]	<p><i>Physical Cultural Property (OP 4.11)</i></p> <p>The policy is not triggered, as the proposed scope of sub-projects is not expected to impact any known physical cultural resources. Contracts for civil works involving excavations normally incorporate procedures for dealing with situations in which buried physical cultural resources (PCR) are unexpectedly encountered. Furthermore if any chance finds are encountered during implementation, the government's national procedures will be applicable and the national procedures for archaeological chance finds will be followed during implementation. Chance find procedures are aptly captured in Annex 2.</p>
[x]	<p><i>Involuntary Resettlement (OP/BP 4.12)</i></p> <p>Eligible sub-projects are not expected to trigger this policy, which refers to activities that will result in involuntary resettlement of people or economic activities or land acquisition. For screening, a positive and negative list and eligibility criteria have been developed which will be integrated by a set of specific questions related to safeguards. Any sub-project which may have potential impacts on land acquisition or resettlement will have to adhere to the Resettlement Policy Framework (RFP) prepared for the project, and which is a subject of another document.</p>
[ ]	<p><i>Indigenous Peoples (OP 4.10)</i></p> <p>N/A Project activities should not negatively affect Indigenous Peoples (or marginalized people in the society).</p>
[ ]	<p><i>Forests (OP/BP 4.36)</i></p> <p>N/A</p>
[ ]	<p><i>Safety of Dams (OP/BP 4.37)</i></p> <p>N/A</p>
[ ]	<p><i>Projects in disputed areas (OP/BP/GP 7.60)</i></p> <p>N/A</p>
[ ]	<p><i>Project on International Waterways (OP/BP/GP 7.50)</i></p> <p>N/A</p>

## ***2.4 Comparison of World Bank Safeguard Policies and Environmental Policies of Jordan***

The project review and approval process outlined above methodology is commonly reproduced in similar forms in the Levant. In Jordan, for example, the national regulations define a list of projects that must do a comprehensive Environment and Social Impact Assessment (ESIA). In addition, through the screening processes, unlisted projects could be asked to conduct an ESIA if they prove to have significant negative environmental impacts. Further, the Jordanian regulations divide the projects into three categories that correspond roughly to the three categories of the World Bank.

Many features of the Jordanian EA system are compatible with the World Bank EA Policy (OP 4.01) as well as with the European Commission (EC) EIA Regulations no. 97/11. These features are: (i) screening; (ii) scoping; (iii) EIA report content; (iv) content of the Environment Management Plan; (v) provisions for appeal; and (vi) requirements for monitoring and evaluation. As per the EIA regulation no. 37/2005, the Technical Review Committee consists of the representatives of the following agencies: Ministries of Environment, Planning and International Cooperation (MOPIC), Municipal Affairs (MOMA), Health, Agriculture, Industry and Trade, Energy and Mineral Resources, Water and Irrigation (MoWI), Tourism and Antiquities (MoTA), and Public Works and Housing, in addition to representatives from NGO and academia.

## ***2.5 Public Disclosure***

The World Bank procedure requires a public disclosure of the ESMF prior to project appraisal, so as to ensure that all stakeholders, project affected persons, and the general community understand the project and its potential environmental and social impacts, and are able to give their feedback and raise their concerns. This enables the Appraisal Team to enhance the ESMF by incorporating the feedback received. The ESMF must be disclosed widely in-country and is also made publicly available on the WB's Infoshop.

For the purposes of ESMF consultation for this Project, Project-affected groups to be consulted will include relevant departments in the Governorates and Municipalities (e.g. planning, general cleaning, and engineering), sub-municipal representatives, and representatives of host communities.

## ***2.6 Labor and Work Conditions***

The World Bank Performance Standards recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. For any business, the workforce is a valuable asset, and a sound worker-management relationship is a key ingredient in the sustainability of a company. Failure to establish and foster a sound worker-management relationship can undermine worker commitment and retention, and can jeopardize a project. Conversely, through a constructive worker-management relationship, and by treating the workers fairly and providing them with safe and healthy working conditions, clients may create tangible benefits, such as enhancement of the efficiency and productivity of their operations.

The requirements set out in this Performance Standard have been in part guided by a number of international conventions and instruments, including those of the International Labor Organization (ILO) and the United Nations (UN).

- (i) To promote the fair treatment, non-discrimination, and equal opportunity of workers.
- (ii) To establish, maintain, and improve the worker-management relationship.
- (iii) To promote compliance with national employment and labor laws.

- (iv) To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain.
- (iv) To promote safe and healthy working conditions, and the health of workers.
- (v) To avoid the use of forced labor.

The client will identify migrant workers and ensure that they are engaged on substantially equivalent terms and conditions to non-migrant workers carrying out similar work. The client will not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. The client will identify the presence of all persons under the age of 18. Where national laws have provisions for the employment of minors, the client will follow those laws applicable to the client. Children under the age of 18 will not be employed in hazardous work. All work of persons under the age of 18 will be subject to an appropriate risk assessment and regular monitoring of health, working conditions, and hours of work.

The provisions of World Bank Performance Standard on Labor and Work Condition are included in Annex 3 or can be consulted on the web page of the World Bank at:  
[http://siteresources.worldbank.org/OPSMANUAL/Resources/OP4.03\\_PS2.pdf](http://siteresources.worldbank.org/OPSMANUAL/Resources/OP4.03_PS2.pdf)

The Ministry of Environment (MoEnv) was established in 2003 as Jordan's lead institution for environmental management, with one of its responsibilities to coordinate national efforts to protect the environment. Jordan has an extensive web of laws and regulations pertaining to environmental protection and management. The following regulations have been initially identified to discuss within the framework of the legal requirements for the project and accordingly the ESIA study.

***Law of Environmental Protection, No. 52 of 2006, went into effect Oct. 16, 2006:*** The provisions under this Law include the requirement to protect the environment and all of its elements; the requirement to set policies for the protection of the environment and the preparation of plans for such policies; the requirement to monitor elements of the environment; the requirement to set principles for the handling of harmful substances; approval for the establishment of natural reserves, national parks, and their management and supervision; the requirement to issue environmental emergency plans; and the monitoring and inspection of projects and facilities to ensure that they are in compliance with Jordanian standard specifications. As per the law, MoEnv is responsible for setting Jordan's environmental protection policy, monitoring activities, coordinating national efforts for environmental protection, and preparing environmental contingency plans.

- Article 7 of the law assigns the MoEnv with the environmental monitoring and inspection responsibilities, and grants its employees the right to enter any facility for inspection needs;
- Articles 8, 9, and 10 relate to the marine environment;
- Article 13 sets the requirements for conducting Environmental Impact Assessment for projects;
- An Environmental Protection Fund was established under articles 16 and 17 and sets fees for violation of its provision, terms for delegation of authority, and the operation of environmental non-governmental organizations in Jordan. Finally it lists the regulations that should be issued in accordance to the law.

Of the required 12 regulations set by law; the following regulations have already been issued: marine and coastal environment; environment protection from pollution in emergency cases; air protection; nature reserves and national parks; management, transport and handling of harmful and hazardous substances; management of solid wastes; environmental impact assessment; and soil protection.

Many other agencies retain their environmental responsibilities and structures. Environmental sections and departments are present in a number of institutions such as the Ministry of Water and Irrigation, Water Authority of Jordan, and Ministry of Health, among others.

Institutions that do not have dedicated environmental departments often resort to naming environmental focal points whose responsibilities often include liaising with institutions on issues that pertain to both their respective agencies' mandate and the environment.

Furthermore, Article 23 mandates MoEnv to issue a number of bylaws which include natural reserves and national parks. To date, the following by-laws have been issued:

- EIA regulation No. 37 for the year 2005;
- Noise Level Control Regulation for the year 2003;
- Hazardous Waste Management and Handling Regulation for the year 2003;
- Regulation for the Control of the Use of Ozone Depleting Materials for the year 2003;
- Regulation for the Management, Transport and Handling of dangerous and Hazardous Materials number 24 for the year 2005;
- Public Health Law (No. 54, 2002);
- Water Authority Law (No. 18, 1988) and related standards;
- Regulations for protection of birds and wildlife and roles covering their hunting (No. 113, 1973);
- The Antiquities Law (No. 21, 1988);
- Civil Defense Law (No. 18, 1999);
- Traffic Law No. 47, 2001;
- Labor Law;
- Penalty Law (No. 16, 1960);
- Ministry of Agriculture Law (No. 44, 2002);
- Natural Resources Authority Laws 2002;
- Jordanian Standards for Air Pollution (JS 1189/2006);
- Handling and discharge of used oil by-law of 2003;
- Natural Reserves and national parks by-law (No, 29, 2005); and
- Soil protection by-law (No.25, 2005)

## **2.7 Institutional Framework**

To ensure prompt and efficient implementation, the Project's institutional set up and implementation arrangements will follow the systems and procedures that have already been established under the ongoing RLDP, which have proven to be time-tested and effective in working with multiple municipal stakeholders. The RLDP, which is funded through an IBRD loan and the French Agency for Development, is implemented by MOMA with support of CVDB, with the latter having developed solid experience and knowledge in providing technical assistance to municipalities as well as on Bank-related fiduciary and safeguards aspects. Adhering to this well-functioning institutional set up, the Jordan Emergency Social Services and Resilience Project (JESSRP) will be implemented according to the following project administrative structure and management:

***An inter-ministerial Steering Committee (SC)*** will, as for the RLDP, provide strategic direction and exercise overall coordination and oversight at the national level. It will be headed by the Secretary General, MOMA and include key ministries and agencies such as Ministry of Planning and International

Cooperation (MOPIC), MOI, MOMA, Ministry of Water and Irrigation (MWI) and CVDB. It will also include representatives of participating governorates and municipalities (on a rotating basis). MOMA, especially the Project Management Unit (PMU) will function as the Secretariat to the SC. It will meet at least once every six months.

**MOMA** will be responsible for overall Project coordination, management and reporting, and for implementing Subcomponent 2B. Similar to the RLDP, a **PMU within MOMA**, comprising of a Project Director, two Deputy Directors (one each from MOMA and CVDB) and support staff will be responsible for day-to-day Project coordination, management and implementation oversight. This will involve, *inter alia*: (i) providing support to the SC, planning and supervision of Project activities, coordination amongst institutional partners and donors, organizing annual joint missions, etc.; (ii) overall fiduciary oversight of the Project, including Project monitoring, financial management (FM), audits, safeguards compliance, etc.; (iii) Project reporting to the Government and donors, including the preparation and dissemination of Project progress reports; (iv) Project related information and communication activities; and (v) management and implementation of Subcomponent 2B, which involves building capacities for emergency preparedness and risk management systems in Jordan.

MOMA, working with CVDB, will also support and oversee participating municipalities. MOMA will be assisted by UNDP, which will be contracted to provide technical assistance and implementation support to participating municipalities during year one.

**CVDB will support MOMA** under a management contract and be responsible for providing (i) fiduciary support to the Project, including the preparation of withdrawal applications and other financial requests; (ii) procurement of works, goods and services for items that are beyond the procurement thresholds set for municipalities under the current regulations; (iii) FM and reporting; and (iv) procurement of annual audits for the entire Project, including expenses made under Component 2 and assurance audits of participating municipalities. CVDB will assign a nodal officer who will be Deputy Director of the PMU and will report to the Project Director on the above set of activities.

**MWI** through Yarmouk Water Company (YWC) will be responsible for supporting municipalities in identifying short term priorities and implementing subprojects in water, wastewater and sanitation (e.g., rehabilitation of wells, wastewater container units, household connections to wastewater networks, urgent supplies and equipment, etc.). A MOU between MWI and MOMA will facilitate this collaboration and enable municipalities to contract YWC. MWI will be a member of the SC. Similarly, MOI will play a key role in supporting and overseeing preparation/updating of local economic development plans by municipalities. It will also be a member of the SC.

The **participating municipalities** will be responsible for the identification and delivery of priority infrastructure and services to be financed through the Project, in close collaboration with the beneficiary communities. This will involve (i) the identification of priority needs, the costing of alternative programs affordable within the financial envelope allocated through the Project, an arbitrage amongst the various alternatives, and the final consolidation of the priority list of eligible expenses; (ii) formulation of local economic development plans, working with governorate level LDUs; (iii) detailed programming of technical requirements, procurement of works, good, and services according to the current regulatory thresholds; and (iv) management of activities, including consultation with the communities and work supervision.

The **beneficiary communities** will contribute to the selection of priority activities through participatory processes which are outlined in the Project OM and which includes guidelines for ensuring participation of women, youth and groups that are considered vulnerable. Local social organizations (NGOs, CBOs, charities, etc.) will be expected to facilitate the process. Selection criteria for these groups will also

include whether they explicitly represent the interests of women and youth. The local communities and organizations will also be consulted throughout Project implementation and will be able to track progress and results through the publication and dissemination of relevant Project information. The MST will be staffed with a social scientist trained and familiar with WB safeguard issues and OP 4.12 who will be personally accountable for ensuring that this screening mechanism is fully functional and observed. Furthermore, an annual beneficiary impact assessment would be carried out by an independent firm contracted for this specific task.

The municipalities will be made aware by the MST about these screening criteria and apply them systematically. On the other hand, CVDB will undertake a review (both of the identified first 10% of priority sub-set of projects and as a mechanism for all subsequent demand-driven investments) to ensure that there is an accurate and unequivocal response to the preceding questions. Provision to conduct such social screening will be put in the operations manual with clear TORs for any required consultant services. In addition, the project team (both MST and the Bank) would conduct spot checks on prospective or actual sub-project sites to ensure quality.

## CHAPTER THREE: ENVIRONMENTAL AND SOCIAL BASELINE

More than 80% of Jordan is arid and receives less than 200mm annual rainfall. The climate varies from dry sub-humid Mediterranean in the north-west of the country to desert conditions. The rainy season is between October and May with 80% of the annual rainfall occurring between December and March. The temperature ranges from 12 celsius (with January as the coldest month) to about 38 celsius during the summer months, which may range from mid-May to end of September.

The geology includes basement complex rocks, sandstones, limestones, chalks and various Pleistocene and Holocene deposits. Water resources consist of surface and ground water with reclaimed wastewater being used at an increasing scale for irrigation. Most of the soils are acidic with high carbonate content and low organic matter. Soils with good quality cover small parts of the country and have been altered.

Plant diversity in Jordan has declined dramatically and some have become extinct totally from the wild. This has been due to habitat encroachment by urban and agricultural development, deforestation, and deterioration of rangelands by over-grazing and soil erosion.

Northern Jordan, more specifically the Irbid and Mafraq Governorates **Irbid** Governorate has the second largest population in Jordan after Amman Governorate, and the highest population density in the country. Irbid Governorate is located in the far north west of Jordan in the Yarmouk River basin and Jordan Valley. Most of the governorate is part of the Hawran plateau, which covers northern Jordan, and south-west Syria. The governorate is bordered by Syria (the Golan Heights) from the north, the Jordan River from the west, Mafraq Governorate from the east, and Jerash, Ajloun and Balqa Governorates from the south. Irbid Governorate has the second largest population of all governorates, and the highest population density in the kingdom. Irbid City, the capital of the Governorates, has a population of more than 750,000. This population estimate includes more than 70,000 registered students in Irbid's 10 universities, community colleges and institutes, which also are a main economic driver for the City and Governorate. Clothing, chemicals and electronics constitute the main exports for Irbid Governorate. Irbid is also one of the most productive Jordanian agricultural regions, especially in the production of citrus, olives, wheat and beehoney.

Mafraq Governorate covers the north-east corner of Jordan of Amman, with a population of more than 300,000. It is the only governorate in Jordan that has borders with three countries: Iraq to the east, Syria to the north, and Saudi Arabia to the south. It is bordered by Irbid and Jerash governorates to the west, and by Zarqa governorate to the south. Mafraq Governorate covers the second largest area in the kingdom, yet has the second smallest population density (after Ma'an). Agriculture forms a central element of the economy for Mafraq Governorate, especially in the Houran Plateau in the western part of the province. Agricultural production in this area consists of apples, peaches, cabbage, onions, garlic, and lettuce. Additional economic drivers include one natural gas production field at Al-Reeshah, used entirely to produce electricity at a nearby generating station, as well as numerous military bases. The Zaatari refugee camp is located in Mafraq Governorate, hosting up to 100,000 Syrian refugees.

Irbid and Mafraq Governorates spread across Jordan's three main geographic, topographic, and climatic regions, each of which run the length of Jordan from the northern to southern border. From west to east, these are: (1) the Jordan Rift Valley; (2) the Highlands Region; and (3) the Badia and Desert Region.

Urban areas in these two Governorates have been impacted by increases in population specific to Syrian refugees which range from 20% to 133%. Impacts on the biophysical environment include: (a) increased population density in existing residential buildings; (b) new, rapid construction of new multi-unit residential buildings; (c) increased building density in existing residential areas, taking over few existing

patches of open space used as children's play areas, sheep/goat pens, etc.; (d) increases in trash, both in and out of waste collection bins; (e) increases in roach and rodent populations; (f) crowded existing roads with increases in traffic jams; and (g) e.g. inability to extend urban utilities (sewerage, water supply, street lighting) to neighborhoods with rapid intensification of residential infrastructure. Integration of new populations into these cities and towns is fairly evenly distributed, with some neighborhoods bearing impacts more so than others. Deterioration of municipal services due to population influx is thus having a broad negative environmental impact in these cities and towns.

Impacts are also felt in the rural areas in these two Governorates. The agricultural sector – which accounts for about 4% of Jordan's GDP – has seen its costs of production rise significantly. Border communities in Jordan that had benefitted from government-subsidised seeds, fertilisers, pesticides and animal feed from Syria, or earned income by trading or smuggling Syrian agricultural inputs through informal trade networks, no longer benefit from these cross-border efficiencies. Shortages in inexpensive poultry products imported from Syria, the increased price of animal feed on the local market and a spike in animal-borne diseases due to strained border controls have caused the price of eggs to increase four-fold. Animal feed prices rose by 22-38% between 2009 and 2012, mostly due to increased transportation costs as a result of the change in the trading route from Tartous in Syria to the new ports of Aqaba and Haifa. Meanwhile, the illegal cross-border trade in Syrian livestock has pushed the price of sheep and goats down by half in some areas of the country. Competition between Syrian refugees and Jordanians in rural areas has depressed seasonal farm wages as low as JD150 (\$210) for 30 days of work.

Agricultural commodities that once travelled overland through Syria to markets in the Arabian Peninsula and Iraq, or were trans-shipped through the port of Latakia to Eastern European countries are now transported by sea through ports in Israel, Turkey or Egypt, or by air from Lebanon, at a much higher cost to producers. Concerns of an impending food supply shortage are also mounting as HKoJ copes with a rising import bill due to increased demand from refugees and a decline in Syrian food imports of at least 50%.

