JAMAICA SOCIAL INVESTMENT FUND

ISO 14001:2015 CERTIFIED

Investing for Community Development

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

For the

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI II)

Reviewed and Updated

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1.0 INTRODUCTION

The Jamaica Social Investment Fund (JSIF) is a limited liability company incorporated under the Company's Act of Jamaica. It was established in 1996 as a component of the Government of Jamaica's (GoJ's) national poverty alleviation strategy. The Fund was designed primarily to channel resources to small-scaled community based projects. This is done with the use of an Operations Manual that acts as a guide to ensure transparency, accountability and efficiency in project implementation.

The operations of the JSIF were initially funded by a loan negotiated between the GoJ and the World Bank. Though the Fund was initially established as a temporary organization with an initial lifespan of four (4) years, it has been in operation for over twenty-one (21) years; invested an estimated USD 200 million, of which approximately 80% is on infrastructure.

The Jamaica Social Investment Fund (JSIF) mobilizes resources and channels these to community-based socio-economic infrastructure and social services projects. Through a national partnership between central and local government, communities and private and public organizations. These projects are expected to have generally positive environmental impacts, albeit some could result in minor adverse environmental impacts that would be mostly local and reversible.

1.1 Background to the EMF

In May 2005 the Government of Jamaica (through the Planning Institute of Jamaica), the World Bank and the JSIF began discussions regarding the development of an Environmental Management System (EMS) for the JSIF which would be certified against ISO 14000 Standards. This was the first seed sown that would forty-three (43) months later result in the successful implementation of an Environmental Management System (EMS) and the achievement of ISO 14001:2004 certification. These discussions would fit perfectly within the framework of the government's thrust towards environmental responsibility as outlined in the Green Paper "Towards a National Policy and Strategy on Environmental Management Systems."

The discussions gained further traction with the firm resolve by JSIF's top management, and the Board of Directors, to promote responsible interaction with the environment and environmental sustainability. The first tangible manifestation of this commitment was the development of an Environmental and Social Management Framework (ESMF) in

January 2006 which binds JSIF to, and ensures conformance with the Government of Jamaica's environmental laws and regulations, and guards against adverse impacts on the natural and cultural environment as a result of our activities.

One of the guiding operational principles (principle # 9) of JSIF is that projects funded by JSIF must conform to the Government of Jamaica's environmental regulations and have minimum impacts on the natural and cultural environment. Thus, the ESMF became an integral part of JSIF's Operational Manual (OM) and has evolved into an Environmental Management System (EMS) which was certified to ISO 14001:2004 standards in January 2009 and later to the upgraded ISO 14001:2015 in 2017.

This ESMF is continually reviewed and updated to reflect the considerations of new and emerging activities being undertaken by the Fund. The ESMF is applicable to all project portfolios regardless of funding sources including the Government of Jamaica, World Bank, Caribbean Development Bank, European Union, Inter-American Development Bank, PetroCaribe Development Fund and any other donor source.

The ESMF is a significant element of the EMS and is included in all JSIF works contracts. Historically, the ESMF was updated in 2013 and 2015 for the approval of the Integrated Community Development Project (ICDP) and the Disaster Vulnerability Reduction Project (DVRP), respectively. This current update of the existing ESMF forms part of the preparation for the approval of the proposed second Rural Economic Development Initiative (REDI II) project to be funded by World Bank. This update is necessary given the expanded scope of the project, especially in Component 2 which will include public infrastructure investments with a larger footprint. It includes increased focus on social issues such as: grievance redress mechanism (GRM); labor management and labor codes, even for informal/casual workers; child protection; civic engagement and disclosure.

Considering the conditions outlined in the Bank's Environmental Assessment (EA) Policy (Operational Policy OP 4.01), REDI II is classified as a Category B project, meaning that environmental impacts for the type of work anticipated under the project are expected to be moderate in nature and can be managed through the application of appropriate engineering and management measures. Since the specific locations of the sub-projects to be implemented under the REDI II are unknown at this point, this EMF will serve as a general guide for implementation of the activities across the JSIF. It provides the approach to identifying and managing environmental concerns which may be encountered during sub-project execution. Ultimately, it will inform the environmental management of future subprojects or activities once they are defined in sufficient detail. The EMF will serve as a screening tool for work activities and subprojects designed in

order to identify potential environmental impacts, provide standardized mitigation measures in the form of an environmental management plan (EMP)[1], and identify works requiring additional assessment during project execution.

The main objectives of this EMF are to:

- Establish procedures for screening all proposed projects for their potential adverse environmental impacts;
- Specify measures for managing, mitigating and monitoring environmental impacts during project implementation and operation; and
- Outline the training and capacity-building arrangements needed to successfully implement the provisions of the EMF.

2.0 LEGAL AND REGULATORY FRAMEWORK

2.1. National Regulatory Framework

The National Environment and Planning Agency (NEPA), the body primarily responsible for environmental regulations, administers a Permit and License System (P&L) to which construction and operation of all Jamaican Facilities and development projects are subscribed. NEPA operates under the auspices of the National Resources Conservation Act (NRCA). Some of the infrastructure types within the JSIF portfolio requires an environmental permit from NEPA. The permit will include the necessary terms and conditions for implementation of the projects. Depending on the environmental sensitivity or vulnerability of contiguous ecosystems, as well as the scale of the project, NEPA may require the preparation of a full Environmental Impact Assessment (EIA) prior to granting the environmental permit. NEPA also grants license to facilities that discharge effluents into the atmosphere, ground, and/or surface water. Considering that construction and operation of agro-processing facilities now is included in the list of proposed activities under REDI II, effluent discharge is likely and therefore any required permit will be obtained to ensure compliance with the Law.

[1] The World Bank's OP4.01 requires that the environmental assessment takes into the social aspects in the evaluation of the likely impacts of a Bank-financed project on the surrounding environment.

There are also other Government agencies that have environmental management and regulatory responsibilities as indicated in the **Table 1** below.

Table 1: Agencies with Environmental Regulatory and Management Responsibilities

AGENCY	REPONSIBILITY	ACT/LEGISLATION
Office of Disaster Preparedness and Emergency Management (ODPEM)	The Act gives ODPEM the authority to coordinate national disaster response activities and gives limited power to the Prime Minister in making disaster declarations. The limited power can be exercised by the Prime Minister during disaster events or an impending threat based on the advice of ODPEM. The revised Disaster Management Act will provide guidelines for the declaration of disaster areas, and evacuation orders. It will also give power to ODPEM to create regulations in disaster management and gives legal standing to authorities and documents pertaining to disaster management.	Disaster Preparedness and Emergency Management (DPEM) Act (1993)
Ministry of Local Government and Community Development (MLGCD)	The MLGCD through the Parish Councils enforces the requirements or guidelines for land use based on legal instruments known as Development Orders which covers most of the urban and coastal areas of Jamaica. "Development Orders are to control both rural and urban development, ensure proper sanitary conveniences, coordinate building of roads and other public services, and protect public amenities (conservation areas, wetlands, mangroves)". The Act outlines specific standards for land use, density and zoning in reducing disaster related risks.	The Town and Country Planning Act (1958)

National Solid Waste Management Authority (NSWMA)	The Act governs the actions, procedures and operations of the National Solid Waste Management Authority (NSWMA) as it relates to the collection and disposal of waste in safeguarding public health. The Act also highlights operational guidelines for hazardous waste as a transboundary hazard. Sanctions are incorporated into the Act and enforcement is the responsibility of various organizations/agencies. The NSWMA is the chief regulatory	The National Solid Waste Management Act (2002)

	Agency for the enforcing provisions under this Act.	
NEPA	The Act was established to protect and manage Jamaica's natural resources and control pollution. The guidelines provided by this Act cover monitoring and enforcement of environmental laws and regulations with regards to watershed protection and beach control among other issues. "The Environmental Management Unit of the Ministry of Health and local planning authorities monitor construction work to ensure that all development restrictions and requirements are properly adhered to"13. Sanctions and penalties can be assigned to particular offences based on breaches of the Act.	The National Resources Conservation Authority (NRCA) Act (1991)
MLGCD	The Building Act 2018 has been passed by both houses of Parliament and will be enacted into law. The Local Authorities or	Building Act

	Municipal Councils under the auspices of the Ministry of Local Government and Community Development (MLGCD) are responsible for enforcing the building regulations under the Act.	
MLGCD	The Parish Building Regulation and Development Orders outline and guide the development process in Jamaica. The Parish Building Regulations provide guidelines to developers based on the existing building codes. The Parish Development Orders are used to ensure that premises in areas of the parish are not used contrary to the purpose provided by developers and residents. Other regulatory and related instruments pertaining to DRR include but are not limited to the Severe Weather Orders, Draft National Building Codes, and international legislative considerations and guidelines.	The Parish Building Regulation and Development Orders
Water Resources Authority (WRA)	The Act gives the WRA authority regulatory power over the country's water resources. The WRA is responsible for planning, development and equitable allocation of water resources. The Act gives power to the Minister of Water Land Environment and Climate Change to guarantee loans to the WRA where needed. Provisions for the abstraction and use of water, control of water quality, control and protection of underground water are all outlined (WRA 1995). The Act allows for punishment of polluters of water resources.	The Water Resources Act (1995)

Ministry of Health (MOH)	The Public Health Act (1974) outlines the provisions and guidelines for the establishment of the Central Health Committee and Local Boards to contain and treat various diseases. The MOH regulates the immunization of children, assembly of persons, and closure of public places for health reasons. In 1985, the Act was amended to include monitoring of imported food, food preparation and distribution. Hazard Analysis Critical Control Point (HACCP) system is a procedure utilized by the Ministry of Health to ensure safe food production. Penalties can be applied where provisions and guidelines are not adhered to.	The Public Health Act (1974)
Forestry Department	The Act provide for the protection and management of designated forest reserves. It empowers designated persons to enter premises in forest Reserves, Forest management/protected Area or lands which need to be declared; and to ensure compliance with the Act and Regulations.	The Forest Act (1996)

Pesticide Control Authority	The Act is designed to manage and regulate the use of pesticides which are potentially harmful to the environment. It empowers designated personnel to enter any premises or vehicle where extermination is being carried out, pesticides are manufactured, stored, kept to inspect, investigate and take samples and where	The Pesticides Act (1987)

	required seize and detain any records or articles as evidence of the commission of an office.	
Ministry of Health	The Act is designed to control air pollution by regulating the amount of any noxious or offensive gas, which is permitted to escape or discharged from any affected premises into the air. The Law empowers designated persons to enter, inspect or examine premises where work is in progress and take samples, test of smoke, fumes, gas, or dust or make enquiries.	The Clean Air Act (1964)
NEPA	The Act provides for the protection of watersheds and areas adjoining watersheds and promote the conservation of water resources.	The Watersheds Protection Act (1963)
Jamaica Defence Force	The Defense Act (1962) governs the actions, procedures and operations of the Jamaica Defense Force (JDF). The Act outlines the development of the regular and reserve forces along with their names. It also outlines the duties of the Defense Board as defined by the Act and charges the JDF with the defense and maintenance order of Jamaica. The JDF is deployed during the public state of emergency once declared by the Governor General to ensure that public order is maintained.	The Defense Act (1962)

Ministry of Labour and Social Security (MLSS)	The Factories Act speaks to: Ensuring the safety, health and welfare of persons who are employed in any factory or in connection with machinery, and in particular, and without prejudice to the generality of the foregoing provisions, any such regulations may provide for: • the safe means of approach or access to, and exit from, any factory, or machinery; • the fencing and covering of all dangerous places or machines; • life-saving and first aid appliances; • securing safety in connection with all operations carried on in a factory; • securing safety in connection with the use of cranes, winches, pully-blocks and of all engines, machinery, mechanical gear and contrivances generally whatsoever; • the proper ventilation of any factory, having regard to the nature of the process carried on therein; • the sanitation, including the provision of lavatory accommodation (having regard to the number of workers employed) at any factory	The Factories Act (1943)

	The National Heritage Trust Act: ▪ outlines the role of the trust in the preservation of national monuments and anything designated as protected national heritage, and also the recording of any precious objects or works of art to be preserved as well as protecting botanical or animal life ▪ governs the administration of penalties and imprisonment for the destruction or removal of anything designated a national monument or protected.	**The National Heritage Trust Act (1985)**
Ministry of Science Technology Energy and Mining	The vision of the National Energy Policy is for Jamaica to have modern, efficient, diversified and sustainable energy sector providing affordable and accessible energy supplies with long-term energy security and supported by informed public behavior on energy issues and an appropriate policy, regulatory and institutional framework. Some of the goals of the National Energy Policy are: Government Ministries and Agencies are model/leader in energy conservation and environmental stewardship in Jamaica. Jamaicans use energy wisely and aggressively pursue opportunities for conservation and efficiency.	**National Energy Policy (2009)**

	Jamaica realizes its energy resources potential through the development of renewable energy sources and enhances its international competitiveness, energy security whilst reducing its carbon footprint.	

2.2. Applicability of Regulatory Framework

Considering the potential environmental and social impacts of the sub-projects currently being implemented by JSIF and those that are being considered for implementation under the REDI II, the primary regulatory or authoritative bodies that may be engaged are indicated in the table below.

AGENCY/AUTHORITY	**FUNCTION**
National Environment and Planning Agency (NEPA)	Environmental regulatory agency which falls under the umbrella of the Ministry of Economic Growth and Job Creation (MEGJC)
Municipal Corporations (Local Authorities)	The technical and enforcement arm of the Ministry of Local Government and Community Development
Water Resources Authority	Regulatory entity for the abstraction and use of water resources.
National Solid Waste Management Authority (NSWMA)	Regulates the collection, transportation, and disposal of solid waste and falls under the auspices of the MLGCD.
Pesticide Control Authority	Authority responsible for the regulation of the use of pesticides in the country.
Rural Agricultural Development Authority (RADA)	Established under the Rural Agricultural Development Authority Act (1990), RADA is the chief agricultural extension and rural development agency.

ACTS	PROVISIONS
Natural Resources Conservation Authority Act (1991)	Provides for the management, conservation and protection of the natural resources of Jamaica. The Act also addresses sewage and trade effluent discharges as well as air pollution. The NRCA Act serve as the umbrella for a number of subsidiary Acts, so to speak, for example, the Water Shed Protection Act (1963); Beach Control Act (1956); The Clean Air Act (1964); Watershed Protection Act (1963); Wildlife Protection Act (1945); the Endangered Species Protection Act (2000); and the Natural Resources Conservation (Permits and Licensing) Regulations (1996). The NRCA Act is administered by the Natural Resources Conservation Authority/NEPA. All environmental permits and licenses for development activities under the REDI II that fall within the confines of the NRCA Act must be submitted to NEPA for approval. The NEPA will assess the proposed development and make recommendations for an environmental impact assessment (EIA) if required. The agency has final approval in this regard.
Flood Water Control Act (1958)	The Act provides for the management of watercourses to protect against floodwater damages. NWA administered the Flood Water Control Act. Any project activities that involve drainage and bridge works or which potentially will impact watercourses will go through the NWA.
The National Solid Waste Management (NSWM) Act	The NSWM Act is administered by the National Solid Waste Management Authority (NSWMA) and provides for the management of solid waste in an environmentally friendly manner. This body will regulate the collection, storage, transportation and disposal of any waste generated at the sub-project sites.

The Town and Country Planning Act (1958)	The Act provides the framework for all development in the Country. It falls under the responsibility of the MLGCD and is administered by the Town and Country Planning Authority and the Local Planning Authorities (Municipal Corporations). The designs for all infrastructure sub-projects under the REDI II must be submitted to the respective Municipal Corporations for approval and is subject to monitoring by the to ensure compliance with Development Orders.
Public Health Act (1985)	The Municipal Corporations also administered the Public Health Act (1985), which governs the protection of the public and environmental health, waste management and pollution control. Within these legislations lies the authority of the Planning Division of the Corporations. Once an application is submitted to the Corporations a comprehensive assessment will be made of the design, potential impacts of the development and the conformity to zoning requirements for granting of permission. The Corporations will circulate copies of the design to other regulatory agencies such as the Environmental Health Unit of the Ministry of Health and NEPA to solicit inputs on the adequacy of the designs and any need for impact assessment or incorporation of mitigation measures.
Water Resources Authority Act (WRAA)	The Act gives the WRA authority regulatory power over the country's water resources. Provisions for the abstraction and use of water, control of water quality, control and protection of underground water are outlined in the WRAA. Any sub-project that include the abstraction of surface or groundwater will require a WRA permit.

2.3. World Bank Safeguard Policies

The World Bank funded projects and activities are governed by Operational Policies (OP), which are designed to ensure that the projects' implementation approaches are economically, financially, socially and environmentally sustainable. The Bank has specific safeguard policies, which include Environmental and Social Assessments and policies designed to prevent inadvertent adverse impacts on people and the environment. These specific safeguard policies address pest management, involuntary resettlement, natural habitats, physical and cultural resources, safety dams, indigenous peoples, projects on international waterways and projects in disputed areas.

The World Bank's environmental assessment policy and recommended procedures are used to identify, avoid, and mitigate the potential negative environmental impacts associated with Bank lending operations and are described in the Bank's **Operational Policy (OP)/Bank Procedure(BP) 4.01: Environmental Assessment**. This policy is considered to be the umbrella policy for the Bank's environmental 'safeguard policies' which among others things include: Natural Habitats (OP 4.04), Forests (OP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP 4.11), and Safety of Dams (OP 4.37).

Under OP 4.01 the Bank will undertake **environmental screening** of each proposed project to determine the appropriate extent and type of environmental assessment required. Proposed projects are classified into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. The categories of potential environmental impacts are classified as A, B, C and FI, as described below.

2.3.1. World Bank Project Category Description

2.3.1.1. Category A project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sub-project sites or facilities subject to physical works. The EA for Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" scenario), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For

Category A project, a borrower is responsible for preparing an Environmental Impact Assessment (or a suitably comprehensive regional or sectorial EA).

2.3.1.2. Category B project has potential adverse environmental impacts on human populations or environmentally important areas, including wetlands, forests, grasslands, and other natural habitats - which are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects.

2.3.1.3. Category C project is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required.

2.3.1.4. Category F or FI project involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

During the project preparation process, preliminary reviews of the proposed sub-project types to be implemented under REDI II were conducted. According to these reviews, like the ICBSP, ICDP and DVRP REDI II is designated Category B status based on the projected environmental impacts associated with anticipated sub-activities. These impacts will be managed or mitigated through the design and implementation of appropriate measures. The World Bank Safeguard Policy OP 4.01 for Environmental Assessment (EA) is triggered, and requires that an Environmental Management Framework (EMF) be prepared along with an Environmental Management Plan (EMP) to guide the implementation of specific activities in an effort to prevent or minimize environmental impacts.

Since the specific sub-projects are not currently identified, it is difficult to precisely assess the potential impacts, and to determine if special attention should be paid to mitigate any effects on natural habitats, forestry and physical cultural resources. Consequently, the Natural Habitat Policy (OP 4.04), Forestry Policy (OP 4.36) and Physical and Cultural Resources Policy (OP 4.11) have been triggered as a precaution, and the relevant mitigation measures are included in this EMF to ensure that they are taken into account in the planning process. Based on the sub-project activities executed under the previous REDI Project, we anticipate that sub-projects under REDI II will include the use of agricultural pesticides. Therefore, the Pest Management Policy (OP/BP 4.09) will also be triggered. A total of five OP/BP has been triggered by REDI II. Only OP/BP 4.01, OP/BP 4.04 and OP/BP 4.11 was triggered by the DVRP while OP/BP

4.01 and OP/BP 4.11 was triggered by the ICDP. The applicable policies are described briefly below just in case they become relevant as sub-projects are defined.

- Operational Policy 4.04 on Natural Habitats seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present).

- The objective of OP/BP 4.11 is to avoid or mitigate adverse impacts on physical cultural resources from development projects that the World Bank finances. Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The loss of such resources is irreversible, but fortunately, it is often avoidable. Physical cultural resources are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, national level, or within the international community.

- Operational Policy 4.09 on Pest Management seeks to ensure that rural development and health sector projects avoid or minimize the use of harmful pesticides and where use is inevitable, measures are put in place to mitigate against environmental impacts. A preferred solution is to use Integrated Pest Management (IPM) techniques and encourage their use in the whole of the sectors concerned. The Bank requires that any pesticide it finances be manufactured, packaged, labelled, handled, stored, disposed of, and applied according to standards acceptable to the Bank. The Bank does not finance formulated products that fall in WHO classes IA and IB, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers,

or others without training, equipment, and facilities to handle, store, and apply these products properly.