According to official figures and statistics, the number of Syrian refugees in Jordan has reached a ratio of nearly nine per cent of the Kingdom's population. This number is even higher in particular areas where the presence of Syrian refugees constitutes nearly 25 per cent of the population. Official Jordanian statements indicate that the cost of hosting the 460,000 registered refugees in the Kingdom, 330,000 of them migrating and settling in various Jordanian towns and cities, has reached approximately 380 million Jordanian dinars (US\$780 million) for the year of 2013. This cost will increase significantly beyond one billion dinars should the number of refugees in the Kingdom double as expected.

The cost of hosting Syrian refugees in Jordan is divided in the following manner: 130 million for the cost of commodities, 55 million for energy costs, 40 million for health, 35 million for security, 13 million for education, and 15 million for water among other needs.

As part of JESSRP, UNDP will be conducting a special socio-economic household survey on the impact of the Syrian crisis on Jordanian host communities in Irbid and Mafraq. The report, to be completed by December 2013 and will assess the current socio-economic situation of Jordanian host communities in regard to the Syrian refugee influx and the crisis in Syria, versus the situation in 2010 Household Income and Expenditure Survey (HIES) Survey. At the outset of the household survey, responses will address the following issues:

- Change in employment status due to the Syrian refugee influx / crisis in Syria (loss of job, change of job), disaggregated by gender and age (youth/not youth)
- Change in income status (loss of income, change of income source, increased income)
- Change in household expenditures (source of change, general price inflation, specific price inflation)

- Change in water availability and source (water network / purchasing water)
- Change in accessibility and quality of other basic services (education, health, sanitation, solid waste management, municipal services)
- Priority needs
- Perception of the households towards the Syrian refugee presence.

In addition to the above, the survey will adapt the 2010 HIES questions with relevance to the current situation of Jordanian households' vis-à-vis the Syrian refugee crisis in the following sectors:

- Education
- Health
- Water and sanitation
- Solid waste management and municipal services
- Housing

The survey will also capture household assessment of priority needs between the various sectors. Please see Annex 4 for more details.

## CHAPTER FOUR: POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The typical sub-projects to be financed by JESSRP are similar to those in the RLDP, and are related to rehabilitating basic municipal infrastructure and services focus on developing municipal assets that maintain services while generating revenue streams (e.g. vegetable markets, bus/transport terminals, small-scale manufacturing areas, small and medium scale slaughter houses, tourism facilities, etc.). Other investments would be in the area of developing municipal asset management strategies/plans together with methodologies for participatory planning, budgeting and implementation at local level. The potential impacts would be those associated with:

- (i) construction activities associated with rehabilitating streets and infrastructure (construction safety, noise, dust, waste material, and vehicular traffic);
- (ii) provision of sanitary and electricity services;
- (iii) construction of parking structure, and installation of street signing and lighting;
- (iv) landscaping and re-vegetation activities.

The potential adverse impacts would be restricted in scope and severity, such as:

- Dust, noise and odor due to demolition and new construction;
- Construction period impact on traffic congestion and accidents resulting from movement of construction vehicles;
- Risk for aesthetic and vegetation;
- Risk for inadequate handling of waste material during construction and operation;
- Risk for road accessibility and health;
- Disposal of solid and liquid waste generated from slaughter houses; and
- Risk for cultural heritage assets identified during “chance finds”.

The below detailed adverse impacts are specific to the following: water suction pumps, waste collection vehicles, fumigation vehicles, as well as construction activities associated with parks, libraries, community centres, roads, cemeteries, etc.

**Noise Level:** The expected impact evaluation process suggests some medium to high negative impacts in relation to noise during the construction phase of water pumping station and pipe-laying operations as well as from the waste compactor, fumigation & waste collection vehicles. There are standard public health and occupational safety measures and procedures to reduce noise impacts during the construction stage and operation of machinery & vehicles such as limiting working hours and working days (reduction of noise level dose), imposing maximum construction noise levels, etc.

The noise level outputs can be controlled by specifying a maximum noise level which the contractor will have to comply with under the contract terms including supply of hearing protective equipment according to Jordan’s labor law and occupational safety and health regulations.

***The following mitigation measures are related to the noise issue:*** All equipment and vehicles shall be maintained in line with manufacturer's recommendations to meet relevant standards in terms of noise level, in addition, the vehicles and machines shall be used responsibly, e.g. machines shall not be left idling for long periods if they are not in use;

- All the construction works and activities shall be done during day time and during working days; night work curfews should be employed unless with official authority permission , and
- The construction activities which generate noise level of about 110 dB (A) or more shall be done after the school finish time if the distance between the noise source and the school is less than 1700 m.

**Air Quality:**The construction activities of pump station(s) and pipelines as well as the operation of machinery & vehicles will lead to medium negative impact on air quality on surrounding residents.

*The following mitigation measures to reduce dust and other emissions are as follows:*

- Dust resulting from some of the activities above such as the construction activities of a pumping station(s) and from the construction of water pipelines should be minimized by using water sprays to suppress, keep soil damp, and to reduce dust generation.
- During the construction phase, it is recommended to regularly monitor vehicular emissions and to conduct periodical maintenance of construction vehicles and machinery, in order to reduce their emissions to comply with the limits of the Jordanian dust emission standards (national) (JS 1140/2006) and World Bank international standards.
- During construction phase, it is recommended to regularly monitor the dust concentrations in the ambient air to control its levels to the limits of national standards (JS 1140/2006).

### **Construction Wastes, including Hazardous Waste Use and Disposal**

The potential impacts specific to the generation of construction debris, including hazardous materials, are temporary and are expected to occur during the construction phase only. However, it is anticipated that there will be no detrimental negative impacts under this category as long as the construction contractor(s) adhere to best management practices. Small-scale construction and renovation activities should apply best management practices (BMP) to minimize soil erosion, dust, debris and solid generation, and to ensure proper disposal for debris and waste. Solid waste resource recovery and reuse demonstration is recommended where feasible, for example, source separation of solid waste into marketable recoverable products or source materials, such as aluminum cans, glass bottles, plastic, and white office papers.

*The following mitigation measures related to construction wastes, including hazardous waste disposal, are as follows:*

- All types of wastes resulting from construction and operation activities shall be managed in an environmentally safe manner and according to related regulations.
- All domestic solid wastes shall be collected in compatible closed containers and then transferred to the authorized waste disposal site with prior coordination with the relevant authorities, or the company shall contract a private company to manage this issue.
- Waste oils shall be collected and managed according to the regulations of Management and Handling of Used Oil issued by the MoEnv. Illegal dumping of any type of waste oils as well as burning of any type of waste is strictly forbidden.
- Excess solid waste (construction debris) resulting from construction activities shall be frequently disposed of to an authorized dumping area as regulated by and with the cooperation of municipalities.

**Public Health and Occupational Safety:** Some medium to high public safety impacts might arise. These impacts relate mainly to disruption of traffic and excavations during construction. Again, there are standard procedures for traffic management during construction, and for control and protection for excavations and trenches the contractor is required to comply to protect the safety of workers and the public:

- All sites would be provided with appropriate security fencing to minimize public safety risks during the construction and operational phases;
- During construction phase, it is important to coordinate with utility service providers (power lines, water lines, gas etc) and have a designated point of contact person for coordination requirements and have a representative available on site when utilities interruption is required;
- During construction activities, warning signs and warning lights near the residential areas shall be posted. In addition, safety fences shall be used near residential areas, schools and roads.
- No excavation soil or debris as well as building materials and water pipes shall be piled on the narrow roads in high densely populated areas.

## CHAPTER FIVE: ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

### 5.1 *Safeguards Provisions Built into the Subproject Cycle*

Environmental appraisal is viewed as an integral part of the appraisal process of both the participating municipalities as well as the local MOMA staff Environmental safeguards are built into the subproject cycle as follows:

- **Design phase:** The ESMF and RPF have been outlined in the Project Appraisal Document (PAD) approved by the Hashemite Government of Jordan as well as by the MENA Vice President representing World Bank Board of Directors.
- **Subproject Appraisal phase 1:** There is an **initial subproject screening form** (Annex 5) which confirms if a possible subproject is eligible and gives further instructions as how to proceed;
- **Subproject Appraisal phase 2:** Once a project has been initially accepted, then a TEG and/or EMP form should be selected. Please find in Annex 6 a sample ToR for an EMP and in Annex 7 the TEGs.
- **Subproject Appraisal phase 3:** There should be a **site visit and interview** to confirm that the subproject has been appropriately categorized; to review technical aspects of the projects in terms of viability; to verify local commitment and capacity; and to verify if OP 4.12 is applicable. Furthermore, this **site visit and interview** will identify which impacts on the TEG/EMP template are applicable and to add any specific information in addition to the TEG/EMP template relevant for implementation of the subproject.
- **Subproject Approval:** Insure that all of the relevant information detailed above is documented in a subproject file, along with other technical criteria. Then subprojects will be funded according to consistency with JESSRP objectives. In some cases, approval may be delayed or denied if environmental and social safeguards recommendations have not been satisfactorily incorporated into subproject design.
- **Subproject Implementation:** Ensure that contracts are prepared with environmental and social safeguards clauses in order to ensure that these details have been incorporated into execution modalities.
- **Subproject Supervision:** Undertake site visits to ensure that TEG/EMPs and accompanying mitigation measures, as required by contracts, are being implemented as expected. Require changes to subproject design and/or implementation if unforeseen impacts occur. Keep documentation on site visit details in order to provide this information for monitoring.
- **Subproject Monitoring:** There should be at least one member of the community responsible for day-to-day monitoring. Monitoring will be conducted by either a MOMA or municipal engineering staff member.
- **Subproject Ex-post auditing:** On a yearly basis, and ex-post fiduciary audit will be conducted on a subset of subprojects in order to identify systemic weakness in implementation, supervision, and monitoring, as well as any capacity issues which need additional support. This audit will also assess the eligible municipalities' capacity and performance and recommend areas that need further strengthening.

### 5.2 *Procedures for Environmental and Social Screening*

Environmental appraisal consists of two steps: Screening, and Environmental Assessment. All JESSRP prospective subprojects first go through a screening process. The screening involves (a) checking that the activity is permissible (as per the legal and regulatory requirements of the project) and, (b) determining

the level of environmental assessment that the prospective subproject requires based on the level of expected impacts.

The initial Subproject Intake form (see Annex 5) will result in three critical screening outcomes:

- (1) it will eliminate from consideration any prospective subproject which contains elements from the negative list;
- (2) it will determine the category for further assessment; and
- (3) it will determine which of the Technical Environmental Guidelines should be applied.

This same initial safeguards screening form for all proposed civil works subproject level activities assesses for, among other things, the application of the Bank Operational Policies on physical cultural resources and involuntary land acquisition and resettlement. For social safeguards, while the Project is expected to only operate on public/state lands, the screening will assist in risk management, especially related to the presence of squatter or other encumbrances on state lands. The screening form will also assist, for instance, in “chance finds”, i.e., relating to the Physical and Cultural Resources Policy of the Bank. This initial screening form will also identify whether the subproject relates to water supply and sewerage (which the Yarmouk Water Company will be implementing) or to all other municipal services (which municipalities will contract out or implement directly).

The initial screening form also confirms the non-applicability of OP 4.04 Natural Habitats, OP 4.10 Indigenous Peoples, OP 4.36 Forests, and OP 4.37 Safety of Dams. Sub-project locations are all within existing municipal jurisdictions; these jurisdictions are highly-urbanized areas and natural habitats, forests, dams, etc. do not exist within the geographical range of possible sub-project locations.

Eligible activities at the subproject level are not anticipated to trigger World Bank Operational Policy OP 4.12, which covers impacts mainly related to the relocation of households or communities; acquisition of private owned lands (temporarily or otherwise); adverse impacts on livelihoods including those that may occur through restriction of access to resources. It is anticipated that that subproject level activities will be carried out on public/state owned lands. However, the Project has prepared a RPF to address unexpected issues that might arise even in the context of state owned lands (i.e., presence of squatters or other encumbrances). This RPF will serve as a precautionary measure in the unlikely situation that squatters and/or encumbrances are found on government land used for the Project. In such events, RAPs will be prepared to address any adverse impacts that may arise as per OP 4.12.

For instance, a positive list and eligibility criteria will be integrated by a set of specific questions related to safeguards. The initial screening form includes the following questions:

- Will this subproject require the acquisition of private land (temporarily or permanently) for its development?
- Will restriction of access to natural resources (e.g. pasture, fishing locations and forests) occur for households and communities as a result of this subproject?
- Will this subproject result in the involuntary relocation of individuals, families, or businesses?
- Will this subproject result in the temporary or permanent loss of economic activities, like crops, fruit trees, businesses, household infrastructures (such as granaries, outside toilets and kitchens, etc.)?
- Will this subproject result in adverse impacts on individuals or entities encroaching on state lands?

With respect for screening for physical cultural resources, the initial screening form includes the following:

- Will this subproject involve significant excavations, demolition, movement of earth, flooding or other environmental changes?
- Will this subproject be located in, or in the vicinity of a place with spiritual or cultural meaning, has historic value, or might contain historical artifacts?

The completion of the initial Subproject Intake form will result in the prospective subproject being determined as one of these 7 modes of safeguards management:

- h. Important impact (Category "A" according to the WB and Category "1" according to the Government of Jordan) or excluded activity under the negative list: project is excluded;
- i. Above-average impact (new construction and/or expansion onto new site), the relevant TEG will be selected and applied, a site-specific EMP will be developed, and the tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses;
- j. Average impact (civil-work rehabilitation on existing site), the relevant TEG will be selected and applied, and the tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses;
- k. Negligible or absent impact (Category "C" according to the WB and Category "3" according to the Government of Jordan): no impact assessment is required;
- l. Goods-only procurement of everything except pesticides/rodenticides, in which adherence with a goods-specific TEG is required;
- m. Good-only procurement of chemicals (pesticides/rodenticides) for chemical control, in which case the JESSRP Pest Management Plan (PMP) is to be used as primary document, along with a pesticide-specific TEG;
- n. Any site-specific civil works ((b.) or (c.) above) which at the time of design or construction engages OP 4.12 Involuntary Resettlement, in which case the both the process for (b.) or (c.) plus the Resettlement Policy Framework (RPF) is applied.

For all activities for which detailed TEGs are not available, Generic TEGs will be used for the assessment. Any Municipal elected leader or technical staff should be able to fill out the Subproject Intake form. However, this form will need to be reviewed by either a local MOMA engineer, a municipal staff engineer, and/or a member of CVBD in order to be finalized and cleared.

<b>If subproject screening form determines</b>	<b>Then the subproject ...</b>
Large-scale civil work impacts (category A/1)	is not financed
Minor, reversible, site-specific impact (category B/2)	selects the appropriate TEG template
Goods-only non-chemical procurement	selects the appropriate "guidelines for use"
Goods-only vector control procurement	refers to PMP for guidance
Involuntary taking of land or restriction of access	refers to RPF for guidance

During project implementation, individual municipal applications for funds would be reviewed and scored on the basis of screening criteria including economic/financial, social and environmental considerations.

For sub-projects with only goods procurement will be subject to guidelines of terms of use. Sub-projects with vector-control goods procurement will require a specific screening form to determine whether the goods are appropriate for procurement vis-à-vis the Pest Management Plan, and will refer to the Pest Management Plan for further guidance on terms of use. These goods-only subprojects will not be screened further for environmental and social safeguards impacts.

<b>Goods procurement: guidelines on terms of use</b>
Garbage containers, waste compactors, tippers, loaders, pick-up trucks and other waste collection vehicles
Mobile water supply tasks, sewage tanks
Water supply pumps, starter panels, motors, cables, pipes, fittings, and valves, heavy vehicles and equipment, as well as water quality laboratory equipment
<b>Vector control related inputs: application of Pest Management screening tool and PMP-specific EMP</b>
Fumigation vehicles, trailed sprayers, insecticides, rodenticides

Initial subproject screening will be conducted by Governorate and Municipality supervisory engineers who have received initial Bank safeguards training, and the screening forms will be reviewed by the MST environmental safeguards consultant as per the initial safeguards screening methodology above.

<b>Small-scale civil works (rehabilitation): mandatory application of Environmental and Social Screening tools and selection and use of relevant TEG from existing TEG templates</b>
Rehabilitation of currently-existing parks, libraries, community centers, and cemeteries
Rehabilitation of currently-existing roads, sidewalks, street lamps, street signage, etc.
Rehabilitation and upgrading of currently-existing wells
<b>Small-scale civil works (expansion and/or new construction): mandatory application of Environmental and Social Screening tools and required development and application of site-specific EMP; only to occur on currently-owned municipal lands</b>
Cemetery expansion
Construction of new roads, parks, libraries, and or community centers
New household connections to existing water supply and/or sewerage networks
Selected water supply and/or sewerage rehabilitation measures.

### **5.3 Procedures for Subproject Assessment and Development of EMPs**

There are subproject EMP templates (called Technical Environmental Guidelines, or TEGs) prepared as part of the ESMF for the following categories.

- Pest-management related goods purchase and use;
- Non pest-management related (e.g. solid waste, water supply, slaughterhouse, cemetery) related goods purchase and use;
- Small-scale road and/or lighting rehabilitation and/or new construction on existing right of way (ROW);
- Small-scale water supply or sewerage rehabilitation and/or new construction on existing ROW;
- Small-scale rehabilitation and maintenance work on existing public wells; and
- Small-scale civil works rehabilitation, extension, and/or new construction of municipal structures (e.g. libraries, parks, community centers, women and/or youth centers) on state lands.

These TEGs (See Annex 7) are accompanied by suggested mitigation measures and suggested standard clauses for contractors' contracts, to be made specific to the site by a Municipal and/or MOMA engineer trained in the use of subproject screening and TEG use. Similarly, the subproject supervision/monitoring form developed for the small scale rehabilitation works so as to record compliance with the TEG is attached in Annex 9. These will be completed by a Municipal and/or MOMA engineer trained in the application of these TEG monitoring forms.

Municipal Services Team (MST) environmental safeguards supervision will include quality assurance on TEG monitoring and reporting, field visits to selected subprojects, as well as inclusion in a yearly fiduciary audit, which will include post-review of a subset of subprojects with regards to design as well as implementation.

### **5.4 Implementation Arrangements**

The Project will essentially build upon the institutional arrangements in place for the ongoing Regional and Local Development Project (RLDP) with one significant departure: municipalities will play a key nodal role with respect to implementation and coordination of activities related to activities financed by the supplementary Block Grant. The JESSRP PMU will comprise a Project Director, Deputy Director and a representative from CVDB. The PMU will be supported by support staff, as required. The safeguards instruments of ESMP and RPF will be attached to the OM as stand-alone annexes.

CVDB will be responsible for providing fiduciary support to the Project, including with regards to procurement, financial management, and environmental and social safeguard aspects. CVDB will assign a nodal officer who will be a member of the PMU and will report to the Project Director on the above set of activities.

It is expected that the subproject screening, EMP subproject finalization, and EMP monitoring will be conducted by municipality-based supervisory engineers, including those staffing the municipality as well as MOMA field-based staff, to be supplemented by other municipality staff as needed. An environmental safeguards consultant, to be hired as part of the Municipal Services Team (MST), will review the above documents for quality assurance, conduct 'spot checks', design and conduct necessary training, and prepare monthly safeguards monitoring reports in a timely manner.

MOMA, the project implementing agency, will ensure that the beneficiary municipalities adopt and implement the ESMF for screening of subprojects, and that WB funds will not be used towards the funding of any category A type sub-projects or other projects included in a negative list cited above.

Component 2 will be directly supported by the MST. This Team will be strengthened through the recruitment of a dedicated social scientist and a full-time qualified environmental specialist, with both good understanding of the Bank's social and environmental policies in their respective fields of expertise, as well as experience on the ground in monitoring and mitigating the anticipated social and environmental implications created by the implemented sub-projects. Social and Environment Specialists hired as part of the MST will be responsible for reviewing, advising and reporting respectively on social and environmental issues throughout the project life. The Project would further develop such capacity by financing additional safeguards training to MOMA and municipal operations staff. Furthermore, the MST safeguards staff would aim at building further social and environment management capacities of local contractors through technical well-structured training.

Eligible municipalities would also benefit from the services of qualified local consulting firms who will assist in the supervision of the infrastructure related activities. Over the years of Bank's operations in Jordan, several leading Jordanian consulting firms have developed good knowledge and experiences with Bank's social and environmental safeguards. This type of firms would be expected to be competitively selected to supervise sub-projects implementation on the ground, ensuring quality and the contractors' compliance with the EMP and appropriate management of any social issue that might emerge during implementation. Environmental and social management clauses will be inserted into the various contracts (see Annex 8) to tie the contractors and consulting firms into respecting the environmental and social norms in civil works.

Certain illustrative activities that are broadly defined under this JESSRP Project (such new parks and other community recreational spaces, new libraries, new women's and/or youth centers, construction and/or expansion of cemeteries, construction of new roads and sidewalks, and well drilling, irrigation of street medians and landscaping for municipal sectors) will require a site-specific Environmental Management Plan (EMP). The Conditions would be to implement environmentally sound design and practices use by the implementing body and their subcontractor(s) through an environmental assessment checklist, monitoring and evaluation (M&E), and best management practices (BMP) to minimize dust, soil erosion and debris and waste production; to properly dispose of debris and waste; and to minimize impacts to drainage and water bodies.

As with all World Bank-funded projects if new information becomes available that indicates that any of the proposed actions might be "major" and their effects "significant", the municipality and/or MOMA shall make the World Bank aware of these actions and potential effects.

## **5.5 *Monitoring Plan***

Aiming at providing information about key environmental and social impacts of the project, and effectiveness of mitigation measures, the MST in close collaboration with the Ministry of Environment and MOMA is required to formulate a detailed monitoring plan during constructional and operational phases of the proposed project sub activities, to ensure key environmental and social impacts are mitigated to the extent required. The M&E specialist within the MST, who will be responsible for monitoring overall progress and evaluating project performance, will also be in charge of monitoring and evaluating safeguard compliance with the ESMF. MOMA will include a section on safeguards compliance in each progress report which will be submitted to the SC and the WB, with input from CVDB, MOE, MWI and other regulatory agencies as needed.

Key objectives of the monitoring plan include:

- Enabling the municipalities and the World Bank to evaluate the success of mitigation as part of project supervision.
- Allowing corrective actions to be taken whenever needed.

The plan contains objectives of monitoring, and specific targets to achieve, as well as main elements of monitoring like parameters to be monitored, full description of methods and equipment to be used for monitoring, sampling locations, frequency of measurements, threshold limits (per national and international standards), corrective action procedures, personnel responsible for monitoring, reporting and communication procedures. See Annex 9 for the sub-project screening form for monitoring purposes.

Monitoring and procedures are set out in a way that:

- Early detection of conditions that necessitate particular mitigation measures is ensured
- Information on the progress and results of mitigation is furnished Prior to applying monitoring plan, A given construction contractor should have his plan approved by the MOE with a clearly delineated Key Performance Indicators (KPIs) to facilitate further evaluations.

Monitoring includes:

- Visual observations
- Selection of environmental and social parameters at specific locations;
- Sampling and regular testing of these parameters

Formulation and implementation of EMP plan are to be budgeted within a given contractor fee and clearly stated in the Terms of Reference. The project owner is entitled to evaluate outcomes of the monitoring plan on an annual basis through conducting an annual plan review. Monitoring will be undertaken at a number of levels. It will be undertaken at work sites under the direction and guidance of the environmental specialist of the CVDB who is responsible for reporting the monitoring to the World Bank.

## ***5.6 Monitoring Indicators***

The performance indicators below will be monitored and reported on by the MST environmental safeguards consultant to monitor compliance on the ESMF:

- Subproject screening forms completed and cleared by MST safeguards specialist as a percentage of total subprojects cleared for JESSRP funds;
- Subprojects with civil works content with completed and quality-cleared (by MST) construction-phase monitoring forms as a percentage of total subprojects with civil works content.
- Number of participants in safeguards-specific workshop sessions, to be reported specific to each municipality.

## ***5.7 Capacity Building and Training Plan***

It is expected that the safeguards members of the MST, or an individual consultant or local consulting firm, will be hired and supervised by MST, will design and implement these training programs. These are expected to cover the following topics: (i) overview of World Bank safeguard Operational Policies; (ii) overview of the JESSRP ESMF structure, including positive list of potential subprojects; (iii)

exposure to and training on the use of the initial screening tool, the subproject EMP templates and the cover sheet to tailor them to individual subprojects; (iv) exposure to and training on subproject EMP on-site monitoring form; and (v) resources to access in case of questions or in case of “complicated” subprojects.

MOMA as the Implementing Agency, has sound technical capacity and previous experience with implementing Bank projects such as RLDP, and thus will be able to ensure compliance with safeguard policies. In addition, CVDB will have fiduciary oversight, the Ministry of Environment and Ministry of Health both have overall regulatory oversight authorities in relation to environmental, social and, public health respectively. Local municipal contractors and municipalities executing component 1 will be subject to the oversight of these regulatory authorities. Municipalities have moderate prior experience implementing Bank projects and hence are not familiar with the requirements to comply with safeguard policies. Additional training and capacity strengthening will be undertaken during project mobilization and implementation as necessary by both the appointed project as well as existing engineering departments at the MOMA and large municipalities such as Irbid and Mafraq at both the PMU level (M&E specialist on Bank safeguard policies and on the requirements for monitoring and reporting), and by the implementing agency and contractors (engineering departments at the small municipalities (grant beneficiaries) and local contractors) and community level (specifically in the areas of small development activities, chance-finds procedures, etc.).

As mitigation measures must be taken into account in the project design and costs, the ESMF does not need a separate budget allocation. However, it is imperative that the training activities costs reflect the incremental effort necessary to fully implement the ESMF.

**Table 5.1: Suggested Institutional Strengthening and Capacity Building Topics**

Understanding the WB ESMF and its various elements
Jordan’s Environmental Protection Law no. 52 / 2006- Environmental Impact Assessment Review Process under the EIA Regulations no. 37/2006 and its five annexes (Environmental Impact Assessment (EIA) is a key tool to ensure that decisions taken at the legislative and regulatory level are actually executed and built into the design and implementation of development projects.)
ESMF Implementation with focus on (Environmental Assessment (OP 4.01) Involuntary Resettlement (OP/BP 4.12) and the IPM) as these are triggered under this project
Municipal needs consultation procedures
Preservation of chance finds
Conservation of archaeological and cultural resources
Preservation of natural habitats
Reduction of emissions, dust, and suppression of noise
Occupational Health and Safety
Solid Waste Management
Sewage Waste Management
Soil protection and prevention of compaction
Sanitary facilities management
Implementation of maintenance and repair measures
Accident prevention
Preventing pollution of water resources and structures
Community involvement in maintenance and operation of municipal facilities (corporate social responsibility and community participation)
Community involvement & conflict resolution

*Table 5.2: Institutional Strengthening and Capacity Building Implementation Plan*

<b>The Institutional Strengthening and Training for Implementation</b>				
<b>Institutional Strengthening Activity</b>	<b>Position(s) (institutions)</b>	<b>Scheduling</b>	<b>Responsibilities</b>	<b>Cost Estimates</b>
Understanding the WB ESMF and its various elements	Project Owner MOMA, municipalities, and CVDB	Throughout project implementation and operation	Project Owner	Included in ESMF Fee
Mitigation	Project Owner- MOMA municipalities, and CVDB;	Throughout project implementation and operation	Project Owner	Included in operating fee
	Cities and Villages Development Bank (CVDB)	Throughout project implementation and operation	CVDB fiduciary aspects of the Projects as further described in the Operations Manual	Included in service fee
	Grantees – (municipalities)	Throughout grant service period	Grantee	Included in amount granted
Monitoring	Project Owner- MOMA	Throughout project implementation and operation	Project Owner	According to funds allocated
	Ministry of Environment	Throughout project implementation and operation	Regulatory Authority responsible for Environmental Protection	Included within the grant agreement
	CVDB-	Throughout project service period	Fiduciary	Included within the amount delegation of authority for fiduciary services
<b>Training</b>	<b>Participants</b>	<b>Contents</b>	<b>Scheduling</b>	<b>Cost Estimates</b>
<ul style="list-style-type: none"> <li>Municipal needs consultation procedures-</li> </ul>	MOMA, participating municipalities staff and participating GOJ agencies	<ul style="list-style-type: none"> <li>* On-the-job training workshops</li> <li>• Participating municipalities will be responsible for the</li> </ul>	<ul style="list-style-type: none"> <li>* Preparing for a consultation session</li> <li>* Audience nomination (focus groups)</li> <li>* Consultation communication</li> </ul>	Conduction of scoping session and public disclosure session would cost~ 1,000 USD per <i>Trainee for the</i>

		<p>identification and delivery of priority infrastructure and services to be financed through the project, in close collaboration with the beneficiary communities</p>	<p>skills * Effective management of consultation output</p>	<p><i>package listed above under Table 6</i></p>
<p>* ESMF Implementation</p>	<p>MOMA Staff and participating municipalities</p>	<p>* Off-the-job training workshops for field workers of municipalities and local contractors *Municipal engineering staff training on the use of screening forms and EMP templates * Special training for engineering municipal staff on filling the supervision templates (inspection of construction forms)</p>	<p>* Core value of implementing a ESMF * Key elements of ESMF and systematic approach to implementation * Regulatory framework and literature review * Identifying target groups and valued environmental and social components * Analyzing impacts and setting pollution prevention measures * Setting key elements of environmental and social management plans * Effective monitoring plan (approaches and fund resources)</p>	<p>35,000 USD to 50,000 USD dependent upon number of trainees and venue</p>

## 5.8 Consultation and Disclosure Requirements

During the EMP and RAP preparation process for sub-projects, the grantee consults project-affected groups and local nongovernmental organizations (NGOs) about the Project's environmental aspects and takes their views into account. The borrower initiates such consultations as early as possible. For meaningful consultations between the grantee and Project-affected groups, the grantee provides relevant material (e.g. the ESMF and the RPF) in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted. In addition, the grantee must consult with such groups throughout Project implementation as necessary to address safeguards-related issues that affect them. Provisions and specifics, including budgets, will be included in the relevant TORs and subsequent safeguards documents.

## 5.9 ESMF Cost Estimate

The cost associated with implementing the EMP is accommodated by the project and estimated at around US\$219,400. First, the project will finance as part of the project management fee the cost of a full-time environmental specialist to join the CVDB operations team as well as the cost of a supporting specialized firm to carryout annual audits and review of compliance with the ESMF. Second, the project will finance training workshops addressed to CVDB and municipal operation staff and eligible contractors. Finally, it will finance public awareness campaigns at each of the municipalities to ensure public knowledge of the project objectives, description and what activities will be launched in their communities. Moreover, the supervision consultants and the contractors will share the project implementation plans including any specific actions that will take place during construction. This includes vehicular traffic detour plans, temporary interruption of water and electricity supplies, etc.

**Table 5.3: ESMF Implementation Cost Estimate Details**

Activity	Quantity	Unit Rate in US\$	Total US\$
1. Recruit MST Environment Safeguards Specialist	1	1,400/month	67,200 <sup>1</sup>
2. Recruit Specialize Local Environment Consulting Firm to supervise and report on compliance with the EMP.	1	10,000/year	40,000 <sup>1</sup>
3. Recruit MST Social Safeguards Specialist	1	1,400/month	67,200 <sup>1</sup>
4. Capacity Building and Training for CVDB and municipal operations staff and contractors (workshops).	2	10,000	20,000
5. Costs associated with mitigation measures to be added to physical contracts	multiple	5% of contract value	TBD
6. Miscellaneous.		5,000/year	25,000
<b>Total</b>			<b>219,400</b>

## ANNEXES

### Annex 1: JESSRP Consultation Participants and Photographs

<b>Irbid Municipality</b>		
No.	<i>Name</i>	<i>Organization</i>
1	QasemMostafaaldawood	Development Manager
2	Mohammad KherQasemJenbawee	
3	Abed Al-MajeedJaradat	Irbid Cultural Club
4	khaldoonFarhanNseir	local committee
5	AdeebAbabneh	Member- Sal District
6	Omar Jaradat	Member- Bushra District
7	ArefAwwad Al-Hlad	Member of Writers Association
8	Dr. Radwan Mahmoud Abu Ein	Dama Directorate/Irbid Governorate
9	Ahmad Al-Otoum	Irbid University
10	Mohammad Falah Al-Hori	Member- Hour District
11	MaisamIsmaeelSoboh	Member- Municipal Council
12	Dr. Shahadeh Al-Qora'an	Environmental Manager- Irbid Governorate
13	khaldoonHatamleh	Member- Municipal Council
14	Mousa Fayez Mousa	Manager of Al Farouq Cooperative
15	Bashar Neran	Journalist
16	Nawwaf Al-Share'	Member- Howara District
17	TradSayel Al Taani	Member- BeitRas District
18	Mohammad Saleh Al-Hazeem Al-No'man	Member- Marou District
19	FarooqQweiderGharaybeh	Member- Ma'd District
20	Nader Khatatbeh	Journalist- Al-Rai daily newspaper
21	Fayyad Al-Fawares	Head of Joint Services Committee- Irbid
22	Ahmad Al-Tamimi	Journalist- Al-Ghad daily newspaper
23	Dr. Mohammad Ghezlan	Education Directorate- Bani Obeid District
24	Mohammad Ameen Al-Khateeb	Education Directorate- Qasabet Irbid District
25	Bassam Al-Malkawi	Irbid Municipality- GIS
26	Mohammad Al-Tall	Irbid Municipality- GIS
27	Abdallah Al-Sheyyab	Lawyer
28	Ibrahim Al-Saeed	Member- District
29	Abdallah Mahdi	Member- District
30	Eng. HananHamad	Environmental Dept.- Irbid Governorate
31	Eng. Sameer Adel	Engineering Firm
32	Eng. Wafa' Mahmoud Asa'd	Jordan Environment Society
33	JojoAsa'd	Jordan Environment Society

34	Haifa Al-Safadi	Women Organization- Bride of the North
35	MajedBaniMa'afi	Head of Construction Contractors Association- North of Jordan
36	Fardous Al-Sheyyab	Jordanian Women Union
37	Awni Al-Bsool	Irbid Municipality
38	Lotfi Al-Qora'an	Jordanian Writers Association
39	Mohammad Mahasneh	Arar Cultural Foundation
40	Ibrahim Al-Batayneh	Member- Municipal Council
41	Abdel Kareem Al-Badarneh	Ex. Deputy Mayor
42	Eng. Hussien Al-Sheikh Hussein	Head of Local Development Unit
43	Eng. Huda Hijazi	Head of GIS Dept.- Municipality
44	Eng. Dyana Al-Rawabdeh	Planning Dept.- Municipality
45	Rotan Al-Sokhni	Cultural Dept.- Municipality
46	Eng. Riham Al-Jammal	Planning Dept.- Municipality
47	Eng. Qamar Al-Shennar	Planning Dept.- Municipality
48	Eng. Reem Abu Al-Rob	CVDB
49	Sari Abbadi	CVDB
50	Eng. Zeyad Tall	Mayor- Irbid Municipality
51	Eng. Qasem Al-Taweel	Engineering Firm
52	Eng. Ma'mounHyagneh	Irbid Municipality
53	Eng. Majed Al-Nemri	Head of Works Dept.- Irbid Municipality
54	Zeinab Ahmad	Member- Municipal Council
55	Haifa Haddad	Member- Municipal Council
56	Prof. Ahmad Al-Jawarneh	Yarmouk University
57	Fayyad Sabha	Contractor
58	Khaled Ali	Irbid Municipality
59	AnasKhaled	Irbid Municipality
60	Hussein Hawari	Services Committee- Irbid Camp
61	Ali Al-Amarat	Member- Municipal Council
62	SluimanTaleb	Citizen
63	Dr. Jaber Abu Naser	Puniversity Professor
64	Dr. SaleemAbabneh	Advisor
65	Raed Mohammad	Member- Municipal Council
66	FalahBani Hani	Merchant
67	Abdel SamadKhashef	Syrian Merchant
<b>AL-Mafraq Municipality</b>		
	<i>Name</i>	<i>Organization</i>
68	Abed Al-Rahman Al-Khateeb	Municipality
69	Heba Ibrahim Mashaqbeh	charity organization
70	AmalzayedAlodeh	Mafraq Municipality- Local Development Unit