- The Bank's Forests Policy (Operational Policy/Bank Procedure 4.36) aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. The objective of this policy is to assist borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. The Bank also assists borrowers with the establishment and sustainable management of environmentally appropriate, socially beneficial, and economically viable forest plantations to help meet growing demands for forest goods and services. This policy applies to the projects that have or may have impacts on the health and quality of forests, projects that affect the rights and welfare of people and their level of dependence upon or interaction with forests, and projects that aim to bring about changes in the management, protection, or utilization of natural forests.

Careful examination (screening) of subprojects in the future is warranted to ensure that adequate steps are taken for protection of natural habitat and forestry, conservation of physical cultural resources, forestry and to protect the environment from harmful pesticides. During screening, strong efforts will be made to ensure the exclusion of sub-projects that will cause irreparable or irreversible impacts. Screening of proposed projects will reveal whether the appropriate inquiries must be included in the analysis of environmental impacts and the design of mitigation measures. This EMF report provides details on those types of possible impacts in the context of this program, as well as guidelines for screening and subsequent actions.

2.4. Confluence of the World Bank Safeguard Policies and the Country Systems

In 2006, the World Bank had conducted a Safeguards Diagnostic Review For Piloting the Use of Jamaican Systems to Address Environmental and Social Safeguard Issues in the Proposed Inner-City Basic services Project (ICBSP) and determined that the main

difference between Jamaican national environmental requirements for the types of infrastructure projects financed by JSIF and those of the World Bank and other international development partners is the preparation and use of an Environmental Management Plan (EMP). Consequently, the Country System with the inclusion of a generic EMP was adopted for management of potential environmental impacts during the implementation of Inner-city Basic Services Project (ICBSP). This approach, which takes into consideration Jamaican legal requirements and the World Bank's operational policy requirements, has evolved to account for the more complex sub-projects that will be undertaken under the Jamaica Disaster Vulnerability Reduction Project (DVRP), with a generic EMP for relatively simple subprojects, and a customized EMP derived from a more detailed assessment for relatively complex subprojects. Where necessary, customized EMPs will be developed for applicable REDI II sub-projects, otherwise the generic EMPs will be applied. Also, the **JSIF's environmental management system (EMS) is certified to ISO 14001:2015 Standards** and therefore the potential environmental issues arising from sub-projects approved for implementation under REDI II will be managed in accordance with international standard requirements. If national requirements differ from the World Bank requirements, the OP/BP 4.01 will prevail or whichever of the two standards is higher.

An EMP sets out project specific mitigation measures and corresponding monitoring requirements. The use of generic EMPs (Appendix 3) for small-scale infrastructure projects with minor adverse environmental impacts (as in this case) has become internationally accepted good practice, and generic or standardized EMPs are often adapted as Standard Operating Procedures (SOP) for relatively simple projects. More complex projects, or those occurring in sensitive areas or with potentially significant impacts, will use an EMP that has resulted from the detailed analysis of the specifics of a particular subproject, commonly as the result of an EIA and/or environmental permit required by the country system.

Table 2 below provides a generic list of infrastructure categories and project types to be financed by the JSIF as at the time of this ESMF. It also shows requirements for an environmental permit from NEPA and / or an EIA depending on project type. The need for preparation and use of a project specific EMP based on project categories and types is also indicated in **Table 2**.

2.5. JSIF's Innovative Environmental Policy Requirements

The long-term sustainability of sub-projects is a key objective in the implementation of JSIF sub-projects. Therefore, the JSIF continuously researches and adopts new and sustainable approaches and/or technologies to improve the operational efficiency of its sub-projects and to reduce their impacts on the environment. In 2011, the JSIF drafted a Green Elements Policy which focuses mainly on four components: Green Space; Water Conservation; Energy Conservation; and Waste management. The relevant requirements of the Policy apply to all project portfolios. The JSIF is also in the process of drafting a sustainable procurement policy to lay the foundation for the organization's thrust to reduce its environmental footprint and to promote and entrench sustainability in its community development approaches.

As a policy requirement, a green space will be included in the construction plan for all applicable building sub-projects, for example, agro-processing facilities. All buildings must be equipped with energy and water efficient fixtures including low flush toilets, low flow faucets, LED light bulbs, solar external lights, and motion light sensors, *inter alia,* where necessary. Rainwater harvesting systems will be implemented at applicable sub-projects, and where practicable wastewater reuse systems will be explored. Considering the high cost of electricity supplied by the National Grid, the feasibility of the use of alternative energy solutions such as wind and solar power as energy source to run building facilities or operate irrigation pumps will be considered on all occasions and implemented if necessary.

Under the JSIF Policy, the minimum requirement for onsite sewage treatment at sub-project sites is a secondary treatment system. The system must have at minimum a septic tank, gravel bed, chlorination chamber, and soak-away pit. However, the replacement of gravel bed with reed bed to provide tertiary level treatment is the preferred option and will be implemented as needed.

The environmental Officer will conduct training for staff annually and on a as need basis with a view to increase exposure to and awareness of new environmental technologies to be incorporated in the sub-projects. The JSIF will provide environmental maintenance training for a select committee (Maintenance Committee) of project beneficiaries for each sub-project.

Table 2: Infrastructure Project Categories and Regulatory and Other Environmental Requirements

PROJECT CATEGORIES	PROJECT TYPES	NEPA Permit[2] Yes/No (Y/N)	EMP[3] Yes/No (Y/N)	NOTES
AGRO-PROCESSING FACILITIES	▪ Construction, expansion, or rehabilitation of cold storage and agricultural products processing plants including meat, poultry and vegetable *inter alia* processing infrastructure.	**Y**	**Y**	1. NEPA permit is also required if a bio-digester is installed. 2. If septic tank/tile field is installed, a project brief should be sent to NEPA and comments from WRA and Environmental Health Unit of the Ministry of Health should be obtained. 3. If connection is to be made to public sewer system, NWC permission must be obtained.

[2] This means an environmental permit and most likely the preparation of an EIA (Environmental Impact Assessment)
[3] Environmental Management Plans (EMPs)

ANIMAL REARING FACILITIES	▪ Construction, rehabilitation, or expansion of small ruminants and pig rearing facilities including associated amenities, such as sanitation system.	**N**	**Y**	**1.** NEPA permit is required if a bio-digester system is to be installed. **2.** If septic tank/tile field is installed, a project brief should be sent to NEPA and comments from WRA and Environmental Health Unit of the Ministry of Health must be obtained. If connection to public sewer system NWC permission must be obtained.
BRIDGES	▪ Construction or rehabilitation of major bridges.	**Y**	**Y**	NWA should be consulted; NEPA may require EIA.
	▪ Construction or rehabilitation of parochial bridges: small, single lane bridges and approaches, foot bridges and retaining walls.	**Y**	**Y**	Parish Council should be consulted; NEPA may require EIA if sensitive natural habitat is affected.

PROTECTED AGRICULTURE	▪ Construction of greenhouses and other buildings for the production of crops.	N	**Y**	
SMALL ROADS	▪ Small roads in agricultural areas, including small, single lane bridges and approaches, foot bridges, retaining walls, fording and associated drainage structures.	N **N**	**Y**	Small rural roads mean Jamaican Category C (minor roads) less than 5km in length and an average width of 5m.
	▪ Upgrading, rehabilitation and repair of urban local access roads		**Y**	
URBAN DRAINAGE	▪ Construction and/or rehabilitation of urban drainage systems including gullies and other types of storm	**Y**	**Y**	NWA and local Parish Council also should be consulted. The anticipated REDI II drainage sub-projects are not anticipated to fall in this category and therefore will not require a permit.

	drains in major urban centres.			
SANITATION SYSTEMS	▪ Construction of sanitation systems for treatment of sewage.	**Y**	**Y**	1. NEPA permit may be required for sewage treatment system based on the capacity and the type of usage. 2. NEPA permit is required if a bio-digester system is installed. 3. If septic tank/tile field is installed, a project brief should be sent to NEPA and comments from WRA and Environmental Health Unit of the Ministry of Health must be obtained. 4. If connection to public sewer system NWC permission must be obtained.

3.0 SUB-PROJECT RISK CATEGORIZATION

The environmental and social risks of the sub-projects to be implemented under the REDI II and any other JSIF projects will be assessed by a team consisting of the Environmental, Social and Technical Officers. The sub-projects will be assessed based on predetermined criteria including potential level or magnitude of impact in terms of number of people or area; environmental sensitivity of the location of the project; permanence of the impacts; potential for impact to spread to other areas including adjacent properties; probability for significant adverse impact; concerns of social issues; presence of indigenous population; area is suspected or know to have historical artifacts; area is disputed; level of stakeholder engagement; and capacity and experience of implementing and executing entities to implement subproject type.

The standardized JSIF environmental and social screening checklist (Section 5.1.2) will be used to assess the sub-projects' risks. Based on these criteria, the sub-projects will be categorized into one of four risk groups as indicated below.

High Risk

These sub-projects may require an environmental permit to be obtained and an environmental impact assessment to be conducted prior to implementation. A site specific environmental management plan (EMP) will be developed for these types of sub-projects. The following are characteristics of sub-projects that are considered high risk.

The sub-project is likely to generate a wide range of significant adverse risks and impacts on human populations or the environment. This could be because of the complex nature of the project, the scale (large to very large) or the sensitivity of the location(s) of the project. This would take into account whether the potential risks and impacts associated with the project have the majority or all of the following characteristics:

- ✓ Long term, permanent and/or irreversible (e.g. loss of major natural habitat or conversion of wetland), and impossible to avoid entirely due to the nature of the project
- ✓ High in magnitude and/or in spatial extent (the geographical area or size of the population likely to be affected is large to very large)
- ✓ Cumulative and/or transboundary in nature
- ✓ A high probability of serious adverse effects to human health and/or the environment (e.g. due to accidents, toxic waste disposal, etc.)