71	HasanfahedRahebe	Mayor- Umm Al-Jemal Municipality
72	Eng. NajehShorfan	Mayor of Alsalheyeh&Nayfeh Municipality
73	Qasem Abu	Umm Al-Jemal Municipality
74	DalalMefleh Al-Shanableh	Mafraq Municipality- Local Development Unit
75	MofedaZawahreh	Member- Jordanian Juvenile & Orphans Association
76	ReemSleimanShdeifat	Jordanian Juvenile & Orphans Association
77	Mohammad Fadel Al-Hesban	Mafraq Municipality
78	Ahmad Hasan Al-N'eimi	Mafraq Municipality
79	Wael Mohammad	Mafraq Municipality
80	Marwan Abdel Majeed	Mafraq Municipality
81	AmalHusien Al-Rjoub	Mafraq Municipality
82	Hanan Ibrahim Mahmoud	Mafraq Municipality
83	SawsanKhader Al-Harashsheh	Mafraq Municipality
84	Salam Abdalla Al-Shebli	Mafraq Municipality
85	SumaiaFarhan Abu Oweida	Mafraq Municipality
86	AzezaMostafa	Mafraq Municipality
87	Fatima Jameel	Mafraq Municipality
88	MajedaHusien Al-Housban	Mafraq Municipality
89	Yaseen Al-Harashsheh	Mafraq Municipality
90	GhassanSrordShbeilat	Commercial Sector
91	A'asha Ali Rashed	Member- Municipal Council
92	AmnehMashaqbeh	Member- Municipal Council
93	Khadejae Al-Harashsheh	Chairman- Charity Associations Union
94	AmnehMaswadeh	CVDB
95	ReemHalloush	CVDB
96	Reem Abu Rob	CVDB
97	GhadaShaqour	World Bank
98	ShahrayarSarwar	DFATD- Canadian Govt.
99	SimaKanaan	World Bank
100	Anil Das	World Bank
101	HusienZayedMashaqbeh	
102	Ali HasanBadareen	
103	Dr. EngAbdallah Al-Tahhan	Charity organization
104	Sari Al-Abbadi	CVDB
105	SalamehMefleh Al-Zamel	Citizen
106	Kaled Al-Shebli	Mafraq Municipality
107	Eng. Mohammad Barkat Al-Omosh	Mafraq Municipality
108	AhedZeyadat	MOMA
109	Ahmad Ghesab Al-Hawamdeh	Mayor- Mafraq Municipality
110	Eng. Hayel Al-Omoush	City Manager- Mafraq Municipality
111	Eng. Nedal Al-Hourani	CVDB

112	Sami Salem	Member- Municipal Council
113	Eng. Ali Abu Sumaga	Director- Mafraq Water Directorate- Yarmouk Water Co.
114	Ismael Ahmad Abu Kadiri	Member- Municipal Council
115	Naser Abdalla Al-Shebli	Mafraq Youth Committee
116	Eng. Feras Al-Harashseh	Agricultural Engineers Ass.-Head of Mafraq Branch
117	Jameel Kherallah Khazaeleh	Rep.- Mafraq Youth Directorate
118	Eng. Abdalla Srour Ahmad	Head of District- Mafraq Municipality
119	Mohammad Abdalla Oweidat	Member- Municipal Council
120	Mohammad Khaled Al-Badareen	Irada Program- Mafraq Branch
121	Ahmad Al-Harashseh	Member- Municipal Council
122	Yosef Abdalla Abu	Member- Municipal Council
123	Aref Fares Al-Badareen	Member- Municipal Council
124	Mahdi Al-Hawamdeh	Inspection and Monitoring Director- Mafraq Municipality
125	Eng. Hani Al-Zyoud	Engineer- Mafraq Municipality
126	Eng. Abed Allah Elayyan	Agricultural Engineer- Mafraq Municipality
127	Eng. Abed Allah Al-Omouh	Director of Studies- Mafraq Municipality
<b>Sahel Horan Municipality</b>		
	<i>Name</i>	<i>Organization</i>
128	Hasna Khalidi	Member- Municipal Council
129	Salwa Shbool	Member- Municipal Council
130	Alia Qerba'	Member- Municipal Council
131	Huda Qerba'	Halimah Sa'deyah School
132	Suha Yaqoob	Halimah Sa'deyah School
133	Hind Darabseh	Member- Municipal Council
134	Fakhreya Shorman	Assistant- Amneh Bint Wahab School
135	Omar Janaydeh	Farmer- Local Council Al Torra
136	Ahmed Janaydeh	Citizen
137	Mohammad Janaydeh	Ja'far Bin Aby Taleb School
138	Faisal Janaydeh	Citizen
139	Omar Rshaidat	Head of Al Darabseh Charity Association
140	Ahmad Rshaidat	Citizen
141	Habis Darabseh	Al Darabseh Charity Association
142	Hussein Hijazi	Al Torra Charity Association Manager
143	Qasem Darabseh	Citizen
144	Majed Rshaidat	Member- Al Torra Charity Association
145	Yaseen Sokhni	Citizen
146	Naser Abu Zrayq	Citizen

147	Hussein Shbool	Citizen
148	Abdallah Abu Zrayq	Citizen
149	Iman Rshayd	Torra High School for Girls- Head Al Khansa' Women Association
150	Zohdeyeh Samara	Head of Al Torra Women Association
151	AbdallahRshaidat	Khaled Bin Waleed School
152	Mohammad Rshaidat	Citizen
153	Mohammad Hayek	Citizen
154	Noor Qerba'	Citizen
155	HasanJanaydeh	Citizen
156	MousaShbool	Citizen
157	MahmoodBarakat	Citizen
158	Mohammad Shbool	Citizen
159	FarhanRshaidat	Citizen
160	Isma'ISamman	Citizen
161	Mohammad Qerba'	
162	Mohammad Darabseh	Torra Sports Club
163	KhaledDarabseh	Torra Sports Club
164	Sari Al-Abbadi	CVDB
165	Reem Abu Al-Rob	CVDB
166	Omar Darabseh	Citizen
167	MajdAbdo	Sahel Horan Municipality
168	Mohammad Zraiqat	Citizen
169	HasanMa'ani	Citizen
170	Hussein Darabseh	Citizen
171	QasemDarabseh	Citizen
172	Abed Samara	Citizen
173	AbdelhafethQasem	Citizen
174	MahmoodShaheen	Citizen
175	Mohammad Ramadan	Citizen
176	AbdallahKhaboor	Citizen
177	Mohammad Khatib	Citizen
178	MahmoodWardat	Citizen
179	AbdelqaderAfifi	Citizen
180	FakhriWardat	Citizen
181	YahyaHmaisat	Citizen
182	HasanShbool	Citizen
183	AbdelrahmanJeen	Citizen
184	Ahmad Shbool	Citizen
185	KhaledJnaydi	Citizen
186	BahjatShbool	Citizen

187	Slayman Ramadan	Citizen
188	Ahmad Darabseh	Torra Sports Club
189	Mohammad Rshaidat	Torra Sports Club
190	Ahmad Abu Tabanjah	Citizen
191	MajedDarabseh	Citizen
192	BassamDarabseh	Citizen
193	EdrisShbool	Ramtha Education Directorate
194	KholqiShbool	Retired Colonel

PHOTOS OF STAKEHOLDER CONSULTATIONS FOR JESSRP PREPARATION



AL-MAFRAQ Municipality



**SAHEL HORAN Municipality**



## Annex 2: Chance Find Procedures

Contracts for civil works involving excavations should normally incorporate procedures for dealing with situations in which buried physical cultural resources (PCR) are unexpectedly encountered. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archaeology. For JESSRP, chance finds procedures contain the following elements:

### 1. PCR Definition

In some cases the chance finds procedure is confined to archaeological finds; more commonly it covers all types of PCR. In the absence of any other definition from the local cultural authorities, the following definition could be used: “movable or immovable objects, sites, structures or groups of structures having archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance”.

### 2. Ownership

The identity of the owner of the artifacts found should be ascertained if at all possible. Depending on the circumstances, the owner could typically be, for example, the state, the government, a religious institution, the land owner, or could be left for later determination by the concerned authorities.

### 3. Recognition

As noted above, in PCR-sensitive areas, recognition and confirmation of the specific PCR may require the contractor to be accompanied by a specialist. A clause on chance finds should be included in every contractor's specifications.

### 4. Procedure upon Discovery

#### *Suspension of Work*

If a PCR comes to light during the execution of the works, the contractor shall stop the works. Depending on the magnitude of the PCR, the contractor should check with MOMA for advice on whether *all works* should be stopped, or only the works immediately involved in the discovery, or, in some cases where large buried structures may be expected, all works may be stopped within a specified distance (for example, 50 meters) of the discovery. MOMA's decision should be informed by a qualified archaeologist.

After stopping work, the contractor must immediately report the discovery to the Resident Engineer. The contractor may not be entitled to claim compensation for work suspension during this period. The Resident Engineer may be entitled to suspend work and to request from the contractor some excavations at the contractor's expense if he thinks that a discovery was made and not reported.

#### *Demarcation of the Discovery Site*

With the approval of the Resident Engineer, the contractor is then required to temporarily demarcate, and limit access to, the site.

#### *Non-Suspension of Work*

The procedure may empower the Resident Engineer to decide whether the PCR can be removed and for the work to continue, for example in cases where the find is one coin.

#### *Chance Find Report*

The contractor should then, at the request of the Resident Engineer, and within a specified time period, make a *Chance Find Report*, recording:

- Date and time of discovery;

- Location of the discovery;
- Description of the PCR;
- Estimated weight and dimensions of the PCR;
- Temporary protection implemented.

The *Chance Find Report* should be submitted to the Resident Engineer, and other concerned parties as agreed with the cultural authority, and in accordance with national legislation. The Resident Engineer, or other party as agreed, is required to inform the cultural authority accordingly.

***Arrival and Actions of Cultural Authority***

The cultural authority undertakes to ensure that a representative will arrive at the discovery site within an agreed time such as 24 hours, and determine the action to be taken. Such actions may include, but not be limited to:

- Removal of PCR deemed to be of significance;
- Execution of further excavation within a specified distance of the discovery point;
- Extension or reduction of the area demarcated by the contractor.

These actions should be taken within a specified period, for example, 7 days. The contractor may or may not be entitled to claim compensation for work suspension during this period. If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), the Resident Engineer may have the authority to extend the period by a further stipulated time. If the cultural authority fails to arrive after the extension period, the Resident Engineer may have the authority to instruct the contractor to remove the PCR or undertake other mitigating measures and resume work. Such additional works can be charged to the contract. However, the contractor may not be entitled to claim compensation for work suspension during this period.

***Further Suspension of Work***

During this 7-day period, the Cultural authority may be entitled to request the temporary suspension of the work at or in the vicinity of the discovery site for an additional period of up to, for example, 30 days. The contractor may, or may not be, entitled to claim compensation for work suspension during this period. However, the contractor will be entitled to establish an agreement with the cultural authority for additional services or resources during this further period under a separate contract with the cultural authority.

## **Annex 3: World Bank Performance Standard on Labor and Working Conditions**

1. Performance Standard 2 recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. For any business, the workforce is a valuable asset, and a sound worker-management relationship is a key ingredient in the sustainability of a company. Failure to establish and foster a sound worker-management relationship can undermine worker commitment and retention, and can jeopardize a project. Conversely, through a constructive worker-management relationship, and by treating the workers fairly and providing them with safe and healthy working conditions, clients may create tangible benefits, such as enhancement of the efficiency and productivity of their operations.

2. The requirements set out in this Performance Standard have been in part guided by a number of international conventions and instruments, including those of the International Labour Organization (ILO) and the United Nations (UN).

- To promote the fair treatment, non-discrimination, and equal opportunity of workers.
- To establish, maintain, and improve the worker-management relationship.
- To promote compliance with national employment and labor laws.
- To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain.
- To promote safe and healthy working conditions, and the health of workers.
- To avoid the use of forced labor.

### **Application**

3. The applicability of this Performance Standard is established during the environmental and social risks and impacts identification process. The implementation of the actions necessary to meet the requirements of this Performance Standard is managed through the client's Environmental and Social Management System (ESMS), the elements of which are outlined in Performance Standard 1.

4. The scope of application of this Performance Standard depends on the type of employment relationship between the client and the worker. It applies to workers directly engaged by the client (direct workers), workers engaged through third parties to perform work related to core business processes<sup>3</sup> of the project for a substantial duration (contracted workers), as well as workers engaged by the client's primary suppliers (supply chain workers).<sup>4</sup>

#### *Direct Workers*

5. With respect to direct workers, the client will apply the requirements of paragraphs 8–23 of this Performance Standard.

#### *Contracted Workers*

6. With respect to contracted workers, the client will apply the requirements of paragraphs 23–26 of this Performance Standard.

#### *Supply Chain Workers*

7. With respect to supply chain workers, the client will apply the requirements of paragraphs 27–29 of this Performance Standard.

## **Requirements**

### **Working Conditions and Management of Worker Relationship**

#### *Human Resources Policies and Procedures*

8. The client will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law.

9. The client will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

#### *Working Conditions and Terms of Employment*

10. Where the client is a party to a collective bargaining agreement with a workers' organization, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment,<sup>5</sup> the client will provide reasonable working conditions and terms of employment.

11. The client will identify migrant workers and ensure that they are engaged on substantially equivalent terms and conditions to non-migrant workers carrying out similar work.

12. Where accommodation services are provided to workers covered by the scope of this Performance Standard, the client will put in place and implement policies on the quality and management of the accommodation and provision of basic services.<sup>8</sup> The accommodation services will be provided in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association.

#### *Workers' Organizations*

13. In countries where national law recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The client should not seek to influence or control these mechanisms.

14. In either case described in paragraph 13 of this Performance Standard, and where national law is silent, the client will not discourage workers from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining. The client will engage with such workers' representatives and workers' organizations, and provide them with information needed for meaningful negotiation in a timely manner. Workers' organizations are expected to fairly represent the workers in the workforce.

#### *Non-Discrimination and Equal Opportunity*

15. The client will not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The client will base the employment relationship on the principle of equal opportunity and fair treatment, and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. The client will take measures to prevent and

address harassment, intimidation, and/or exploitation, especially in regard to women. The principles of non-discrimination apply to migrant workers.

16. In countries where national law provides for non-discrimination in employment, the client will comply with national law. When national laws are silent on non-discrimination in employment, the client will meet this Performance Standard. In circumstances where national law is inconsistent with this Performance Standard, the client is encouraged to carry out its operations consistent with the intent of paragraph 15 above without contravening applicable laws.

17. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job will not be deemed as discrimination, provided they are consistent with national law.

#### *Retrenchment*

18. Prior to implementing any collective dismissals,<sup>10</sup> the client will carry out an analysis of alternatives to retrenchment.<sup>11</sup> If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers. The retrenchment plan will be based on the principle of non-discrimination and will reflect the client's consultation with workers, their organizations, and, where appropriate, the government, and comply with collective bargaining agreements if they exist. The client will comply with all legal and contractual requirements related to notification of public authorities, and provision of information to, and consultation with workers and their organizations.

19. The client should ensure that all workers receive notice of dismissal and severance payments mandated by law and collective agreements in a timely manner. All outstanding back pay and social security benefits and pension contributions and benefits will be paid (i) on or before termination of the working relationship to the workers, (ii) where appropriate, for the benefit of the workers, or (iii) payment will be made in accordance with a timeline agreed through a collective agreement. Where payments are made for the benefit of workers, workers will be provided with evidence of such payments.

#### *Grievance Mechanism*

20. The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

### **Protecting the Work Force**

#### *Child Labor*

21. The client will not employ children in any manner that is economically exploitative, or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. The client will identify the presence of all persons under the age of 18. Where national laws have provisions for the employment of minors, the client will follow those laws applicable to the client. Children under the age of 18 will not be employed in hazardous work.<sup>12</sup> All work of persons under the age of 18 will be subject to an appropriate risk assessment and regular monitoring of health, working conditions, and hours of work.

#### *Forced Labor*

22. The client will not employ forced labor, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements. The client will not employ trafficked persons.

### **Occupational Health and Safety**

23. The client will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The client will take steps to prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice, as reflected in various internationally recognized sources including the World Bank Group Environmental, Health and Safety Guidelines, the client will address areas that include the (i) identification of potential hazards to workers, particularly those that may be life-threatening; (ii) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) training of workers; (iv) documentation and reporting of occupational accidents, diseases, and incidents; and (v) emergency prevention, preparedness, and response arrangements. For additional information related to emergency preparedness and response refer to Performance Standard 1.

### **Workers Engaged by Third Parties**

24. With respect to contracted workers the client will take commercially reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the requirements of this Performance Standard, except for paragraphs 18–19, and 27–29.

25. The client will establish policies and procedures for managing and monitoring the performance of such third party employers in relation to the requirements of this Performance Standard. In addition, the client will use commercially reasonable efforts to incorporate these requirements in contractual agreements with such third party employers.

26. The client will ensure that contracted workers, covered in paragraphs 24–25 of this Performance Standard, have access to a grievance mechanism. In cases where the third party is not able to provide a grievance mechanism the client will extend its own grievance mechanism to serve workers engaged by the third party.

### **Supply Chain**

27. Where there is a high risk of child labor or forced labor<sup>15</sup> in the primary supply chain, the client will identify those risks consistent with paragraphs 21 and 22 above. If child labor or forced labor cases are identified, the client will take appropriate steps to remedy them. The client will monitor its primary supply chain on an ongoing basis in order to identify any significant changes in its supply chain and if new risks or incidents of child and/or forced labor are identified, the client will take appropriate steps to remedy them.

28. Additionally, where there is a high risk of significant safety issues related to supply chain workers, the client will introduce procedures and mitigation measures to ensure that primary suppliers within the supply chain are taking steps to prevent or to correct life-threatening situations.

29. The ability of the client to fully address these risks will depend upon the client's level of management control or influence over its primary suppliers. Where remedy is not possible, the client will shift the project's primary supply chain over time to suppliers that can demonstrate that they are complying with this Performance Standard.

## **Annex 4: TOR for Socio-Economic Household Survey on the Impact of the Syrian Crisis on Jordanian Host Communities in Irbid and Mafraq**

**1. Job title:** Household Survey in the governorates of Mafraq and Irbid.

**2. Duty station:** Jordan

**3. Practice area:** Poverty

**4. Brand:** UNDP

**5. Type of contract:** Professional Services

**6. Languages required:** Arabic and English

**7. Assignment starting date (expected):** 15/9/ 2013

**8. Duration of initial contract:** 10 weeks

### **1. Objective**

To provide an evidence-base of the impact of the Syrian refugees influx on the socio-economic status of the Jordanians in the Northern Governorates of Jordan (Mafraq and Irbid).

### **2. Justification**

Several assessments have been conducted over the past months on the needs of Syrian refugees in urban settings. However, to the exception of a couple of qualitative assessments and needs analyses, the needs of Jordanian communities that are host to a large Syrian refugee population and the impact of the Syrian refugee influx on them are not sufficiently evidenced.

This is hampering governmental and partners' efforts to devise and prioritize adequate response interventions. This is of particular importance as the possibility of social tensions arising between Jordanian and Syrian communities is now widely acknowledged by all. A rapid but thorough assessment of the need impact on the social and economic situation in the host communities is important to identify the impact of the crisis and to design projects for interventions. The survey will cater for a sample to be representative at the sub-district level.

### **3. Scope**

#### **a. Geographical scope**

The household survey will be conducted in the Northern Governorates that are host to the highest number of refugees, including:

- Irbid
- Mafraq

#### **b. Thematic scope**

As presented in the purpose section above, the household survey's objective is to assess the current socio-economic situation of Jordanian host communities in regard to the Syrian refugee influx and the crisis in Syria, versus the situation in 2010 HEIS Survey.

At the outset of the household survey, responses shall be clearly provided to address the following issues:

- Change in employment status due to the Syrian refugee influx / crisis in Syria (loss of job, change of job), disaggregated by gender and age (youth/not youth)
- Change in income status (loss of income, change of income source, increased income)

- Change in HH expenditures (source of change, general price inflation, specific price inflation)
- Change in water availability and source (water network / purchasing water)
- Change in accessibility and quality of other basic services (education, health, sanitation, solid waste management, municipal services)
- Priority needs
- Perception of the household towards the Syrian refugee presence

The most relevant available baseline survey that could be used for comparison and trend analysis is the Household Income and Expenditure Survey (HIES) of 2010. In order to facilitate the comparison process, the proposed survey will adapt the relevant modules of the HIES, and, in particular the ones related to:

- Socio-Economic Characteristics
- Income and expenditure
- Employment status

These three modules will be complemented by additional questions to further clarify the impact of the Syrian refugee crisis on the household. In addition to the above, the survey will strive to adapt HIES questions with relevance to the current situation of Jordanian households' vis-à-vis the Syrian refugee crisis and the crisis in Syria in the following sectors:

- Education (how are the education conditions today)
- Health (same as above)
- Water and sanitation (same as above)
- Solid waste management and municipal services (same as above)
- Housing (same as above)

The survey will also capture household assessment of priority needs between the various sectors. Finally, the survey will endeavour to capture information related to the current community environment, and to issues related to social cohesion, possible sources of tension, perception of the other community, and perception of aid practices.

#### **4. Implementation process**

The household survey will be undertaken, using the appropriate sampling frames, methodology and sampling. The contracted agency will provide the expertise on survey design and sampling, and will contract the enumerators needed and provide necessary data training to collect and provide data. The contracted agency will perform data sampling, data entry, labelling clean-up, and descriptive analysis. The survey will be representative for Jordanian households at the sub district level.

The contracted agency will also provide UNDP with the following:

- Raw data in SPSS format with labels for a representative Jordan households sample at the sub district level
- Dummy tables for 2013 of the governorates of Mafraq and Irbid as provided by UNDP.
- Descriptive report (after 2 weeks of the raw data delivery)
- Comparison between 2010, 2013 results based on the dummy table design provided by UNDP

#### **5. Timeline**

The contracted agency shall provide the raw data of the survey no later than 31 October 2013. From the date of signature of the contract with the contracted agency, the following timeline is envisaged:

- Preparatory work (2 week): survey design, questionnaire elaboration, sampling,
- Field work (4 weeks)
- Data entry, clean-up, and data set elaboration(2 weeks)
- Report drafting and finalization (descriptive Report and dummy tables) (2 week)

## **6. Qualifications and Skills Requirements**

The contracted agency shall secure all experts needed to execute the survey, including the needed numbers of qualified and experienced researchers, enumerators, data entry staff, and statisticians.

The contracted agency in general should have:

- Proven experience in developing and implementing similar surveys and needs assessments.
- Experience in using survey softwares.
- Demonstrated ability to work and collaborate with a wide range of local and international partner organizations,
- Ability to recruit and train enumerators.
- The required professional staff.

## **7. Outputs**

The outputs of the consultancy will comprise:

- Inception Report to include:
  - A clear methodology.
  - A detailed work plan with clear time frame.
  - A detailed plan for conducting the survey and analysis of the information generated.
  - A list of relevant information, documents required in order to complete the assignment;
  - A list of the firm technical staff nominated to this assignment with their CVs.
  - Previous experience in conducting similar projects.
- A set of data collection tools, including the tested survey instrument.
- Electronic copy of raw data collected with labels.
- Final detailed descriptive report.

All reports shall be submitted in English and Arabic. Draft copies of reports may be submitted by electronic mail. An electronic copy and three hard copies of the Final Report formatted in Microsoft Word/Excel shall be submitted.

The contracted agency shall ensure the timely submission of these outputs to UNDP who will ensure the timely review and acceptance of the reports, not more than two (2) weeks after the receipt of the reports from the contracted agency.

All reports and documents relevant to this Consultancy including field survey notes, computer programmes, etc. shall become the property of UNDP.

## Annex 5: Screening Checklist for Assessment of Environmental and Social Impacts

Name of the /Municipality: \_\_\_\_\_

Governorate: \_\_\_\_\_

Subproject Name/Activity:

Sub-Project Representative and Contact Information:

### I. Subproject Screening Part A.

a. Has the subproject been screened against the list of ineligible activities (negative list) below?

The negative list includes activities **not eligible for financing under the JESSRP as follows:**

- If the subproject is likely to have **significant adverse environmental impacts that are sensitive, diverse, or unprecedented** (see Bank OP 4.01, paragraph 8, item (a) on Category A designation);
- Conversion or degradation of **natural habitats** (see Bank OP 4.04);
- Production or activities that impinge on the lands owned, or claimed under adjudication, by **indigenous peoples**, without full documented consent of such people (see Bank OP 4.10);
- Impact on **forest** health and/or safety and/or that aim to bring about changes in the management, protection, or utilization of natural forests or plantations, whether they are publicly, privately, or communally owned (see Bank OP 4.36);
- **Dam construction or dam rehabilitation** (see Bank OP 4.37);
- Production or trade in **wood or other forestry products** from unmanaged forests;
- Production or activities involving harmful or exploitative forms of forced labor / harmful **child labor**;
- Production or trade in any product or **activity deemed illegal** under HkoJ laws or regulations or international conventions and agreements;
- Production or trade in **weapons and munitions**;
- **Gambling, casinos** and equivalent enterprises;
- Trade in **wildlife or wildlife products** regulated under CITES;
- Production or trade in **radioactive materials**;
- Production or trade in or use of unbonded **asbestos** fibers;
- Production or trade in products containing **PCBs**;
- Production, trade, storage, or transport of significant volumes of **hazardous chemicals**, or commercial scale usage of hazardous chemicals;
- Production or trade in **pharmaceuticals** subject to international phase outs or bans;
- Production or trade in **pesticides / herbicides subject to international phase outs or bans** (see JESSRP Pest Management Plan for more details);
- Production or trade in **ozone depleting substances** subject to international phase out.

If NO to all of the above list items, then proceed to Subproject Screening Part B. If YES to any one or more of the above, this subproject cannot be financed.

## II. Subproject Screening Part B.

Does the subproject involve ... ?	Y/N	Then ...
Solid waste collection equipment and services?		Apply TEG #1 (see Annex 7)
Water and sewerage portable equipment and services?		Apply TEG #2 (see Annex 7)
Maintenance and/or rehabilitation of public wells?		Apply TEG #3 and tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses (see Annexes 7 and 8)
Maintenance and/or rehabilitation of existing: * roads and sidewalks? * parks and/or community recreational spaces? * libraries? * community centers? * women's and youth centers? * cemeteries?		Apply TEG #4 and tender documents signed in accordance with Jordanian regulations and World Bank safeguards clauses (see Annexes 7 and 8)
New construction or footprint expansion of: * roads and sidewalks? * parks and/or community recreational spaces? * libraries? * community centers? * women's and youth centers? * cemeteries?		Apply TEG #4 and tender documents signed in accordance with the Jordanian regulations and World Bank safeguards clauses (see Annexes 7 and 8)  AND  Design and apply a site-specific EMP (see Annex 6)  AND  Proceed to Subproject Screening Part C below
Fumigation vehicles, insecticides, and/or rodenticides?		Apply TEG #5 and apply Pest Management Plan (see Annexes 7 and 10)

## III. Subproject Screening Part C.

In the case that any civil work involves any new construction on a current property or footprint expansion of a currently-existing public site, please answer the following questions ...

Is it possible that this sub-project ...?	Y/N
Requires the acquisition of private land (temporarily or permanently) for its development?	
Restricts access to natural resources (e.g. pasture, fishing locations and forests) occur for households and communities as a result of this subproject?	
Results in the involuntary relocation of individuals, families, or businesses?	
Results in the temporary or permanent loss of economic activities, like crops, fruit trees, businesses, household infrastructures (such as granaries, outside toilets and kitchens, etc.)?	
Results in adverse impacts on individuals or entities encroaching on state lands?	

If any of the above answers is “YES”, then refer to and apply the Resettlement Policy Framework.

### III. Subproject Screening Part D.

In the case that any civil work involves any new construction on a current property or footprint expansion of a currently-existing public site , please answer the following questions ...

Is it possible that this sub-project ...?	Y/N
Involves significant excavations, demolition, movement of earth, flooding or other environmental changes?	
Is located in, or in the vicinity of, a place with spiritual or cultural meaning, has historic value, or might contain historical artifacts?	

If any of the above answers is “YES”, then refer to and apply Annex 2 on Chance Find Procedures.

<p><b><u>Step 1: Assessed/prepared by:</u></b></p> <p>Name: _____</p> <p>Engineer Municipality</p> <p>Date: _____</p>	<p><b><u>Step 2: Reviewed and corrected by</u></b></p> <p>Name: _____</p> <p>MST Safeguards Consultant/CVDB</p> <p>Date: _____</p>
<p><b><u>Step 3: Approved by:</u></b></p> <p>Name: _____</p> <p>Mayor, Municipality</p> <p>Date: _____</p>	<p><b><u>Step 4: Endorsed by:</u></b></p> <p>Name: _____</p> <p>MST Safeguard Specialist/CVDB</p> <p>Date: _____</p>

## Annex 6: Terms of Reference for EMP

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

**Summary of impacts:** The predicted adverse environmental and social impacts for which mitigation is required should be identified and briefly summarized.

**Description of mitigation measures:** The EMP identifies feasible and cost effective measures to reduce potentially significant adverse environmental and social impacts to acceptable levels. Each mitigation measure should be briefly described with reference to the impact to which it relates and the conditions under which it is required (for example, continuously or in the event of contingencies). These should be accompanied by, or referenced to, designs, equipment descriptions, and operating procedures which elaborate on the technical aspects of implementing the various measures. Where the mitigation measures may result in secondary impacts, their significance should be evaluated.

**Description of monitoring program:** Environmental performance monitoring should be designed to ensure that mitigation measures are implemented, have the intended result, and that remedial measures are undertaken if mitigation measures are inadequate or the impacts have been underestimated within the ESIA report. It should also assess compliance with national standards and World Bank Group requirements or guidelines.

The monitoring program should clearly indicate the linkages between impacts identified in the ESIA report, indicators to be measured, 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, and so forth. Although not essential to have complete details of monitoring in the EMP, it should describe the means by which final monitoring arrangements will be agreed.

**Institutional arrangements:** Responsibilities for mitigation and monitoring should be clearly defined. The EMP should identify arrangements for coordination between the various actors responsible for mitigation.

The EMP table should look as follows (see next page):

*Environmental Management Plan*

*A. Mitigation*

<i>Project Activity</i>	<i>Potential Environmental and Social Impacts</i>	<i>Proposed Mitigation Measure(s)</i> <i>(Incl. legislation &amp; regulations)</i>	<i>Institutional Responsibilities</i> <i>(Incl. enforcement &amp; coordination)</i>	<i>Cost Estimates</i>	<i>Comments</i> <i>(e.g. secondary impacts)</i>
Pre-Construction Phase					
Construction Phase					
Operation and Maintenance Phase					

*Environmental Management Plan*

*B. Monitoring*

<i>Proposed Mitigation Measure</i>	<i>Parameters To be Monitored</i>	<i>Location</i>	<i>Measurements (Incl. methods &amp; equipment)</i>	<i>Frequency of Measurement</i>	<i>Responsibilities (Incl. review and reporting)</i>	<i>Cost (equipment &amp; individuals)</i>
Pre-Construction Phase						
Construction Phase						
Operation and Maintenance Phase						
Total Cost for all Phases						

## Annex 7: Technical Environmental Guidelines

<b>TEG #</b>	<b>Activity</b>	<b>Primary Impact</b>	<b>Assessment Level</b>
1	Solid waste collection equipment and services	Proper technical support on management will lead to positive environmental impact	Low
2	Water and sewerage portable equipment and services		
3	Rehabilitation &/or maintenance of public wells	Environmental impacts can be mitigated with technical support and water quality testing	Medium
4	Construction of new roads and sidewalks, maintenance of existing roads and sidewalks	Environmental impacts can be mitigated with technical support for design and construction	<p>Medium/High</p> <p>Medium if rehabilitation with no OP 4.12 issues.</p> <p>High if any expansion of footprint and/or new construction</p> <p>Or if there are any OP 4.12 issues</p>
	Parks and other community recreational spaces	OP 4.12 screening questions must be applied. If any questions are positive, an ARAP or RAP must be drafted and applied	
	Libraries		
	Community centers		
	Women's and youth centers		
Construction and expansion of cemeteries			
5	Fumigation vehicles, insecticides, and or rodenticides	Usage of WHO/World Bank approved chemicals exclusively	Low

**Specific Technical Environmental Guideline (TEGs) for TEG1: Solid waste collection equipment and services**

Possible Issues	Mitigation Measures	Details of support/supervision for implementation of mitigation measures
Unlicensed vehicles as municipality liability	Small transfer vehicles should be licensed per municipality or GoJ regulation	Vehicles have licenses
Improper driving and/or collection transfer	Solid waste vehicle drivers should be appropriately training and licensed	Drivers have appropriate and current licenses
Area operations shall not result in the generation of odors, litter, dust, leachate, or any other negative environmental impacts	Insufficient collection units so that solid waste is dumped outside of collection units	Photographic inspection of collection sites, especially before and after
Unrealistic daily routing of collection vehicles and estimates of weight to be picked up at each collection point	All waste collected at the collection unit or by the transfer vehicles shall be removed to a collection point by the end of each operating day	Municipality solid waste records
Lack of compliance with all applicable municipality and GoJ solid waste regulations	Operators of a small transfer vehicle need initial and refresher training	Appropriate training

**Environmental Actions Agreement Form for TEG1  
Solid waste collection equipment and services**

<b>Environmental Actions Agreement Form 1: Waste collection equipment and services</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
We propose to engage in the following specific activity:  We have participated in the environmental assessment of this activity using the TEG #1:  We have also received technical support from _____ in this assessment process. We agree to undertake the following actions in order to mitigate any negative environmental impacts: <input type="checkbox"/> I/we agree to dump solid waste only in authorized areas <input type="checkbox"/> I/we agree to drive according to municipal and/or commercial vehicular rules <input type="checkbox"/> I/we agree to make use of proper protective equipment so as to avoid the spread of disease to oneself and/or others
Signature:  Name:  Title:  Contact information of the Responsible Authority for this subproject (cell and/or work phone):

**Specific Technical Environmental Guideline (TEGs) for TEG2:  
Water delivery and/or sewerage collection equipment and services**

<b>Possible Issues</b>	<b>Mitigation Measures</b>	<b>Details of support/supervision for implementation of mitigation measures</b>
Unlicensed vehicles as municipality liability	Small transfer vehicles should be licensed per municipality or GoJ regulation	Vehicles have licenses
Improper driving and/or collection transfer	Water delivery and/or sewerage vehicle drivers should be appropriately training and licensed	Drivers have appropriate and current licenses
Lack of compliance with all applicable municipality and GoJ solid waste regulations	Operators of a small vehicles need initial and refresher training	Appropriate training

<b>Specific to water delivery (in addition to the above)</b>		
Contamination of source water	Regularly test water sample of existing drinking water source to ensure that it is safe	See Annex 3 for specific parameters
Spread of water borne diseases	Provide clean delivery lines and mechanisms of transfer Use personal protective equipment for operations	
Groundwater depletion	Implement YWC water conservation measures through Municipality public awareness programs	Coordination between relevant municipal departments and Yarmouk Water Company

<b>Specific to sewerage collection (in addition to the above)</b>		
Contamination of water source/ground water (sewerage)	Discharge waste water only at sites appropriately designated by Municipality and/or YWC	Driver records
Unrealistic daily routing of collection vehicles and estimates of mass to be picked up at each collection point	All sewerage collected at the collection unit or by the transfer vehicles shall be removed to a collection point by the end of each operating day	Municipality sewerage waste records

**Environmental Actions Agreement Form for TEG2:  
Water delivery and/or sewerage collection equipment and services**

<b>Environmental Actions Agreement Form 2A: Water delivery equipment and services</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
We propose to engage in the following specific activity:  We have participated in the environmental assessment of this activity using the TEG #2A: We have also received technical support from _____ in this assessment process. We agree to undertake the following actions in order to mitigate any negative environmental impacts: <input type="checkbox"/> I/we agree to deliver water to municipality-authorized locations, in municipality-authorized quantities <input type="checkbox"/> I/we agree to drive according to municipal and/or commercial vehicular rules <input type="checkbox"/> I/we agree to make use of proper protective equipment to avoid the spread of disease to oneself and/or others
Signature:  Name:  Title:  Contact information of the Responsible Authority for this subproject (cell and/or work phone):

<b>Environmental Actions Agreement Form 2B: Sewerage collection equipment and services</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
We propose to engage in the following specific activity:  We have participated in the environmental assessment of this activity using the TEG #2B: We have also received technical support from _____ in this assessment process. We agree to undertake the following actions in order to mitigate any negative environmental impacts: <input type="checkbox"/> I/we agree to dump sewerage only in authorized areas. This includes away from any water sources, communities, or active agricultural areas. <input type="checkbox"/> I/we agree to drive according to municipal and/or commercial vehicular rules <input type="checkbox"/> I/we agree to make use of proper protective equipment so as to avoid the spread of disease to oneself and/or others
Signature:  Name:  Title:

Contact information of the Responsible Authority for this subproject (cell and/or work phone):