I. The area likely to be affected is of high value and sensitivity, for example sensitive and valuable ecosystems and habitats (protected areas, National Parks, World Heritage Sites,

Important Bird Areas), lands or rights of indigenous people or other vulnerable minorities, intensive or complex involuntary resettlement or land acquisition, impacts on cultural heritage or densely populated urban areas;

II. Some of the significant adverse environmental and social risk and impacts of the project cannot be mitigated or specific mitigation measures require complex and/or unproven mitigation, compensatory measures or technology, or sophisticated social analysis and implementation;

III. There are concerns that the adverse social impacts of the project, and the associated mitigation measures, may give rise to significant social conflict;

IV. There is a history of unrest in the area of the project or the sector, and there may be significant concerns regarding the activities of security forces;

V. The project is being developed in a legal or regulatory environment where there is significant uncertainty or conflict as to jurisdiction of competing agencies, or where the legislation or regulations do not adequately address the risks and impacts of complex projects or changes to applicable legislation are being made, or enforcement is weak;

VI. The past experience of the Borrower and the implementing agencies in developing complex projects project is limited, and their track record regarding environmental and social issues generally is poor;

I. Stakeholder engagement is weak;

II. There are a number of factors outside the control of the project which could have a significant impact on the environmental and social performance and outcomes of the project

Substantial Risk:

These sub-projects may require an environmental permit, however, an environmental impact assessment almost always not required. Standard environmental and social screening and assessment is required. The JSIF's generic environmental management plan (EMP) and social policies will be applied to the management of environmental and

social issues for these types of sub-projects. The following are characteristics of sub-projects that are considered substantial risk.

I. The project may not be as complex as High Risk projects, its scale may be smaller (large to medium) and the location may not be in such a sensitive area. This would take into account whether the potential risks and impacts have the majority or all of the following characteristics:

- ✓ Mostly temporary, predictable and/or reversible, and the nature of the project does not preclude the possibility of avoiding or reversing them (although substantial investment and time may be required)
- ✓ Medium in magnitude and/or in spatial extent (the geographical area and size of the population likely to be affected are medium to large)
- ✓ The potential for cumulative and/or transboundary impacts may exist, but they are less severe and more readily avoided mitigated than for High Risk projects
- ✓ Medium to low probability of serious adverse effects to human health and/or the environment (e.g. due to accidents, toxic waste disposal, etc.), and there are known and reliable mechanisms available to prevent or minimize such incidents

II. The effects of the project on areas of high values or sensitivity will be lower than High Risk projects

III. Mitigation and/or compensatory measures that may be designed more readily and be more reliable than those of High Risk projects.

Moderate Risk:

These sub-projects do not require an environmental permit, however or an environmental impact assessment. Standard environmental and social screening and assessment is required. The JSIF's generic environmental management plan (EMP) and social policies will be applied to the management of environmental and social issues for these types of sub-projects. The following are characteristics of sub-projects that are considered substantial risk.

I. The potential adverse risks and impacts on human populations and/or the environment are not likely to be significant. This is because the project is not complex and/or large, does not involve activities that have a high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. As such, the potential risks and impacts and issues are likely to have the following characteristics:

- ✓ Predictable and expected to be temporary and/or reversible
- ✓ Low in magnitude
- ✓ Site-specific, without likelihood of impacts beyond the actual footprint of the project
- ✓ Low probability of serious adverse effects to human health and/or the environment (e.g. do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.)

II. Risks and impacts can be easily mitigated in a predictable manner

Low Risk:

A sub-project will be classified as Low Risk if its potential adverse risks and impacts and issues on human populations and/or environment are likely to be minimal or negligible. These projects, with few or no adverse risks and impacts and issues, will not require further environmental and social assessment.

4.0 POTENTIAL PROJECT IMPACTS

The implementation of the proposed sub-projects will have a net positive impact on the environment; however, if not managed adequately some of the proposed activities including civil works and pesticide use could have adverse effects. It is anticipated that the impacts of the sub-projects will be small and reversible, however the true nature of the effects will not be known until the necessary environmental screening and assessments are conducted at the proposed sub-project sites. The following is a general outline of the potential impacts from implementation of the proposed sub-projects types.

4.1. Impacts: Construction and Operation of Agro-Processing Facilities

- Air pollution from improper dust management at the site
- Noise pollution

- Poor solid waste management
- Destruction of or damage to trees and wildlife habitat
- Soil and water pollution caused by runoff of concrete dust or petroleum compounds from leaking equipment or stored materials
- Contamination of groundwater and surface water by discharged effluent
- Occupational health and safety risks
- Destruction of physical artifacts
- Damage to natural habitat and displacement and/or killing of species
- Unsafe working conditions
- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Poor labour relations
- Physical or economic dislocation
- Sexual harassment

4.2. Impacts: Construction and Operation of Animal Rearing Facilities

- Greenhouse gas emissions
- Air pollution from improper dust management at the site
- Noise pollution
- Poor solid waste management
- Destruction of or damage to trees and wildlife habitat
- Soil and water pollution caused by runoff of concrete dust or petroleum compounds from leaking equipment or stored materials
- Contamination of groundwater and surface water with pathogens from animal waste
- Destruction of physical artifacts
- Occupational health and safety risks
- Damage to natural habitat and displacement and/or killing of species
- Unsafe working conditions

- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation

4.3. Impacts: Construction and or Rehabilitation of Bridges

- Pollution of river from discharge of cement wash-water
- Siltation or sedimentation of rivers and other water bodies
- Air pollution from project generated spoils (dust)
- Diversion of normal water course
- Death of aquatic species due to sedimentation, pollution from oil spills, and habitat disturbance
- Exposure to occupational health and safety risks
- Destruction of natural habitat due to clearing of riparian zones
- Poor solid waste management
- Traffic congestion and potential for motor vehicle accidents
- Reduction of flooding and property damage
- Unsafe working conditions

- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation

4.4. Impacts: Construction and Operation of Greenhouses

- Greenhouse gas emission
- Air pollution from improper dust management at the site
- Noise pollution

- Poor solid waste management
- Destruction of or damage to trees and wildlife habitat
- Occupational health and safety risks
- Pesticide and nutrient contamination of groundwater and surface
- Exposure of workers/farmers to pesticides
- Destruction of physical cultural artifacts
- Soil erosion
- Damage to natural habitat and displacement and/or killing of species
- Increased access if roads are improved to sites
- Unsafe working conditions (work at heights on towers)

- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation

4.5. Impacts: Construction and/or Rehabilitation of Roads and Drainage Systems

- Pollution of river from discharge of cement wash-water
- Siltation or sedimentation of rivers and other water bodies as a result of erosion
- Air pollution from project generated spoils (dust)
- Diversion of normal water course resulting in flooding and property destruction
- Death of aquatic species due to sedimentation and habitat disturbance
- Destruction of natural habitat due to clearing of riparian zones
- Occupational health and safety risks
- Environmental pollution caused by poor solid waste management
- Traffic congestion and potential for motor vehicle accidents
- Unsafe working conditions associated with traffic flow and use of heavy equipment onsite
- Involuntary resettlement
- Gender based discrimination

- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation
- Noise pollution
- Reduction in water quality
- Potential release of oil grease and other chemicals into surface water and groundwater
- Increased soil erosion

4.6. Impacts: Construction, Rehabilitation and Use of Sanitation Systems

- Air pollution from improper dust management at the site
- Noise pollution
- Poor solid waste management
- Destruction of or damage to trees and wildlife habitat
- Soil and water pollution caused by runoff of concrete dust or petroleum compounds from leaking equipment or stored materials
- Pollution of ground and surface water with nutrients from wastewater discharge
- Greenhouse gas emission
- Unsafe working conditions
- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation

4.7. Impacts: Landslide, Slope and River Bank Stabilization

- Increased sedimentation or siltation of rivers and other water bodies
- Disturbance and removal of vegetation including trees
- Air pollution associated with poor dust management
- Improper solid waste management
- Reduced loss of topsoil and productive lands

- Reduced destruction of property and infrastructure
- Unsafe working conditions
- Traffic Congestion and accidents
- Occupational health and safety risks
- Water pollution caused by oil or fuel leaks from equipment
- Involuntary resettlement
- Gender based discrimination
- Crime and violence
- Child labour and forced labour
- Physical or economic dislocation

4.8. Social Impacts of Project Activities

- Physical and or economic dislocation
- Loss of livelihood from destruction of natural habitat
- Damage or removal of physical artifacts
- Forced labour and/or child labour
- Discrimination against women and persons with disability
- Sexual harassment
- Inequity in pay for work done
- Outbreak of crime and violence
- Occupational health and safety risks
- Risks of poor labour relation onsite

The mitigation methods to reduce or prevent these impacts are described in **Section 5**.

5. ENVIRONMENTAL AND SOCIAL RISKS MANAGEMENT ARRANGEMENTS

The overarching responsibility for implementation of sub-projects implemented by JSIF, including management of environmental aspects, falls within the remit of the JSIF, the implementing Agency. There are multiple stakeholders that will play significant roles in the execution of sub-projects including the Municipal Corporations; National Environment and Planning Agency (NEPA); and sector specific MDAs e.g. National Works Agency, Office of Disaster Preparedness and Emergency Management (ODPEM),

Rural Agricultural Development Authority (RADA); Jamaica Greenhouse Growers Association (JGGA); Ministry of Industry, Commerce, Agriculture and Fisheries (MICAF); Ministry of Tourism; Jamaica Tourist Board; and Tourism Product Development Company (TPDCo); *inter alia*. Environmental consultations will be conducted with the entities to ensure they are all aware of the environmental sensitivities associated with the project and the performance standard expected. The JSIF will retain ultimate responsibility for the enforcement of good environmental management of all sub-projects.

As mentioned in Section 3, it is anticipated that the implementation of some sub-projects potentially will result in negative impacts on the environment. Consequently, a general set of procedures have been developed to manage and mitigate these impacts with a view to preserve the long-term sustainability of the environment and minimize the adverse effects of the project on workers and beneficiaries of the interventions. These procedures are outlined below and shall be implemented by JSIF.

5.1. Environmental and Social Screening

Some site-specific issues may present serious project related environmental risks and/or impacts. The proposed sub-project types may have significant impact on the environment or the existing site condition may impact the sub-project negatively (The term sub-project refers to i) a single activity such as construction of a cold storage facility or ii.) a group of activities being implemented under a single business plan for example the construction of a greenhouse cluster as well as a road and bridge to facilitate transportation of produce to market). The implementation of a sub-project in close proximity to a river, wetland or protected forest could have potential impacts on unique natural habitat which affects endemic species of fauna or flora. Also, a site with high water table could cause flooding of sub-project if implemented or could have potential effect on the design and operation of sanitation systems such as soak-away pits, tile fields or reed bed. In such cases alternatives should be considered or the project application should be rejected due to the unsuitable site conditions. The JSIF has developed an environmental screening mechanism to determine the suitability of sub-project sites for the proposed interventions.