**Specific Technical Environmental Guideline (TEGs) for TEG3:  
Rehabilitation and/or maintenance of public wells**

Possible Issues	Mitigation Measures	Details of support/supervision for implementation of mitigation measures
Depletion of unconfined aquifer and lowering of water table	Adopt well recharge methods. Take technical support for design and construction of appropriate recharge structure, if possible  Encourage and/or adopt practices that contribute to optimum water utilization and reduce water losses  Encourage renovation of existing structures for cost-effectiveness	Training on water conservation measures  Timely maintenance to reduce water losses
Contamination of water sources / groundwater	Test the water sample prior to design phase  Ensure that the facility is away from any septic tanks and/or waste disposal sites	See Annex 3 for water quality parameters  Correct scoping and design placement
Breeding ground for water-borne vectors	Provide a suitable cover over open wells  Design and maintain so that there is no standing water around the well	Sensitization and training of water well workers
Diesel pumps may pollute air and/or create sound pollution	Do not use adulterated fuel Ensure that the pump is fixed properly to the base to avoid excessive vibration	Municipality regulation of diesel fuel Proper training
Well may not be properly recorded	Before design and/or works, secure permit both for well site as well as for well rehabilitation/construction from responsible authority	Coordination with Yarmouk Water Company Proper documentation and filing of well registration records

**Environmental Actions Agreement Form for TEG3  
Rehabilitation and/or maintenance of public wells**

<b>Environmental Actions Agreement Form 3: Rehabilitation and/or maintenance of public wells</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
We propose to engage in the following specific activity:  We have participated in the environmental assessment of this activity using the TEG #1:  We have also received technical support from _____ in this assessment process.  We agree to undertake the following actions in order to mitigate any negative environmental impacts: <input type="checkbox"/> I/we agree to adopt water-conservation measures specific to well water extraction <input type="checkbox"/> I/we agree to test and report water quality parameters as required by the relevant agency <input type="checkbox"/> I/we agree to reduce and/or eliminate standing water near this well or wells <input type="checkbox"/> I/we agree to use proper diesel fuel <input type="checkbox"/> I/we agree to conduct and keeps records of regular maintenance on the well and any related equipment <input type="checkbox"/> I/we agree to secure and keep on file proper documentation that the well is recorded with the relevant authorities
Signature:  Name:  Title:  Contact information of the Responsible Authority for this subproject (cell and/or work phone):

**Specific Technical Environmental Guideline (TEGs) for TEG4:  
Maintenance of existing public facilities, Construction of new public facilities**

Possible Issues	Mitigation Measures	Details of support/supervision for implementation of mitigation measures
Ensure that all construction is on public land with no encumbrances	Prepare a ARAP or RAP as detailed in the RPF	Apply OP 4.12 questionnaire
Lack of community information	Erect signage with details of project, cost of project, projected length of project, and contact details	Include in construction tender
Worker accidents	Apply Environmental Health, and Safety Guidelines (EHS) specific to construction	Supervisory engineer training of workers, enforcement and reporting
Changes in land use	Land use and design must be approved by qualified engineer	Coordination with relevant Municipality departments (engineering, traffic, etc.) to ensure that the design and supervision of construction is done by a qualified civil engineer and team
Air quality disruptions to community	See EHS Guidelines, with quantifiable monitoring for site-specific EMPs	
Noise disruptions to community	See EHS Guidelines, with with quantifiable monitoring for site-specific EMPs	
Loss of human life in accidents	Prepare adequate diversion signage for construction	
Obstructions in natural drainage systems	Proper survey and identification of natural drains should be done before starting the construction activity  Provision of artificial drains should be made if natural drains are being diverted  Runoff water should be diverted through appropriate channels	
Loss of vegetation during land preparation/construction	Municipal design for appropriate restoration	
Appropriate construction debris removal	Site-specific construction debris management and removal plan	
Install proper public lighting for safety	Construction plans should include electricity for safety as needed	
Lack of post-construction signage	Construction plans should include replacement and/or new signage for both traffic and addressing	

**Environmental Actions Agreement Form for TEG4**  
**Maintenance of existing public facilities, Construction of new public facilities**

<b>Environmental Actions Agreement Form 4: Maintenance of existing public facilities, Construction of new public facilities</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
<p>We propose to engage in the following specific activity:</p> <p>We have participated in the environmental and social assessment of this activity using the TEG #4:</p> <p>We have also received technical support from _____ in this assessment process.</p> <p>We have completed the OP 4.12 questionnaire and it is attached as follows:  Any sub-project which answers 'yes' to any of the following four questions would automatically be classified by CVDB as ineligible:</p> <ul style="list-style-type: none"> <li>(a) Will the project require the acquisition of land (public or private, temporarily or permanently) for its development? Circle YES or NO</li> <li>(b) Will anyone be prevented from using economic resources (e.g. pasture, fishing locations, forests) to which they have had regular access? Circle YES or NO</li> <li>(c) Will the project result in the involuntary resettlement of individuals or families? Circle YES or NO</li> <li>(d) Will the project result in the temporary or permanent loss of economic activities, like crops, fruit trees, workshops, household infrastructures (such as granaries, outside toilets and kitchens, etc.)? Circle YES or NO</li> </ul> <p>We agree to undertake the following actions in order to mitigate any negative environmental impacts:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I/we agree to adhere to and enforce proper worker health and safety guidelines</li> <li><input type="checkbox"/> I/we agree to keep the affected community informed through publically-visible signage</li> <li><input type="checkbox"/> I/we agree to provide adequate diversion and protection to pedestrians and vehicles</li> <li><input type="checkbox"/> I/we agree to provide for adequate water drainage</li> <li><input type="checkbox"/> I/we agree to manage and dump construction debris as regulated by the Municipality</li> <li><input type="checkbox"/> I/we agree to design and ensure that provisions are made for any outdoor or indoor lighting as needed for safety</li> <li><input type="checkbox"/> I/we agree to design and ensure that provisions are made for the restoration of any trees or other ecology</li> <li><input type="checkbox"/> I/we agree to design and ensure that provisions are made for appropriate traffic and addressing signage</li> <li><input type="checkbox"/> If this is <b>new construction</b>, a site-specific EMP must be attached to this form.</li> </ul>
Signature:
Name:
Title:
Contact information of the Responsible Authority for this subproject (cell and/or work phone):

**Specific Technical Environmental Guideline (TEGs) for TEG5:  
Fumigation vehicles, pesticides, rodenticides, any chemical vector controls**

Possible Issues	Mitigation Measures	Details of support/supervision for implementation of mitigation measures
Use of hazardous chemical pesticides (impact on human and environmental health)	Integrated pest management without the use of pesticides in Class 1A, Class 1B, and Class 2	Coordination with Department of Agriculture and MOMA for any questions related to WHO classification of pesticides
	Use of efficient spraying equipment to prevent wastage and contamination	Procurement and provision of safety equipment (e.g. gloves, masks) and efficient spraying equipment.
	Use of safety measures and gear while transporting, mixing, using, and/or disposing pesticides	Training of workers in building awareness in safety issues in pesticide use and guidelines for safe transport, mixing, use, and disposal
	Spraying between hours of midnight and 5 am	Municipal records kept

**Environmental Actions Agreement Form for TEG5  
Fumigation vehicles, pesticides, rodenticides, any chemical vector controls**

<b>Environmental Actions Agreement Form 5: Fumigation vehicles, pesticides, rodenticides, any chemical vector controls</b>
Specific activity or procurement items:
Assessed by: Title of Assessor: Date of Assessment:
<p>We propose to engage in the following specific activity:</p> <p>We have participated in the environmental assessment of this activity using the TEG #4:</p> <p>We have also received technical support from _____ in this assessment process.</p> <p>We agree to undertake the following actions in order to mitigate any negative environmental impacts:</p> <p><input type="checkbox"/> I/we agree to make use of non-chemical IPM methods first and foremost</p> <p><input type="checkbox"/> I/we agree not to purchase or make use of WHO-classified Class 1A, Class 1B, or Class 2 pesticides with any JESSRP funds</p> <p><input type="checkbox"/> I/we agree to make use of efficient spraying equipment to prevent wastage and contamination</p> <p><input type="checkbox"/> I/we agree to procure and provide for workers proper safety equipment (e.g. gloves, masks) equipment.</p> <p><input type="checkbox"/> I/we agree to train workers in safe pesticide use and guidelines for safe transport, mixing, use, and disposal</p> <p><input type="checkbox"/> I/we agree to spray only between the hours of midnight and 5 am</p>
Signature:
Name:
Title:
Contact information of the Responsible Authority for this subproject (cell and/or work phone):

## **Annex 8: Safeguards Procedures for Inclusion in the Technical Specifications of Contracts for Civil Works (Rehabilitation and New Construction)**

### **I. General**

1. The Contractor and his employees shall adhere to the mitigation measures set down and take all other measures required by the Engineer to prevent harm, and to minimize the impact of his operations on the environment.
2. The Contractor shall not be permitted to unnecessarily strip clear the right of way. The Contractor shall only clear the minimum width for construction and diversion roads should not be constructed alongside the existing road.
3. Remedial actions which cannot be effectively carried out during construction should be carried out on completion of each Section of the road (earthworks, pavement and drainage) and before issuance of the Taking Over Certificate:
  - (a) these sections should be landscaped and any necessary remedial works should be undertaken without delay, including grassing and reforestation;
  - (b) water courses should be cleared of debris and drains and culverts checked for clear flow paths; and
  - (c) borrow pits should be dressed as fish ponds, or drained and made safe, as agreed with the land owner.
4. The Contractor shall limit construction works to between 6 am and 7 pm if it is to be carried out in or near residential areas.
5. The Contractor shall avoid the use of heavy or noisy equipment in specified areas at night, or in sensitive areas such as near a hospital.
6. To prevent dust pollution during dry periods, the Contractor shall carry out regular watering of earth and gravel haul roads and shall cover material haulage trucks with tarpaulins to prevent spillage.

### **II. Transport**

7. The Contractor shall use selected routes to the project site, as agreed with the Engineer, and appropriately sized vehicles suitable to the class of road, and shall restrict loads to prevent damage to roads and bridges used for transportation purposes. The Contractor shall be held responsible for any damage caused to the roads and bridges due to the transportation of excessive loads, and shall be required to repair such damage to the approval of the Engineer.
8. The Contractor shall not use any vehicles, either on or off road, with grossly excessive exhaust, noise emissions. In any built up areas, noise mufflers shall be installed and maintained in good condition on all motorized equipment under the control of the Contractor.
9. Adequate traffic control measures shall be maintained by the Contractor throughout the duration of the Contract and such measures shall be subject to prior approval of the Engineer.

### **III. Workforce**

10. The Contractor should whenever possible locally recruit the majority of the workforce and shall provide appropriate training as necessary.
11. The Contractor shall install and maintain a temporary septic tank system for any residential labor camp and without causing pollution of nearby watercourses.

12. The Contractor shall establish a method and system for storing and disposing of all solid wastes generated by the labor camp and/or base camp.

13. The Contractor shall not allow the use of fuelwood for cooking or heating in any labor camp or base camp and provide alternate facilities using other fuels.

14. The Contractor shall ensure that site offices, depots, asphalt plants and workshops are located in appropriate areas as approved by the Engineer and not within 500 meters of existing residential settlements and not within 1,000 meters for asphalt plants.

15. The Contractor shall ensure that site offices, depots and particularly storage areas for diesel fuel and bitumen and asphalt plants are not located within 500 meters of watercourses, and are operated so that no pollutants enter watercourses, either overland or through groundwater seepage, especially during periods of rain. This will require lubricants to be recycled and a ditch to be constructed around the area with an approved settling pond/oil trap at the outlet.

16. The contractor shall not use fuelwood as a means of heating during the processing or preparation of any materials forming part of the Works.

#### **IV. Quarries and Borrow Pits**

17. Operation of a new borrow area, on land, in a river, or in an existing area, shall be subject to prior approval of the Engineer, and the operation shall cease if so instructed by the Engineer. Borrow pits shall be prohibited where they might interfere with the natural or designed drainage patterns. River locations shall be prohibited if they might undermine or damage the river banks, or carry too much fine material downstream.

18. The Contractor shall ensure that all borrow pits used are left in a trim and tidy condition with stable side slopes, and are drained ensuring that no stagnant water bodies are created which could breed mosquitoes.

19. Rock or gravel taken from a river shall be far enough removed to limit the depth of material removed to one-tenth of the width of the river at any one location, and not to disrupt the river flow, or damage or undermine the river banks.

20. The location of crushing plants shall be subject to the approval of the Engineer, and not be close to environmentally sensitive areas or to existing residential settlements, and shall be operated with approved fitted dust control devices.

#### **V. Earthworks**

21. Earthworks shall be properly controlled, especially during the rainy season.

22. The Contractor shall maintain stable cut and fill slopes at all times and cause the least possible disturbance to areas outside the prescribed limits of the work.

23. The Contractor shall complete cut and fill operations to final cross-sections at any one location as soon as possible and preferably in one continuous operation to avoid partially completed earthworks, especially during the rainy season.

24. In order to protect any cut or fill slopes from erosion, in accordance with the drawings, cut off drains and toe-drains shall be provided at the top and bottom of slopes and be planted with grass or other plant cover. Cut off drains should be provided above high cuts to minimize water runoff and slope erosion.

25. Any excavated cut or unsuitable material shall be disposed of in designated tipping areas as agreed to by the Engineer.

26. Tips should not be located where they can cause future slides, interfere with agricultural land or any other properties, or cause soil from the dump to be washed into any watercourse. Drains may need to be dug within and around the tips, as directed by the Engineer.

#### **VI. Historical and Archeological Sites**

27. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

(a) Stop the construction activities in the area of the chance find.

(b) Delineate the discovered site or area.

(c) Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry of Culture take over.

(d) Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Culture immediately (less than 24 hours).

(e) Contact the responsible local authorities and the Ministry of Culture who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. This would require a preliminary evaluation of the findings to be performed by the archeologists of the Ministry of Culture (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values.

(f) Ensure that decisions on how to handle the finding be taken by the responsible authorities and the Ministry of Culture. This could include changes in the layout (such as when the finding is an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage.

(g) Implementation for the authority decision concerning the management of the finding shall be communicated in writing to the Ministry of Culture; and

(h) Construction work will resume only after authorization is given by the responsible local authorities and the Ministry of Culture concerning the safeguard of the heritage.

#### **VII. Disposal of Construction and Vehicle Waste**

28. Debris generated due to the dismantling of the existing structures shall be suitably reused, to the extent feasible, in the proposed construction (e.g. as fill materials for embankments). The disposal of remaining debris shall be carried out only at sites identified and approved by the project engineer. The contractor should ensure that these sites (a) are not located within designated forest areas; (b) do not impact natural drainage courses; and (c) do not impact endangered/rare flora. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas.

29. In the event any debris or silt from the sites is deposited on adjacent land, the Contractor shall immediately remove such, debris or silt and restore the affected area to its original state to the satisfaction of the Supervisor/Engineer.

30. Bentonite slurry or similar debris generated from pile driving or other construction activities shall be disposed of to avoid overflow into the surface water bodies or form mud puddles in the area.

31. All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, where necessary, will be considered incidental to the work and should be planned and implemented by the contractor as approved and directed by the Engineer.

32. Vehicle/machinery and equipment operations, maintenance and refueling shall be carried out to avoid spillage of fuels and lubricants and ground contamination. An 'oil interceptor" will be provided for wash down and refueling areas. Fuel storage shall be located in proper bunded areas.

33. All spills and collected petroleum products shall be disposed of in accordance with standard environmental procedures/guidelines. Fuel storage and refilling areas shall be located at least 300m from all cross drainage structures and important water bodies or as directed by the Engineer.

## Annex 9: Form for Environmental Safeguards Sub-Project Monitoring

(The following below is to be integrated into the integrated sub-project monitoring form)

### Institutional Arrangements and Documentation

1. Has the project been identified to have negative environmental impacts? Yes\_\_\_\_\_ No \_\_\_\_\_

If "Yes", does the contractor include an environmental specialist / site engineer? Yes\_\_\_\_\_ No \_\_\_\_\_

2. Does the contractor have a copy of the Environmental Management Plan (EMP)?

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

3. Is the project causing negative environmental impact or nuisance? Yes\_\_\_\_\_ No\_\_\_\_\_

If "Yes", is the contractor carry out environmental due diligence (mitigation) as required by the EMP (e.g. relating to flora, fauna, dust, noise, waste)? Yes\_\_\_\_\_ No\_\_\_\_\_

Comments:

4. Is environmental compliance being monitored and reported in the supervision consultant's reports?

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

5. Does municipal sub-project management team include environmental staff or consultant?

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

If "Yes", is the above individual trained on EMP and World Bank safeguard policies?

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

6. Does the municipal sub-project management team include a Monitoring and Evaluation (M&E) specialist? Yes\_\_\_\_\_ No \_\_\_\_\_

7. Is information relating to environmental compliance included (separate annex or paragraphs) in Project Progress Reports? Yes\_\_\_\_\_ No \_\_\_\_\_

General Comments:

**Pollution, Degradation, Contamination and Erosion**

8. Does the project require large amounts of raw material and construction material to be sourced (e.g. transported from a quarry)? Yes\_\_\_\_\_ No \_\_\_\_\_

9. Does the contractor have written permission from relevant authorities for selection of quarry site?  
Yes\_\_\_\_\_ No \_\_\_\_\_

10. Is the project obtaining sand or gravel from river bed or alternative source other than identified quarry? Yes\_\_\_\_\_ No\_\_\_\_\_

11. Does the project involve cutting down of trees or other vegetation? Yes\_\_\_\_\_ No \_\_\_\_\_

12. Is the project causing degradation to any wetlands, streams or other natural areas?  
Yes\_\_\_\_\_ No \_\_\_\_\_

13. Is the project generating large amounts of residual wastes (solid/liquid waste)? Yes\_\_\_\_\_ No \_\_\_\_\_

14. Is the project causing soil or water contamination (e.g. from oil, grease, fuel, equipment)?  
Yes\_\_\_\_\_ No \_\_\_\_\_

15. Is the project using any chemicals thereby causing soil and water contamination?

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

16. Do the project activities involve or generate any hazardous waste substances (e.g. asbestos, toxic paints, noxious solvents, removal of lead paint, etc.)? Yes\_\_\_\_\_ No \_\_\_\_\_

If "Yes", are these being handled and/or disposed as identified in the EMP and in pre-identified and approved sites? Yes\_\_\_\_\_ No \_\_\_\_\_

17. Is the project causing any cumulative negative environmental impacts or unanticipated negative environmental impacts beyond the footprint of the project? Yes\_\_\_\_\_ No\_\_\_\_\_

Comment:

18. Has the project come across any 'chance finds' during implementation (e.g. artifacts, gravesites, cultural heritage sites and/or artifacts)? Yes\_\_\_\_\_ No\_\_\_\_\_

If "Yes" what procedure has been followed by the project? Comment:

General Comments:

### **Community, Health and Safety**

19. Are there any community concerns/complaints relating to negative environmental impacts?

If "Yes", are they being addressed? Yes\_\_\_\_\_ No \_\_\_\_\_

20. Are on site workers equipped with Personal Protective Equipment (PPE)? Yes\_\_\_\_\_ No\_\_\_\_\_

21. Is the project causing an issue for traffic or pedestrian safety? Yes\_\_\_\_\_ No\_\_\_\_\_

22. Does the contractor have adequate medical emergency supplies (first aid kit) on site?

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

23. Is the project is causing sanitation related environmental issues (also stagnant water)?

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

If “Yes”, are mitigation measures being applied? Yes\_\_\_\_\_ No \_\_\_\_\_

General Comments:

## Annex 10: JESSRP Pest Management Plan (PMP)

### General Overview

#### Contents and Purpose of the Report

This Pest Management Plan (PMP) is developed as required by the World Bank's safeguards policy, Pest Management (OP 4.09) and intends to facilitate pest monitoring and control for the Jordan Emergency Services and Social Resilience Project (JESSRP).