In addition, the land on which a project is to be located must be zoned for that specific type project as stipulated in the NEPA requirements and relevant local planning legislation. In this context, the local authorities (Municipal Co-operations) has an

important role to play, not only to review applications and issuing local planning permits, as required, but also in the review of the details of any proposed development facilities.

The projects will also be assessed for social risks including but not limited to potential for involuntary land acquisition; health and safety impacts on workers and the community in general; economic and physical dislocation; conflicts, crime and violence; disturbance of physical cultural resources; characteristics of potential project beneficiaries; and loss of livelihood from destruction of natural ecosystems caused by the project.

Also, some projects may cause complex environmental issues or affect sensitive ecological habitat, such as mangroves, forests, river vegetation, shorelines, or coral reefs. Projects may also cause significant social risks which must be managed. Such projects merit further detailed investigation and evaluation in order to compare alternatives and select the best option, and to design the most appropriate mitigation measures in the form of a site-specific Environmental Management Plan (EMP). If a project is highly sensitive from the cultural or social perspective, it too can merit a similar analysis. In such cases an Environmental Impact Assessment (EIA) would be necessary to assess the potential impacts, at a level of detail consistent with the scale of those potential impacts. The screening process described below would indicate whether such complex or sensitive conditions exist, and so guide the decision whether or not an EIA is needed. On the contrary, if conditions are fairly simple, the checklist and screening process below would indicate that this is the case, and a generic EMP could be relied upon to mitigate any fairly minor potential impacts. The generic EMP is described later in this EMF (Appendix 3).

5.1.1. Screening Process

Each project will be screened by a JSIF Technical Officer (TO), Social Officer (SO), and Environmental Officer (EO) early in the project cycle, to identify potential environmental and social impacts and social concerns, for example involuntary resettlement and land tenure issues, or the occurrence of sensitive ecological areas or zones of natural habitat. The technical and social officers will be provided with environmental training prior to participation in screening activities. The team shall visit and conduct a site surveillance with support from residents and other stakeholders of the beneficiary community. Once screening is completed (see environmental and social screening checklist in Appendix 4) by the team of officers listed above the TO and SO will input the information in Fund Manager (JSIF's MIS software) after which it is submitted for approval by the

Environmental Officer (EO). The EO use the information in **Table 1** above as a reference in seeking guidance from NEPA regarding the need for an environmental permit/license or environmental impact assessment, prior to the execution of the project. It is also important to determine if any other legal or loan requirements need to be satisfied, and whether the project is eligible under the loan criteria. This decision must be confirmed by the JSIF EO after reviewing additional site specific information as detailed in the Form "Checklist for Screening Site Specific Issues".

5.1.2. Checklist for Screening for Site Specific Environmental and Social Issues

This Form is prepared on Fund Manager (JSIF's critical project management software) by the TO and SO after the team completed screening process. The checklist is intended to identify relatively simple cases where a standard, generic EMP can be used for minor impacts, as compared to complex sensitive cases where additional work is needed to accurately and appropriately assess and mitigate potential impacts through an EIA.
Note: A "Yes" or "Do Not Know" response to any of the questions in the screening sheet will trigger Fund Manager to generate a set of generic mitigation measures which will be included in the Consultant's contract to design, cost and manage. The environmental officer will also assess the issue to determine the potential impacts and to ensure that the appropriate mitigation measures are implemented. The EO will also perform monitoring activities to determine if the mitigation measures are effective and make changes to to remedy the issue if necessary.

One completed copy of the screening form must be sent to the EO, prior to project application review and another copy must be attached to the project application.

5.1.3. Evaluation by Review Committees (Social and Technical) (SRC & TRC)

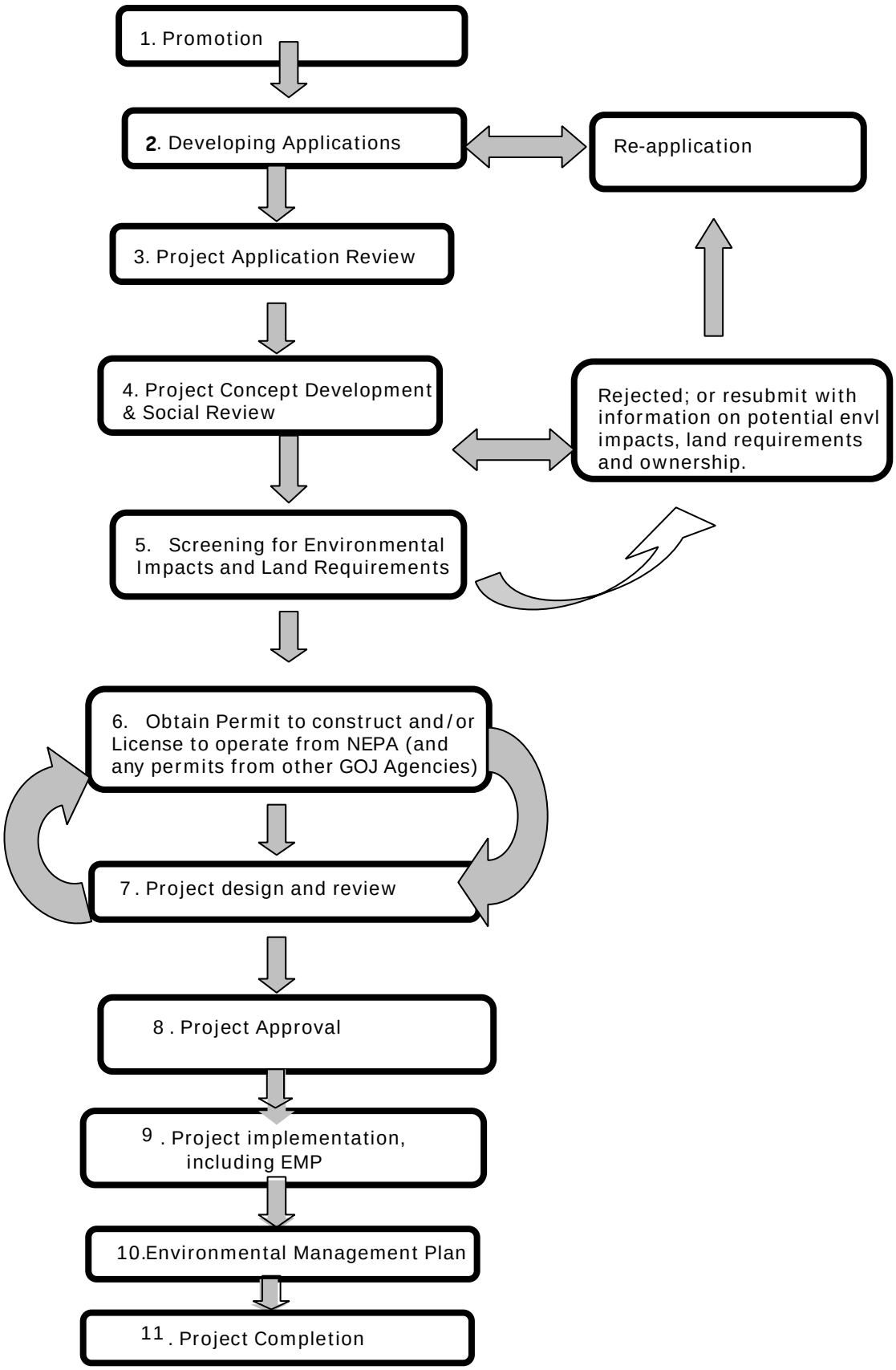
Subsequent to environmental and social screening, the Social and Technical Officers with support from the environmental officer will prepare an appraisal report for the project This report is submitted to the SRC for evaluation of impact to determine the project's feasibility. The SRC will evaluate the project based on a number of environmental and social criteria including:

- Potential environmental impacts and ease of mitigation;
- Employment potential;

- Health and safety risks of workers and community;
- Impact on living condition of residents;
- Involuntary resettlement including physical and economic displacement;
- Potential for conflicts;
- Capacity of community to implement the project – governance structure;
- Ability of the project to deliver community needs;
- Impact on community health care, education and income; and
- Sustainability

Only projects that are considered feasible environmentally and socially are approved by the SRC to continue in the project cycle/. Projects that are not feasible are usually rejected by the SRC or recommended for re-appraisal to improve on proposal. Post SRC, infrastructure projects are reviewed at TRC.

Figure 1: Integration of Screening with JSIF Project Cycle



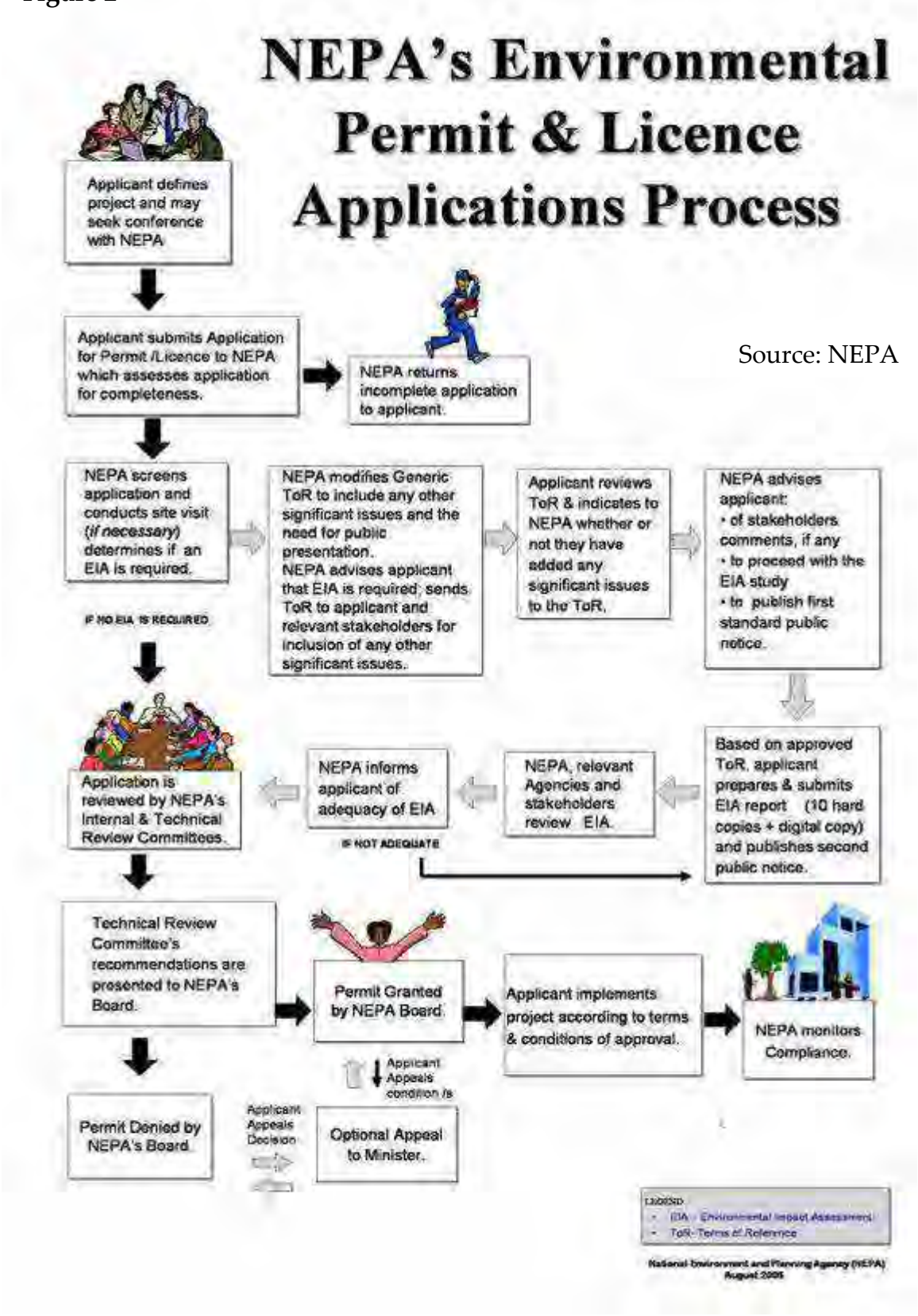
5.1.4. Implementing NEPA Requirements

Based on the results of the screening, JSIF staff (Project Officer in consultation with Environment Officer) will determine if a generic EMP is sufficient, or whether an ESIA is also required. If a NEPA permit is required, the application will be completed and submitted with any other necessary document including a detailed Project Information Form (PIF). NEPA reviews the application and determines whether (i) a full Environmental Impact Assessment must be prepared before a permit is issued, or (ii) a permit is issued by NEPA with or without Terms & Conditions. See **Figure 2** for the detailed flow diagram of NEPA's environmental permit application process. If needed, JSIF proceeds with the preparation of a full ESIA, using the NEPA TOR template and with the no-objection of the World Bank.

Once NEPA has issued a permit to construct, JSIF makes sure that all terms and conditions, and any requirements resulting from a full EIA, where applicable, are fully integrated into the design and the contract documents of the specific project. Depending on the nature of NEPA requirements, this may be done through an alternative design, special design features or modifications, an EMP, special contract clauses.

NEPA may also require special monitoring and reporting actions, and normally will carry out periodic monitoring of the implementation of the project to make sure the requirements are being met. The World Bank will also make periodic supervision visits to support the implementation of project environmental requirements.

Figure 2



Source: NEPA

5.1.4. Project Design and Technical Review

All sub-project design must be formulated by a qualified and competent individual or company. The project design must address environmental issues identified during screening and take into consideration measures recommended by NEPA as a condition of the permit. The formulator shall present the project design to the JSIF's Technical Review Committee (TRC) for a comprehensive assessment of the technical and environmental soundness. Upon approval by the TRC, the project design will be uploaded into Fund Manager and the Document Management System. Following TRC approval, the project will also be assessed by the Project Management Review Committee and the JSIF Board of Directors prior to final approval for implementation.

5.1.5. Implementing EMP Requirements

The proposed sub-projects to be financed by JSIF under REDI II are categorized as follows:

- Construction of agro-processing and cold storage
- Construction of tourism enterprises including the provision of on-site water supply and sanitation services
- Construction of new and/or retrofitting of major and parochial bridges, including supporting activities such as slope stabilization and landslide risk control and river training
- Rehabilitation of parochial roads and drainage systems.
- Construction and operation of animal rearing facilities and greenhouses
- Installation of irrigation systems

A standard generic EMP has been prepared to include mitigation measures for but not limited to the listed activities based on the expected likely environmental impacts (see Appendix 3 for the generic EMP by infrastructure category). The applicable EMP is incorporated into the bidding documents when procuring contractors and consultants to implement the project. Some projects may have additional requirements for mitigating and monitoring in response to issues identified during site screening, which shall also be specified in the bidding or contract documents. (If a permit to construct was received

from NEPA, then the generic mitigation measures and monitoring requirements should be amended to include the general and specific terms and conditions issued by NEPA; or, if an environmental impact assessment (EIA) is required, the resulting recommended mitigation measures from the ESIA will be incorporated into the EMP for the works, and included in the contract documents.)

5.1.6. Environmental and social Requirements in the Construction Contracts

Volume II (Technical Specifications Document) of the construction contract documents contain, in Part H, technical clauses on "Environmental and Social Mitigation and Health & Safety"; including a section on how the contractor shall deal with chance finds of cultural property and archaeological remains. The JSIF's contracts for civil works will be informed by the World Bank's policy document' "Guidance – Environmental Social Health and Safety in Procurement." The guidance document (Appendix 1) also provides guidelines for the operation of the contractors. Based on the screening results and depending on the type of infrastructure works to be executed, the JSIF Project Officer, in consultation with EO, must prepare a list of measures to mitigate potential adverse environmental and social impacts. These would include terms and conditions mentioned in NEPA's permit to construct or license to operate, including any specific measures from an EIA if one has been prepared for the subproject, and the relevant generic EMP (from Table 3) supplemented by any additional site specific measures, if required. Mitigation measures must also take into strict consideration, the applicable Environmental and Social Standards (ESS1 to ESS10) as outlined in the World Bank Environmental and Social Framework and which are summarized earlier in this document. Contractors will also be required to have their workers sign a code of conduct (see Appendix 7 for the sample workers code of conduct).

A clause in the Particular Conditions of Contract will refer to these environmental and social management requirements in the EMP and will state that it is a supplement to Part H of the Specifications. The Particular Conditions of Contract will also stipulate that any non-compliance with the mitigation measures set out in the contract will attract the same remedies under the contract as any non-compliance with the contract provisions; such remedies would be instructions, notices, suspension of work, etc. The Instructions to Bidders will highlight the inclusion of the EMP in the contract specifications and the contractor's obligation of compliance.

5.1.7. Managing Potential Impacts

The REDI II project will exclude any activity that involves the purchase of biological control agents. A screening checklist and Pesticide Management Plan including nonchemical measures for pest management and guidelines for proper selection, application, storage, handling, transport and disposal of pesticides has been developed for sub-projects that will require procurement of pesticides or that result in the increased use of pesticides. Considering the nature activities to be implemented under this REDI II, significant use of pesticides is likely, however integrated pest management (IPM) approach will be top priority. Incidental pesticide issue will be managed with the standard pesticide management plan, for example procuring pesticides from licensed suppliers, ensuring that the pesticides are approved for use and that users are properly trained. Only registered and license pest control operators will be contracted for termite treatments in buildings. Appendix 2 also outlines how JSIF manages significant aspects.

Another potential impact may be chance finds of physical cultural property. Site screening may indicate that the project site is in, or close to, an area with and important cultural property. The Jamaica National Heritage Trust (JNHT), under the provisions of the JNHT Act, may enter a property or site to investigate impacts on cultural properties. If there is a chance find of archaeological or cultural value the JNHT has a right to protect that find and may issue an emergency Preservation Order covering sites and buildings considered to be potentially archeologically important or significant.

Some areas of the country are declared as Historic District and the JNHT has the right to stop any works in these areas that may prove destructive to archaeological monuments or cultural property. If any chance find artefacts are found during project works the JNHT may need to perform Rescue Archaeology in order to secure and preserve these artefacts. This may require the temporary cessation of certain project activities to facilitate JNHT procedures. The contract specifications in Part H, Section 1.6 contain a clause that sets out the required actions for the contractor to comply with the requirements of the JNHT Act to protect any chance finds of cultural property[4].

[4] This provision will also satisfy the requirements of the policies on cultural property by the various development partners, such as the World Bank's, as set out in the draft OP 4.11 on Physical Cultural Property.

Local input will be solicited as to the appearance or disposition of buildings or structures with cultural, aesthetic, or historic value to the community. This type of community engagement is important to the image and success of any project.

For involuntary resettlement, a resettlement policy framework has been prepared to provide guidance for the preparation of site-specific resettlement action plans (RAPs). The RPF also provides guidance for cases requiring compensation and economic displacement. Land acquisition for activities under Component 1 will be done on the basis of "willing buyer willing seller". There will be no Involuntary resettlement related to land take or physical displacement of homes and involuntary resettlement resulting in physical relocation of households will not be undertaken under component 1. Under Component 2 involuntary resettlement will be avoided and only considered under exceptional circumstances when all options have been considered and the benefits thereof far outweigh the costs of resettlement. Appendix 6 outlines the guidelines for voluntary land donation. Under these circumstances, the requirements of the World Bank's OP/BP 4.12 will apply. RAPs will be prepared and reviewed by the Bank for non-objection. All planned resettlement actions will be executed before works can start. Compensation for lost crops or assets will be paid to affected persons before project activities can commence.

Some World Bank funded projects may include a Crisis Emergency Response Component (CERC) to strengthen the Government's response, including reconstruction in the event of an emergency such as man-made or natural disaster. In the event the CERC is triggered, funding from the project could be applied to finance the Government of Jamaica social safety net activities, related to the emergency.

5.1.8. Consultation and Disclosure Management

It is JSIF's mission to empower communities to effectively implement community-based programs aimed at social development. JSIF's Operational Manual (OM) prescribes a project preparation and implementation process that involves participation of the project community at all keys steps. This participatory process facilitates the consideration of environmental aspects as it integrates into the project cycle disclosure of project information to, and consultation with, the community.