This report contains a brief background on the need for and significance of pest-related interventions as part of the JESSRP, compares Jordanian and World Bank policies on pest management and pesticide use, identifies goals of pest management for JESSRP, proposes a clear implementation plan, including monitoring and evaluation, capacity building and resources needed to ensure full compliance with OP 4.09.

#### Concept of Integrated Pest Management (IPM)

In agriculture as well as vector management, Integrated Pest Management (IPM) is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. It is an ecological approach that can significantly reduce or eliminate the use of pesticides.

#### How IPM works

An IPM regime can be quite simple, or sophisticated enough to be a farming system in its own right. The main focus is usually insect pests, but IPM encompasses diseases, weeds, and any other naturally occurring biological crop threat.

#### An IPM system is designed around six basic components:

- **Acceptable pest levels:** The emphasis is on control, not eradication. IPM holds that wiping out an entire pest population is often impossible, and the attempt can be more costly, environmentally unsafe, and all-round counterproductive than it is worth. Better to decide on what constitutes acceptable pest levels, and apply controls if those levels are exceeded.
- **Preventive cultural practices:** Selecting varieties best for local growing conditions, and maintaining healthy crops, is the first line of defense.
- **Monitoring:** Regular observation is the cornerstone of IPM. Visual inspection, insect traps, and other measurement methods are used to monitor pest levels. Record-keeping is essential, as is a thorough knowledge of the behavior and reproductive cycles of target pests.
- **Mechanical controls:** Should a pest reach an unacceptable level, mechanical methods are the first options to consider. They include simple hand-picking, erecting insect barriers, using traps, vacuuming, and tillage to disrupt breeding.
- **Biological controls:** Natural biological processes and materials can provide control, with minimal environmental impact, and often at low cost. The main focus here is on promoting beneficial insects that eat target pests.
- **Chemical controls:** Considered as an IPM last resort, synthetic pesticides may be used when other controls fail or are deemed unlikely to prove effective. Biological insecticides, derived from plants or naturally occurring microorganisms (for example, BT), also fit in this category.

Integrated Pest Management (IPM) from a municipal perspective is defined as the "use of all appropriate technology and management practices to bring about pest prevention and suppression in a cost-effective environmentally sound manner." IPM is a common sense approach that uses a variety of methods to

control pests with greater emphasis on non-chemical control techniques over chemical controls. IPM focuses mainly on eliminating or reducing sources of food, water, and harborage that are available to pests, and limiting pest access into and throughout buildings. Control measures such as sanitation, and building maintenance and modifications are strong elements of a structural IPM program.

Pest infestation does not develop overnight. Insect are less likely to establish in a structure if what they need (water, food and shelter) is not available.

### **What is a Vector, and what is Vector Control?**

A vector can be a mosquito, a rat, a flea, a tick, any animal or insect that can transmit disease or cause harm to humans. Vector control is usually part of a larger municipal public health program that controls and monitors disease-carrying insects such as mosquitoes and ticks. Primary services include:

- Knowledge of and detailed descriptions for known vectors
- Detection of the presence/prevalence of vector borne disease through planned tests, surveys and samples
- Inspection and treatment of known mosquito and rodent sources
- Response to customer initiated service requests for identification, advisory, and/or control measures for mosquitoes, rodents, wildlife, and miscellaneous invertebrates (ticks, cockroaches, fleas, flies, etc.)
- Promotion of public awareness through outreach and educational services

## **Pest Management Approaches**

### **The State of Vector Control Management in Jordan**

In Jordan, most malaria cases are imported (124 cases per year) with the low-lands areas of the country being receptive. Urinary schistosomiasis cases are also mainly imported and the few cases (152) locally transmitted occurred in the low lands (Jordan Valley and Ghor Safi). Cutaneous leishmaniasis (zoonotic) is endemic in Jordan. There is evidence that reported cases have been increasing with most cases coming from South Shunah and Aqaba health districts. Vector control activities include: environmental management; drying; canalization and clearance of vegetation; destruction of rodent burrows; new irrigation methods (drip, intermittent irrigation); wastewater management, and improved housing. Chemical methods include larviciding: using temophos 50% EC with an average amount of 1000 kg(a.i.)/year all over the country; space spraying: using (deltamethrine 2.5% EC) against *Anopheles* mosquitoes, sandfly and *Culex* mosquitoes; and chemical control of snails (niclosamide 70% WP).The annual average amount used is 150 kg a.i. Entomological surveillance of larvae and adultmosquitoes, including susceptibility tests is regularly undertaken. Indoor residual spraying and theuse of LLINs are not implemented in Jordan.

Jordan, however, faces the following challenges in scaling-up vector control interventions: inadequate insecticide storage facilities; empty containers of insecticides are not always safely destructed and dumped; obsolete stock of DDT (22 tons) has been stored since 1990 and Jordan has no capacity to dispose of them, including the lack of packaging materials for 13,015 kgs of DDT 100%; the need for training on the appropriate application of insecticides; and weak capacity in monitoring the susceptibility of vectors to the used insecticides.

Jordan has an established national IVM steering committee; has implemented a vector control needs assessment, and has identified needs, gaps and opportunities for IVM implementation. This Vector

Control Needs Assessment (VCNA) VCNA was used to draft a national IVM plan which was presented and endorsed during a national stakeholder's meeting. Jordan, on the other hand, faces a number of challenges in implementing IVM. These include: low level political commitment to vector control; weak intersectoral collaboration; weak infrastructural capacity for vector control (human, physical, transport and financial resources); lack of community involvement. As a way forward, there is a need to address the obsolete stocks of DDT; to advocate for high-level political support for vector control; to strengthen intersectoral collaboration; to recruit additional human resources; to train of staff on vector biology and control; to upgrade its entomology laboratory; to strengthen and support research on vector biology, ecology and control; and to advocate for community mobilization and involvement in vector control.

### **Pest Management Specifics in JESSRP**

The northern municipalities hosting the largest concentration of Syrian refugees within urban settings have identified immediate priorities in order to support the influx of urban population and their subsequent demand for municipal services. Amongst these identified priorities have been both pesticides/rodenticides as well as vector spraying machines.

### **Status of Individual Vectors in Jordan**

**The main current vector problems in municipalities of Jordan are:**

- Cockroaches,
- Rats and Mice, and
- Flies and Mosquitoes.

#### ***Cockroaches***

There are three species of cockroaches in Jordan that can become pests: German cockroach, oriental cockroach, and American cockroach. Other species, e.g. the field cockroach, is not really a pest. It is usually found outdoors, but sometimes comes indoors when it is hot or dry and is often mistaken for the German cockroach. Of these three species, the one that has the greatest potential for becoming persistent and troublesome is the German cockroach, which prefers indoor locations. Oriental and American cockroaches occasionally come indoors.

Cockroaches may become pests in any structure that has food preparation or storage areas. Cockroaches (especially the American cockroach, which comes into contact with human excrement in sewers) may transmit bacteria that cause food poisoning (*Salmonella* spp. and *Shigella* spp.). German cockroaches are believed to be capable of transmitting disease-causing organisms such as *Staphylococcus* spp., *Streptococcus* spp., hepatitis virus, and coliform bacteria. They also have been implicated in the spread of typhoid and dysentery. Indoor infestations of cockroaches are an important source of allergens and risk for asthma among some populations. The levels of cockroaches and allergens are directly related to cockroach density, housing disrepair, and sanitary conditions.

Cockroaches are medium-sized to large insects in the order Dictyoptera (formerly Orthoptera). They are broad, flattened insects with long antennae and a prominent, shield-shaped section behind the head called a pronotum. They are nocturnal and have a tendency to scatter when disturbed. Immature cockroaches (nymphs) look like adults, but are smaller and do not have wings.

Of the three common pest species, German cockroaches inhabit buildings, whereas the oriental and American usually live outdoors or in masonry enclosures away from buildings, only occasionally invading buildings themselves. It is important to correctly identify the species involved in a cockroach infestation so that the most effective control method(s) may be chosen.

#### ***Rats and Mice***

Rats and mice are remarkably well-adapted for living in close association with humans. The greatest economic loss is not from how much these rodents eat, but what must be thrown out because of damage or contamination. Food, clothing, furniture, books, and many other items are contaminated by their droppings and urine or damaged by their gnawing.

These rodents damage doors, walls, insulation, and other structural components by their gnawing and burrowing. They also gnaw through utility pipes and electrical wiring, causing fires, indoor flooding, power outages, and equipment failure.

***Flies and Mosquitoes***

Flies of various types have affected mankind and his wellbeing for thousands of years. Some flies suck blood; others eat carrion. Many flies transmit diseases; others become pests in crops; others live from other insects, whilst others contribute to plants pollination. All flies go through a complete metamorphosis; larvae do not have legs and the head often shrinks, and it can hardly be noticed as it retracts toward the thorax. Adult flies do not have a jaw but have a special oral device to lick and suck or bite and suck.

The difference between the mosquitoes and the flies is that they have a penetrating oral device (proboscis), scales in the back margins and in the veins of their wings. Mosquitoes have a complete metamorphosis. They lay their eggs one at a time or in a bunch on a wet surface or in a place where they can have humidity when there is a flood. Mosquito larvae and pupae live in the water but must go to the surface to get air or get it from the portions of the plants underneath the water.

Larvae go through four states to form the pupa. When the adults are ready to emerge, the pupa swims to the surface and breaks the pupa skin. The adult works to get out of the pupa skin and uses it as a support to harden its body until it can fly. Usually males emerge first and wait close by to mate with the females after they emerge. Most of the female mosquitoes eat a meal based on blood before depositing their fertile eggs. The male’s oral device is not appropriate to suck blood; therefore, its nutrition is based on plants juice and nectar. Mosquitoes are of medical importance because they are the only vector known of infectious transmission agents that cause malaria, yellow fever, certain types of encephalities, dengue and filariasis.

**Inspection and Monitoring of Urban Vectors**

Inspection and, more importantly, monitoring are the cornerstones of an IPM program and without sufficient time allocated to this service the IPM program becomes reactive instead of pro-active. Monitoring is the single most identifiable practice that can be performed to put pest control program into the IPM Mode.

**Pesticide Use and Management**

**Chemical Methods for Controlling Urban Vectors**

**Cockroaches**

**Commonly used pesticide products for cockroaches and uses**

*Insecticides carrying a CAUTION label, in formulations that reduce potential for exposure.*

Active ingredient	Example Products	WHO Classification	Uses
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Disodium octaborate tetrahydrate	Ant Cafe® RTU 73766-2	Class 3	Pre-manufactured enclosed bait station that can be placed in inaccessible areas.
Boric acid	Drax® Roach Assault PGF 9444-193	Class 3	Solution, paste or gel that can be applied as drops in accessible areas. Gel can be applied in small amounts to cracks, crevices and other areas where bait stations cannot be used.
Hydramethylnon	Maxforce® Professional Insect Control Roach Killer Bait Gel 432-1254	Class 2	
Indoxacarb	Advion® Cockroach Gel Bait 352-652	Class 2	

**Class 1A = Extremely Hazardous, Class 1B = Highly Hazardous; H = Moderately Hazardous; Class 3 = Slightly Hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified, O = obsolete as pesticide, not classified.**

*Insecticides carrying a CAUTION label, in formulations with a greater potential for exposure*

Active ingredient	Example Products	WHO Classification	Uses
Fipronil	Maxforce® Professional Insect Control Roach Bait Station 432-1257	Class 2	Volatile active ingredient in pre-manufactured enclosed bait station. Use alternative non-volatile products.
Boric acid	Borid® 9444-133	Class 3	
Diatomaceous earth	Eaton's KIO System 56-67	U	
Disodium octaborate tetrahydrate	67 Boracide® 64405-7	Class 3	
Limestone	NIC 325 Pro Organic®	U	Granular formulations. To reduce exposure hazard, use only in voids that will be sealed after
Boric acid	ECO 2000-GR® 1677-191 Niban® FG 64405-2	Class 3	
Xanthine	Ecologix® Cockroach Bait 1001-13	U	

Oxypurinol orthoboric acid	Intice™ Ant Granules 73079-2	Class 3	use.
Boric acid	PT 240 Permadust® 499-384	Class 3	Pressurized aerosol. Mint oil formulations must be applied directly to insects, no residual activity.
Mint oil	Earthcare® Naturals Ant & Roach Killer	U	

**Class 1A = Extremely Hazardous, Class 1B = Highly Hazardous; H = Moderately Hazardous; Class 3 = Slightly Hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified, O = obsolete as pesticide, not classified.**

*Insecticides carrying a CAUTION label, in formulations with greater potential for toxicity and/or exposure*

Active ingredient	Example Products	WHO Classification	Uses
Bifenthrin	Talstar® 279-3225	Class 2	Liquids sprayed or otherwise applied to exposed interior and/or exterior surfaces. Spray applications can contaminate an area and make baiting ineffective until the residue degrades. To reduce exposure hazard and avoid contamination, use alternative formulations and/or limit applications to non-volatile active ingredients applied to non-human contact surfaces in inaccessible areas.
Chlorfenapyr	Phantom® 241-392	Class 2	
<i>Cyfluthrin</i>	<i>Tempo® SC Ultra 11556-124</i>	<i>Class 1B (cannot be financed by JESSRP)</i>	
Cypermethrin	Demon® EC 100-1004	Class 2	
Deltamethrin	Suspend® SC 432-763	Class 2	
Lambda Cyhalothrin	Demand® CS 100-1066	Class 2	
Disodium Octaborate Tetrahydrate	Mop Up® 9444-132	Class 3	

**Class 1A = Extremely Hazardous, Class 1B = Highly Hazardous; H = Moderately Hazardous; Class 3 = Slightly Hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified, O = obsolete as pesticide, not classified.**

## Rats and Mice

### Commonly used pesticide products for rodents and mice

*(As all of the below are WHO Classified 1A and 1B, they cannot be financed by JESSRP)*

Active ingredient	WHO Classification	Example Products
Brodifacoum 0.005(waxblocks)	Class 1A	Brobait, Nofar
Bromadilone 0.005 (bait)	Class 1A	Acilone, Garden top fresh
Bromadilone 0.25 (L)	Class 1A	Bromac-c
Bromadilone 0.1 (TP)	Class 1A	Bromalone
Coumatetraryl 0.75 (TP)	Class 1B	Racumin, Ratryl
Flocoumafen 0.005 (wax block bait)	Class 1A	Storm, Murdex

**Class 1A = Extremely Hazardous, Class 1B = Highly Hazardous; H = Moderately Hazardous; Class 3 = Slightly Hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified, O = obsolete as pesticide, not classified.**

As all of the commonly used rodenticides in Jordan and WHO classified 1A and 1B and therefore cannot be financed by the World Bank, it is recommended that **calciferols (vitamins D)**, including cholecalciferol (vitamin D<sub>3</sub>) and ergocalciferol (vitamin D<sub>2</sub>), be considered as possible rodenticides. It is considered to be single-dose, cumulative (depending on concentration used; the common 0.075% bait concentration is lethal to most rodents after a single intake of larger portions of the bait) or sub-chronic (death occurring usually within days to one week after ingestion of the bait). Applied concentrations are 0.075% cholecalciferol and 0.1% ergocalciferol when used alone.

## Pesticides Commonly Used in Jordan for Vector Control

The below section covers the generic names and more detailed descriptions for each of the chemicals commonly used for vector control in Jordan.

### Deltamethrin (Class 2)

**Deltamethrin** products are among the most popular and widely used insecticides in the world and have become very popular with pest control operators and individuals in Jordan. This material is a member of one of the safest classes of pesticides: synthetic pyrethroids. This pesticide is highly toxic to aquatic life, particularly fish, and therefore must be used with extreme caution around water. Although generally considered safe to use around humans.

There are many uses for deltamethrin, ranging from agricultural uses to home pest control. Deltamethrin has been instrumental in preventing the spread of diseases carried by tick-infested parairi dogs, rodents and other burrowing animals. It is helpful in eliminating and preventing a wide variety of household pests, especially spiders, fleas, ticks, carpenter ants, carpenter bees, cockroaches and bed bugs.

Deltamethrin plays key role in controlling malaria vectors, and is used in the manufacture of long-lasting insecticidal mosquito nets.

When deltamethrin gets in the soil, it has a tendency to bind tightly to soil particles. It has a half-life ranging from 5.7- 209 days. Half-life is the measure of time it takes for half of the applied amount to break down. The half-life can change based on soil chemistry, temperature, water content and the amount of organic matter in the soil. Deltamethrin does not break down as quickly in soil with a high clay or organic matter content. Deltamethrin is broken down by microbes, light, and water.

#### **Deltamethrin + Bioallethrin (Class 2)**

**Deltamethrin + Bioallethrin** is a fast-acting, non-systemic insecticide with contact and stomach action. Like all pyrethroids, prevents the sodium channels from functioning, so that no transmission of nerve impulses can take place. It results in rapid knockdown, and paralyzes insects before killing them. An insecticidal spray concentrate which combines the killing power of deltamethrin with the fast knockdown activity of Bioallethrin, Deltathrin ULV gives broad-spectrum residual activity on many surfaces and is suitable for use in public health, food handling and commodity storage areas. This combination is used for crawling insects, including cockroaches, fleas, bed-bugs, ants, earwigs and stored product pests such as grain weevils, grain and flour beetles and carpet beetles. It is also used for flying insects while they are resting, such as flies, mosquitoes, moths and wasps.

#### **Bioallethrin (Class 2)**

**Bioallethrin** is a potent contact insecticide which produces a rapid knockdown against household pests (housefly, mosquito, lice, roaches) and parasites outside dog and cat, or formulated into spray agent against crawlers and fly insects on farm, milk houses and stall. It has appropriate vapor pressure, ideal for mosquito coil, electric thermal mat and aerosol.

#### **Esbiothrin (Class 2)**

**Esbiothrin** is a synthetic pyrethroid with fast knock-down activity against household pest insects. It is used in public health contexts against mosquitoes, houseflies and cockroaches.