Extensive community consultations will be critical for the implementation of all projects being executed by the JSIF, especially those having to do with construction or rehabilitation of critical infrastructure such as roads, bridge, buildings and drainage works. Communities must be engaged particularly with regards to matters such as

environmental and social safeguards; grievance redress mechanisms; eligibility criteria and how to access funding; implementation strategies; promotion and marketing; and community contribution; *inter alia*. Consultations with the communities on traffic management, selection of detours and alternate routes and entry and exit of heavy machinery in the communities will also be paramount in the implementation of the sub-projects. Attention to public concerns such as dust or noise will be required, with a meaningful and effective mechanism to receive and resolve complaints and grievances.

This EMP is also subject to public disclosure and consultation, in accordance with World Bank policy OP/BP 4.01. Therefore, extensive consultations with stakeholders were conducted and documented prior to the appraisal of previous Bank funded projects including the Integrated Community Development Project (ICDP) and Disaster Vulnerability Reduction Project (DVRP). Similar community feedback sessions were executed for the REDI II project. In fact, three major consultations were conducted in the parishes of St. Thomas, St. James and Westmoreland on June 17, 27 and 28, 2018 respectively prior to finalizing this EMF (Appendix 9). Included in the consultations were community based tourism experts and entrepreneurs, fisher folks, crafts men, bread and breakfast operators; nature tour operators; farmers; and Government stakeholder, etc. The applicable comments or concerns posited by the stakeholders were incorporated in the relevant section of the EMF. Generally there was a balance of women, men and youths in attendance at the consultations. The main issues of concern were:

1. Frequent loss of agricultural produce from climate related events and praedial larceny. The participants expressed frustration with the repeated loss of both crops and livestock from flooding and theft. Coming out of the discussions, protected agriculture including the construction of greenhouses and the improvement in drainage were suggested as possible solutions. The Westmoreland group also suggested the establishment of an insurance scheme to support farmers as a possible solution for restoration of their operations after a natural disaster and/or major theft.

2. Inadequate infrastructure. The stakeholders, especially those in St. Thomas were especially concerned about the poor roads, bridge and drainage infrastructure in the parish. This they said limits their access to both the tourism and agricultural markets. The stakeholders indicated that there are a significant number of potential tourism product for development in the parish of St. Thomas which could improve the socio-economic conditions of the residents, however because of poor access roads these sites

are both under developed and not utilized to their full potential. The farmers expressed that there is a need to repave the roads and repair or rebuild the bridges. According to the stakeholders, journey that should have taken a few minutes to travel by motor vehicle is sometimes taking hours depending on the rainfall. Occasionally, residents including farmers are marooned in their communities because of flooding or because bridges are impassable. The drainage network is reported as being inadequate to channel the volume of stormwater during heavy downpour.

The TPDCo indicated that there are plans to develop some of the locations mentioned by the residents. In response to TPDCo., a lot of the community stakeholders expressed skepticism regarding the genuineness of the promise as they felt as if they were fooled previously.

3. Lack of resources. The youths especially expressed concern regarding the challenges to access capital to fund their agriculture and tourism project ideas. They also mentioned the lack of or limited penetration of local produce in the tourism market which is considered to be lucrative.

4. Poor governance structure. This was a common theme in St. Thomas. The stakeholders indicated that there are a number of community based organizations in the parish, however their governance capacity is very low. Therefore, training, registration, licensing and capacity building will be critical for them to tap into the project and be sustainable.

The following matrix shows the key environment-related consultation and disclosure actions to be taken during project preparation and implementation of the sub-projects, and the outputs or results of these actions.

Step in Project Cycle as per Operations Manual	Actions for Screening and Social Management	Output / Results
Promotion[5]	▪ JSIF / community leaders to publicize JSIF's intention to provide funding for sub-projects in the Agriculture and Tourism[4]	▪ There is adequate awareness in the community about the project
Developing project application[4]	▪ JSIF to hold community wide consultation on local priorities needs[4] ▪ Community participate contribute	▪ Local and specific environmental concerns and constraints are considered
Project Concept Development	▪ Wide cross-section of community participate in screening process	▪ Alternatives have been considered and environmental feasibility is ascertained
Project Design and Review	▪ JSIF to publicly display designs for a minimum of 2 weeks ▪ Community reviews designs and "signs off"	▪ Ensures that designs are environmentally appropriate, among other criteria

[5] This step and the corresponding actions are not needed when a community has been pre-selected for a project.

Project Implementation (after contract award and signing)	▪ JSIF to arrange for sign board providing project details ▪ JSIF to organize Project Information Meeting held in and with community	▪ Information on contract and contractor is disclosed ▪ Community is made aware of its role in implementation ▪ Community has open channel of communication to JSIF
	▪ Community to attend and participate actively ▪ JSIF to establish Project Steering Committee (PSC) ▪ JSIF with the support of the Community to monitor work and progress of contractor ▪ JSIF and community to participate actively in PSC meetings ▪ JSIF will have full oversight of all subprojects and will perform regular monitoring and reporting.	for providing feed-back ◎ Community makes sure that EMPs are complied with

Project Completion	▪ Community to set up maintenance committee ▪ JSIF and partner agencies to assist community with O&M	▪ Continuing maintenance, including environmental aspects, is ensured

Finally, it should be noted that any environmental impact assessment (EIA) required for implementation of a sub-project will also require public consultation under Jamaican law (see section 5.1.3) as well as World Bank Policy. This type of consultation would occur once the details of a project are fully known, and will give the public a chance to comment upon and improve the designs.

5.1.9. Monitoring and Reporting

An implementation monitoring system has been established by the JSIF to ensure that projects are adequately supervised with a view to minimize environmental and social impacts. The monitoring system has several layers including the technical officers (TOs), consultants, environmental officers (EO), internal auditors, and external auditors. The TOs will be required to visit each project site at least once every two weeks while the respective consultants must visit the site at least once every week. The Consultants' clerk of works are required to be on site every day to conduct monitoring and supervision.

The Technical Officer will complete an environmental and social monitoring report in Fund Manager for every site visit for which a Contractor Environmental Management Conformance report will be generated automatically. This report can be used to guide management decisions with respect to the contractors' suitability to continue the existing contract and to secure future contracts. See Appendix 5 for a monitoring template for environmental and social monitoring which could be adapted for each context.

Internal and external auditing is a standard requirement for the maintenance of the JSIF ISO 14001 certification. The internal and external auditors will visit sites randomly usually once per year. A report detailing the performance of the EMS in respect of the ISO 14001 Standard is prepared for each audit. The EO will visit project sites at least twice during implementation as well as if environmental issues arise. A site monitoring report will be completed for each site visit.

Appendix 1 contains additional detailed steps in good environmental management, specifically for the design and operational (O&M) phase.

As with JSIF's policies and procedures, the JSIF Board as part of the governance structure ensures that the systems for adhering to the policies are established and maintained. JSIF's Management will have the main responsibility for monitoring the application and use of this ESMF. For this purpose, the EO will prepare bi-annual and annual reports as part of the project progress reports. These will contain the key steps, outputs and results of the environmental management actions taken for all implemented sub-projects. Problems and issues arising during the use of the EMP will be flagged and brought to the attention of the JSIF Management for action. Copies of the annual ESM reports will also be sent to the World Bank. The Bank will also review these reports during the periodic supervision missions.

JSIF's management information system (MIS) will be used to track the key steps in the environmental management system and to generate the necessary reports for the JSIF Board and Management. The following steps will be monitored for all projects:

Stage in Project Cycle	**Action**	**Result / Outcome**
Project Concept Development	Site Screening	Acceptance
		Rejection
Project Appraisal	Project Screening	NEPA Environmental Permit Required
		EMP Required
		None
Project Implementation		With full EIA

	NEPA Environmental Permit	With terms and conditions
	EMP	Included with contract
	EMP implemented	With problems or issues
		With complaints
		With residual impacts
Operation	Maintenance Plan	Environmental Requirements

6.0 Grievance Redress Mechanism

JSIF's assigned Social and Site Supervisor will play a critical role managing grievances associated with the implementation of all JSIF projects. The sharing of information in a timely manner and the quick attention to issues that arise are seen as key factors to good social management. Solutions to grievances related to construction disturbance, construction waste management, project benefits, contractors' workers' relationships with host communities, etc. will be pursued directly by the JSIF Social and Environmental Officer and in liaison with the relevant external actors.

The Environmental and Social Officers will help manage grievances. Where issues are outside of the Officers scope, it will be reported to the relevant persons within JSIF and any necessary external actors for resolution. Complaints will be noted in a grievance log with a response time between 1 and 4 weeks depending on the complexity of the issue.[6] The social officer shall specifically be responsible for managing the grievance register to ensure that all complaints are recorded, from reception to resolution. This information will be entered into the JSIF Management Information System (MIS) and be included in

[6] JSIF recognizes the need for confidentiality and sensitivity in handling matters/complaints related to sexual harassment. In this regard complaints can be submitted in confidence to the Legal officer at JSIF and/or through the Bureau of Gender Affairs 876-754 8575-8 or Centre for the Investigation of Sexual Offences at 876 754 8575-8.

the regular progress reporting. The reporting format for grievances for all projects under implementation is presented in Appendix 8.

Where satisfactory solutions to grievances cannot be achieved within the scope of the JSIF's mechanism, the aggrieved party may take the matter before the courts. Arbitration will be done by appropriate local institutions such as the Justice of the Peace, Community Works Coordinator, and the Dispute Resolution Foundation (which is a Government supported NGO with links to the courts. The courts do refer cases to the Foundation for arbitration as a measure to seek a faster resolution to disputes. This would not prevent the parties to the dispute from taking the matter to the court if a compromise cannot be reached.

Communities will also be notified of the GRM project information meetings, including those related to resettlement, and through other State entities including the Social Development Commission (SDC). Any grievances arising should be recorded and reported on in the JSIF MIS. This should include details on the date of the dispute, the nature of the dispute and how it was resolved.

MODALITIES FOR REPORTING GRIEVANCES		
Modality	**Contact**	**Location**
Direct (face to face)	JSIF Officers	Project site
	Consultants	Project site
Telephone	JSIF Receptionist	876-968-4545
Fax	JSIF Receptionist	876-929-3784
Email	JSIF Receptionist	feedback@jsif.org
Social Media (Facebook, Twitter, Instagram)	Communications Department	Type "jsifja" in any of the social media platforms to access JSIF page.
Web-based platform	Communications Specialist	www.jsif.org

7.0 TRAINING AND CAPACITY-BUILDING

JSIF will assess and ensure that based on the projects being managed and the associated environmental and social risks that suitably qualified and experienced professionals are engaged to manage environmental risks.