#### **Alphacypermethrin (Class 2)**

**Alphacypermethrin** is a synthetic pyrethroid used as an insecticide in large-scale commercial agricultural applications as well as in consumer products for domestic purposes which means it kills beneficial insects and animals as well as the targeted insects. It is easily degraded on soil and plants but can be effective for weeks when applied to indoor inert surfaces. Exposure to sunlight, water and oxygen will accelerate its decomposition. It is highly toxic to fish, bees and aquatic insects.

#### **Lambda-Cyhalothrin (Class 2)**

**Lambda-cyhalothrin** begins working immediately upon contact or ingestion, resulting in fast insect knock-down and kill. Lambda-cyhalothrin kills by acting as a high-power poison to the insect's central nervous system. Once poisoned, the insect's nerve cells become excited, causing paralysis and eventual death. Lambda-cyhalothrin is manufactured in various formulations (including powders, pellets, and liquids) to control a wide variety of indoor and outdoor pests including ants, cockroaches, spiders, termites, fleas, flies, ticks, silverfish, scorpions, earwigs, bed bugs, wasps, and bees. Lambda-cyhalothrin is in EPA Toxicity Class II, where Class I is the most toxic and Class IV is the least toxic.

#### **Cyfluthrin and Beta-Cyfluthrin (Class 1B)**

*(cannot be financed by JESSRP)*

**Cyfluthrin and Beta-Cyfluthrin** are a synthetic pyrethroid insecticides and common household pesticide. it is highly toxic to fish, invertebrates, and insects, but it is far less toxic to humans. Cyfluthrin is manufactured in various formulations (including emulsifiable concentrates, wettable powder, liquids,

aerosols, granules, and crack and crevice treatments) to control a wide variety of indoor and outdoor pests including roaches, silverfish, fleas, spiders, ants, crickets, houseflies, ticks, black carpet beetles, small flying moths, saw-toothed grain beetles, rice weevils, pillbugs, mosquitoes, wasps, hornets, yellow jackets, gnats, earwigs and more.

**Cypermethrin (Class 2)**

**Cypermethrin** is commonly used as a crack and crevice or spot treatment for residual and contact control of spiders, ants, carpenter ants, scorpions, German cockroaches, ladybugs, carpenter bees, and yellow jackets. Cypermethrin is not soluble in water and has a strong tendency to adsorb to soil particles. It is therefore unlikely to cause groundwater contamination.

**Tetramethrin (Class U)**

**Tetramethrin** is an insecticide often used to target insects such as wasps, hornets, roaches, ants, fleas, and mosquitoes. It is oftentimes combined with another active ingredient for more broad range pest control, or for more effective long term treatments. Tetramethrin has a wide range of residential uses including general surface and space sprays, spot and crack treatments, use on indoor and outdoor plants, clothing, bedding, pet premises, direct application onto pets, and perimeter treatments such as sidewalks and decks. Tetramethrin should not be applied directly to or near water, due to its high toxicity to aquatic species. Household users should also take care not to use tetramethrin on home grown food, or near other foods. If tetramethrin is used on pets, limit contact with children for a reasonable amount of time. Be aware of other active chemical ingredients. Tetramethrin is commonly combined with other pesticide agents to prolong effectiveness or to target a wider range of insects.

**Brodifacoum (Class 1A)**

*(cannot be financed by JESSRP)*

**Brodifacoum** is extremely high toxicities in various mammals, brodifacoum is classified as "extremely toxic". Because of its persistency, cumulative potential and high toxicities for various wildlife species, it is also considered an environmental pollutant. It is an anticoagulant that is effective against rats and mice. Brodifacoum does not enter the atmosphere, because of its low volatility. It is practically insoluble in water. Brodifacoum is strongly bound on soil particles and is not taken up by plants. The rate of degradation is relatively slow and depends on soil type.

**Pesticides Commonly Used in Northern Jordan**

These are the pesticides commonly order by the Municipalities of Irbid and Mafraq, as provided by the MOMA Tender Board in Amman:

Trade Name	Common Name	WHO Class	Jordan Registration #
Pyrethoids			
Delete 25% Sc	Deltamethrin	Class 2	#2029
KOVET	Deltamethrin	Class 2	---
Deltathrin PH	Deltamethrin + Bioallethrin	Class 2	#1827
Datine 5/5 ULV	Deltamethrin + Esbiothrin	Class 2	
Demethrin KD	Deltamethrin + Esbiothrin + P.B.O.	Class 2	---
AlphaKill	Alphacypermethrin	Class 2	#1372
Al Fabaz 10 Sc	Alphacypermethrin	Class 2	#1884
Demand Cs	Lambda Cyhalothrin	Class 2	#1624
Mycon	Lambda Cyhalothrin	Class 2	---
Lamcon 2.5 Ec	Lambda Cyhalothrin	Class 2	#2272

Betathrin 25% Sc	Beta-Cyfluthrin (cannot be financed by JESSRP)	Class 1B	#2414
Cyflon 5 Ec	Cyfluthrin (cannot be financed by JESSRP)	Class 1B	#2273
Cyflon ULV	Cyfluthrin + Bioallethrin + P.B.O. (cannot be financed by JESSRP)	Class 1B + Class 2	#2342
Trikill	Cypermethrin + Tetramethrin + Piperonyl Butoxide	Class 2 + U + U	---
Perbaz ULV	Permethrin + Tetramethrin + P.B.O	Class 2 + U	#1044
<b>Rodenticides</b>			
Nofar_1	Brodifacoum (cannot be financed by JESSRP)	Class 1A	---
Lafar	Bromadiolone (cannot be financed by JESSRP)	Class 1A	---
<b>Benzoyluren</b>			
Diflokill 25% (wettable powder)	Diflubenzuron	Class 3	---
Newsibon	Diazinon	Class 2	---
<b>Others</b>			
Aciprox	Pyriproxypen	U	---
STINGER 6.8 ULV	Cyfluthrin + D. Allethrin + Piperonyl Butoxide	Class 1B + Class 2+ U	#2620

**Class 1A = Extremely Hazardous, Class 1B = Highly Hazardous; H = Moderately Hazardous; Class 3 = Slightly Hazardous; U = Unlikely to present acute hazard in normal use; FM = Fumigant, not classified, O = obsolete as pesticide, not classified.**

## **Policy, Regulatory Framework and Institutional Capacity**

### **Jordanian National Strategy for Integrated Vector Control**

A Jordanian National Strategy for Integrated Vector Control was prepared by the Intersectoral Committee on Vector Control, sponsored by the Ministry of Health, in 2006. Recognizing the importance of vector-borne diseases, Jordan as a participating country in a MENA regional strategy endorsed a Regional Strategic Framework for integrated vector management (IVM) for the implementation of vector control. The Government of Jordan also committed itself to ensure that there is national capacity to plan and implement IVM; to allocate a specific budget line for IVM; to establish a functional intersectoral mechanism for the collaboration and coordination of all sectors in Jordan; and to develop a national IVM strategy and plan of action. Such a plan was to be based on the carrying out of regular vector control needs assessment (VCNA) for all vector-borne diseases to identify needs, gaps and opportunities for vector control. Based on guidelines developed the World Health Organization, Jordan has carried out a detailed VCNA through the activities of the Inter-Sectoral Committee (ISC) for vector control, headed by the Ministry of Health (MOH). As a next step, the ISC then embarked on the development of an IVM strategy and action plan to be discussed among a broader consultation group who are equal partners of this approach.

Jordan has pesticide registration procedures and has produced codes for all accepted pesticides, and has pesticide regulations written in Arabic. In the past, almost all pesticides available worldwide received Jordan registration. Only starting from 2000 has the government more tightly regulated what can and cannot be used.

## Jordanian Institutional Arrangements for Vector Management and Control

Although the Ministry of Health has taken the lead on developing a strategy for integrated vector control, the Ministry of Agriculture registers pesticides and monitors their imports and uses. With regards to Ministry of Municipal Affairs (MOMA) management of pesticides, their Tenders Department keeps track of individual municipality requests for particular pesticides, purchases pesticides in bulk, and allocates pesticides to individual municipalities on the basis of request and need. Some individual municipalities are able to afford to purchase additional pesticide supplies directly, and others rely exclusively on what is provided by MOMA Tenders.

The Table below relates to the institutional arrangements in place for vector control for the General Amman Municipality (GAM). MOMA has adopted the GAM vector control institutional arrangements as the preferred model for all individual municipalities in Jordan. The larger municipalities have a Department of Public Health, which monitors urban pest influxes. Usually the Department of Public Health, together with the Engineering Department, guide proper use and storage of the vector control chemicals in Municipality-owned warehouses.

Both MOMA and the municipalities have institutional arrangements, regulations, and demonstrated experience with vector control management. *As the Government of Jordan has a system of regulations concerning distribution and use of pesticides and rodenticides, and these pesticides are to be used only by municipal employees trained to hand, store, and apply these products properly, formulations of products classified as WHO Class 2 will be allowed to be financed under JESSRP. There will be monitoring of handling, storage, and application of all JESSRP-procured pesticides, including those of Class 2, in order to ensure compliance with World Bank Operational Policy OP 4.09 on Pest Management.*

### GAM Institutional Arrangements for Vector Control

Department name	Department of Vector Control and Animal Welfare
Address	Amman – Al Mahataa- Al Jayesh street
Phone number	4881637.4895123, 4896048,
Fax number	4881086
Postal address	Mokafaha.info
Representative of the department in this regard	Eng. Zain Al Hadeed , Eng. Samar Al Momani
Number of employees and hours of work system	Working Hours: 8-3 am and 3-11
The main raw material	Corn. Kerosene. Pesticide
The main product	Ready to spray pesticides. granules and templates
Parts	
Vector control unit	Animal Care unit
Administrative Unit	Warehouse unit
Environmental facilities available	
No	
Other Information	
With the development of health services in the Kingdom, Greater Amman Municipality has created a department dealing with the insects and rodent eradication in the year (1980) to control disease vectors that cause many common diseases and epidemics that constitute a major threat to human safety and the environment in which they live. With the restructuring in 2009. GAM added a new task to be carried out by the Department, namely animal welfare. This was done to keep pace with the developments of Greater Amman Municipality at the level of municipal services; the title of the department changed accordingly to “Vector Control and Animal Welfare Department”.	
Date	11/3/2012

**GAM Vector I Control and Animal Welfare Department Institutional Responsibilities, Vector Control Side**

Job	Responsibilities	Qualifications
Chairman of the Planning and Development	1. Preparation of operational plans and follow-up. 2. Monitor the performance of operations 3. Inspection and control operations 4. Liaison officer knowledge and communication	Bachelor in Agricultural Engineering
Awareness and education	1 - coordinate awareness campaigns 2 - team member knowledge standards 3 - Follow-up inspection	Bachelor in Agricultural Engineering
Head of vector control	Supervising the implementation of the cases and closure of complaints regarding rodents and insects	Bachelor in Agricultural Engineering

As noted above, the Jordanian Ministry of Agriculture (MOA) Ministry of Agriculture registers pesticides and monitors their imports and uses. It also formulates and disseminates regulations for optimal preparation of chemical controls. A selection of its regulations for chemical control preparation is given below so as to demonstrate the development and capacity for pesticide preparation, identification of potential negative impacts, and mitigation actions to be taken:

**Jordanian Ministry of Agriculture Regulations for Chemical Control Preparation**

Mixing Pesticides				
Input	Quantities	Manufacturing stages	Possible Negative Outputs	Action to be taken
Pesticide	2-6 liters	Calibration	Pesticide spill	Mixing of pesticides within a basin with appropriate specifications Disposal of pesticide residues in the basin
Kerosene	50-40 liters	Mixing pesticides	Inhalation of pesticide	The use of respirators Provide good mixing room ventilation
Water	500 liters	Mixing pesticides	Empty containers	Provide special mechanism to dispose of empty containers

Rodent Bait Formulation #1				
Input	Quantities	Manufacturing stages	Possible Negative Outputs	Action to be taken
Corn	1 ton	Weight corn and granulation	Corn dust	The use of respirators The use of protective eye glasses
Pesticide	25-13 liters	pesticide mixing with corn	Scattering atoms pesticide	The use of respirators The use of eye protective glasses
Ready grafts	1 ton	Baits Compaction	Fumes	Provide a well-ventilated room Providing a fume hood

Rodent Bait Formulation #2				
Input	Quantities	Manufacturing stages	Possible Negative Outputs	Action to be taken
Corn	40 kg	Corn granulation	Corn dust	The use of respirators The use of protective eye glasses
Water	5 liters	Moisturizing corn	Corn dust	Providing maintenance for showers Provide wash basins for eyes
Parafeen wax	15 kg	Melting wax and its addition to corn	fumes	The use of respirators Provide shelves with good specifications
Pesticide	1-2 liters	Mixing of materials	Pesticide spill + fumes	Separation of raw materials from manufactured pesticides

Spraying Equipment Suggested Management				
Input	Quantities	Manufacturing stages	Possible Negative Outputs	Action to be taken
Spraying Equipment	8-4	Maintenance	Pesticide residues	Empty and disposal in safe packages The use of general safety precautions
			Rust remover oils	After use disposal in a safe manner
			Grease remover	Stored in the designated locations

## Training, Capacity Building, Monitoring and Evaluation

### Training and Capacity Building

Most, if not all, of the municipalities requesting additional resources for urban vector control already have in use fumigation vehicles as well as fumigants. Nonetheless, it is suggested that JESSRP provide a “refresher course”, to emphasize the elements of World Bank Operational Policy OP 4.09. The primary intent of this training would be to ensure full knowledge that Class 1A and Class 1B vector control products are prohibited from being financed by World Bank resources. The secondary intent of the training would be the more advanced guidance proposed in this PMP in order to close the gap between the Jordanian Ministry of Agriculture regulations for using chemical controls and PMP guidance.

Additional training materials suggested to be used as a basis for a refresher course can be found at “WHO-UNEP Sound Management of Pesticides and Treatment of Pesticide Poisoning: A Resource Tool” ([http://www.who.int/whopes/recommendations/IPCSpesticide\\_ok.pdf](http://www.who.int/whopes/recommendations/IPCSpesticide_ok.pdf)). Suggested modules for use specific to JESSRP include the following:

- Module 2: Absorption and effects of pesticides
- Module 3: Use of personal protection
- Module 4: Protecting the Environment and the General Public
- Module 5: Chemical Groups and Modes of Action of Pesticides (only those chemical groups relating to urban vector control)

- Module 8: reporting pesticide exposures, cases of human and non-human poisoning, and environmental incidents

The target group for this training should be first-line vector control municipal employees, Municipality-employed public health, warehouse management and engineering staff, as well as relevant local environmental and public health NGOs. This is estimated to be 50-60 invitees at the most.

An initial estimate for the cost of this training, \$7,500, is incorporated into the ESMF costing tables.

### **Monitoring and Evaluation**

Day-to-day monitoring is expected to be the responsibility of the Municipality Department tasked with vector control; to be overseen by the Municipality-level MOMA engineer, who will be monitoring all JESSRP funded subprojects. It is expected that a locally-based consultant with expertise in pest management will be retained to review sub-project compliance with respect to OP 4.12 as part of the annual fiduciary audit.

## Monitoring Plan Part 1 – Operations

Scope	Inclusions	Actions
Control methods	Ground-Based Applications	<ul style="list-style-type: none"> <li>• Continue to review ground based control methods.</li> <li>• Have increased treatment areas.</li> <li>• Identified need to increase the pretreatment areas and this has been undertaken this year.</li> <li>• Vector Task Calendar has been developed and implemented.</li> <li>• Pre &amp; Post-Dipping is being undertaken and documented.</li> <li>• Introduction of treatment record forms.</li> </ul>
	Adulticiding	<ul style="list-style-type: none"> <li>• Continue to identify suitable areas for adulticiding treatments.</li> <li>• Continue to monitor light trap numbers to identify adult mosquito activity.</li> <li>• Trial new products to ensure continued success.</li> </ul>
	Vermin Baiting	<ul style="list-style-type: none"> <li>• Continue integrated baited program within affected neighborhoods</li> <li>• Maintain an audit (where required) of all storage facilities</li> <li>• Continue to review baiting programs.</li> <li>• Maintain present service provision of rat baits</li> </ul>
	Fly program	<ul style="list-style-type: none"> <li>• Municipality to spray waste management facilities and sewage streams</li> <li>• Municipality reduces fly breeding where required at its waste management facilities and sewage streams</li> </ul>
Monitoring Program	Light trapping	<ul style="list-style-type: none"> <li>• Trapping of approximately 6 hours/week assist the Municipality to identify mosquito numbers and species found within the city</li> <li>• Continue to carry out the weekly light trapping program during the peak season</li> <li>• Ensure target areas are monitored as required</li> <li>• Continue to integrate data into the treatment program</li> </ul>
	Pre-post dipping	<ul style="list-style-type: none"> <li>• Pre/post dipping is an important part of the treatment program to assist in determining mortality rate/efficacy</li> <li>• Ensure that the pre/post dipping process maintains a mortality rate of 90%</li> <li>• Continue to incorporate this data in the need to determine frequency, mode, and type of treatment</li> </ul>

## Monitoring Plan Part 2 – Training, Data Collection and Program Performance Review

Scope	Actions
Staff Training	<ul style="list-style-type: none"> <li>• Ensure relevant technical staff participate in detailed vector control trainings</li> <li>• Ensure all municipal staff access to in-house training on basic principles of IPM and vector control</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that all technical staff participate in a first-aid training program geared towards pesticide and rodenticide handling, exposure, leaks, etc.</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that all technical staff who drive fumigation vehicles undergo driver safety training</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that all technical staff have access to the required training needed for them to maintain current licenses and permits as necessary</li> </ul>
Site Identification and Characteristics	<ul style="list-style-type: none"> <li>• Priority site identification process completed</li> <li>• Site identification integrated and compared to mapping of breeding sites</li> </ul>
Treatment Records	<ul style="list-style-type: none"> <li>• Continue to operate a simple and accurate treatment recording system</li> <li>• Review light trapping records</li> <li>• Determine necessary data for recording: e.g. chemical application specifics, meteorological data</li> <li>• Continue to improve data recording systems</li> </ul>
Jordanian and World Bank safeguards compliance	<ul style="list-style-type: none"> <li>• Continue to operate under the principles outlined in the National Vector Control Assessment and Plan as well as with regards to World Bank Safeguards Policy OP 4.09 Pest Management</li> <li>• Continue to operate in accordance with occupational workplace safety and health requirement</li> <li>• Continue to provide the public with information on the Municipality’s Vector Control Program</li> </ul>