In addition to the requisite scientific skill set required to manage the EMP, the JSIF has also integrated the required legal skill set to ensure compliance is tracked. As such the responsibility for managing the EMP rests with the Environmental team and is supported by the Legal Officer.

The designated senior EO is also responsible for the provision of training sessions in environmental and social screening and management for JSIF project officers, field supervision staff, the community liaison officers and selected community representatives. The environmental staff shall prepare a training plan and training modules for project officers, field supervision staff, and key community members to familiarize them with the principles and procedures as set out in this framework. The EOs will be responsible for training community representatives.

Training needs will be identified to ensure continued efficacy of the environmental management system, through structured training of team members, contractors, consultants, suppliers, communities, and other stakeholders.

APPENDIX 1 – JSIF CONTRACTOR GUIDANCE DOCUMENTS

1.0 Potential Environmental and Social Impacts of REDI II Sub-projects

Positive

There are a number of potential positive environmental and social impacts of the sub-projects proposed to be implemented. In keeping with principles of sustainable development and holistic planning where the environment is defined as the physical, biological, social and economic factors of life, the projects will have the effect of:

i. Improving resilience of communities to disaster risk and enhancing capacity to adapt to climate change
ii. Improve agricultural production and economic growth of the country
iii. Eliminating environmental safety hazards from deteriorating structures
iv. Preservation of natural resources and ecosystems
v. Preservation of physical and cultural resources
vi. Improving environmental health through water, sanitation and health infrastructure
vii. The creation of temporary and permanent employment opportunities and long-term income generation
viii. The provision of social services that were previously not available
ix. Improved living conditions in poor communities
x. Improving access to markets and other services through upgrading and provision of access bridges and roads
xi. Increased capacity of project beneficiaries
xii. Increasing the Country's capacity to respond to hazards
xiii. Inclusive and equitable socio-economic development
xiv. Improving protection of the Country's productive assets, value chains, and connective network; which ultimately will facilitate sustained economic growth and development.

Negative

Most of the negative impacts associated with sub-projects are likely to occur during construction and rehabilitative works on roads, buildings, drainage, water and sanitation projects and where designs are inadequate. These impacts are likely to be minor considering the maturity of the JSIF's environmental management system. These issues will be easily identified and mitigated. Determination of these potential impacts forms an integral part of the analysis of the technical feasibility of the projects. In keeping with the principles of technical and environmental soundness however, adequate technical review, through peer review and using technical advisors, must take place to ensure adequacy of designs.

Negative impacts may also occur during operation particularly in relation to disposal of solid and sewage waste, use of pesticides in greenhouse operations and where there are improper operational and maintenance procedures in place. These issues must also be factored into the technical analysis of the projects at the design phase. Even with adequate planning and design, there are risks of impacts during implementation where guidelines are not followed at a supervisory level. All contracts and Terms of Reference for formulators, supervisors and contractors must therefore clearly show deliverables in relation to implementation of mandated environmental procedures. Potential negative impacts include:

i. Unnecessary removal of vegetation cover
ii. Creation of soil slippage and soil erosion conditions from excavation and inappropriate placing of excavated matter on slopes
iii. Blockage of drains from construction waste and excavated materials
iv. Ground and surface water pollution
v. Pesticide pollution of soil, ground and surface water
vi. Exposure of workers/farmers to pesticides
vii. Eutrophication of surface water from sewage discharge
viii. Excessive run-off where drainage on roads and off buildings is inadequate
ix. Inappropriate disposal of solid waste

x. Interruption of vehicular and pedestrian traffic flow or access to amenities
xi. Destruction of natural or critical habitats
xii. Greenhouse gas emissions
xiii. Damage or loss of physical cultural resources
xiv. Loss of indigenous or native species
xv. Exposure of workers to occupational health and safety risks
xvi. Exposure of community to health and safety risks
xvii. Involuntary resettlement
xviii. Prostitution
xix. Sexual harassment
xx. Discrimination against vulnerable groups including women, children of working age and people with disability
xxi. Forced labour and child labour
xxii. Conflicts, crime and violence

2.0 General Guidance for Infrastructure Projects

Appropriate sanitation systems must be designed and installed and disposal systems must be functioning. It must also be determined if there is a need to provide environmental awareness training for users[7]. Sanitary facilities must meet the following requirements:

(i) Sanitary facilities must be suitable to the local and ground conditions.

(ii) Sanitary facilities must be provided in sufficient numbers

(iii) In order to avoid surface water contamination, when public facilities for sewage treatment are not provided, effluent should not be discharged into surface waters without adequate treatment: to avoid ground water contamination, effluent must be treated in a septic tank (minimum efficiency

[7] Awareness by users of sanitary systems is required whenever new systems are installed which are different from the ones they
are used to. This is particularly needed when flushing toilets are introduced to new users. In many cases it has been reported that flush toilets were used to grow plants because new users did not get accustomed to using them.

of 70% reduction of BOD); the absorption tank is not efficient in preventing groundwater contamination.

(iv) The site where the sanitary facility is to be installed must have a low water table.

(v) If sanitary facilities use alternative technologies such as Ventilated Improved Pits (VIP) latrines and others, it must be located at least 15 meters from existing buildings and houses, in the opposite direction of the prevailing winds, to prevent odor and undesirable impacts.

(vi) When an external latrine vent pipe exists, it must be located at the sunny side of the latrine and painted black, to produce an updraft, due to the heating of the air inside the vent: an external cover at the top of the vent pipe will prevent flies and mosquitoes from coming out the vent and therefore will reduce the risk of contamination.

(vii) All required approval and permits must be obtained and the relevant agencies (NWC, NEPA etc.) informed and involved in the development of the project

Adequate water supply must be provided as indicated below:

(i) Adequate structures for water storage must be provided.

(ii) Rainwater can be collected, stored and used for sanitary facilities.

(iii) The storage structure must be located (about 25 meters) from, the absorption tank, septic tank or other similar facility, and upstream the direction of the water table flow[8].

The land on which a building is to be located must comply with the zoning requirements of the National Environmental Planning Agency and relevant planning legislation. It must also be well drained, aesthetically landscaped and secure, especially if very small children are involved. All relevant permits and no objections from relevant agencies must be obtained.

[8] If the storage facility is underground it can be contaminated by groundwater contaminated with effluent or by effluent directly, in case an absorption tank is located nearby.

(i) In rehabilitation projects, when an existing building does not comply with the guideline above, the JSIF shall not approve the project.

(ii) Rehabilitation must, whenever possible include drainage, security and landscape of the area as well as the building itself and testing for hazardous materials such as asbestos and lead; and

(iii) In rehabilitation projects, when an existing building is located on unsuitable land, the JSIF shall not approve the project. The following are considered to be unsuitable lands:

i. land resulted from fill up with any refuse matter that is contaminated by human or animal excreta or any other hazardous material;

ii. wetlands and flood plains;

iii. Protected Areas where approval has not been obtained

iv. Steep (more than 30% declivity) and unstable slopes susceptible to slippage.

Any road rehabilitation project must comply with the minimum technical standards of the relevant Local Authority to which the road will be handed over to and required no objections obtained.

In rehabilitation/expansion or construction projects the technical and financial feasibility of using traditional architecture and simple technologies and materials must be assessed, and simple, traditional style and materials adopted when suitable. A comparative assessment of environmentally friendly materials and techniques should also be adopted where suitable, based on comparisons of techniques and long-term cost-benefit analysis. This applies to any building, road, water and sanitation projects.

All buildings should be well designed to provide security and at the same time to be attractive and well ventilated and make best use of natural lighting.

Adequate space and facilities for recreation inside and outside of a building must be designed accordingly and whenever possible, budget for its construction must be ensured in the project.

Solid Waste must be managed in a sustainable and responsible manner with a view to minimized environmental impacts.

i. Solid waste must be collected and disposed of in an appropriate manner and on a regular basis, according to the JSIF's Operation and Maintenance Manual for infrastructure projects.
ii. Waste must be stored in a covered garbage storage unit, designed in accordance to current NEPA or NSWMA guidelines and protected from the access by animals.
iii. The JSIF will develop a waste management manual and provide the sponsor community as part of the Operation and Maintenance Manual. This manual will include self-sustained waste management plans that include alternative solutions for adequate disposal of organic waste and garbage, and potential uses for recycled materials, waste collection campaigns and other environmental awareness activities to be developed with the students and the community[9].

Projects must be implemented to minimize or mitigate against natural and manmade hazards.

I. **Fire Control:** Safety precautions against fire must be assessed, implemented, documented and functional at all times and water supply for fire hoses must be secured. Note that:

    a. Evacuation and fire extinguishing procedures must be approved by the fire department or a similar institution.

    b. Fire disaster preparedness should be addressed in organizational strengthening exercises and in maintenance training.

II. **Natural disaster mitigation:** The design of all infrastructure projects must accommodate the potential occurrence of a natural disaster and climate change scenarios and as such should include the necessary mitigation measures to ensure minimum impacts from these events. This includes but not exclusive to:

[9] Burning or, covering with earth are common practice for waste disposal in rural areas. The appropriate alternative will be provided in the JSIF
Operation and Maintenance Manual.

a. Earthquake mitigation: Designs must uphold the minimum building standards recommended for Jamaica as indicated by the Building Code.

b. Storm mitigation: This includes heavy rain, storm surges, tropical storms, hurricanes mitigation measures for strong winds and high levels of precipitation and runoff. Road and building designs must therefore have adequate drainage measures and buildings and other structures must maintain the minimum standards under the Building Code for wind resistance.

c. Drought: The design of applicable sub-projects should include measures such as rainwater harvesting systems, water efficiency and conservation features, water storage equipment and drip irrigation system to mitigate against drought conditions. Drought and disease resistant crop species should also be cultivated to mitigate against the impact of climate change.

III. Safety: Care must be taken to ensure that designs promote a safe work site and safe operation of the facility. The following must be considered:

a. Materials: No toxic paints or construction materials (e.g., lead-based paints, amianthus, and asbestos) may be used within the buildings or on water supply projects.

b. Site Safety: Designs must factor in terrain and other potential areas of danger that my lead to an unsafe work site. Where there is potential for danger on a site, cautions and recommendations for safe implementation must be outlined.

3.0 Specific Guidelines by Project Sub-type

1. All Project Sub-types assume the General Guidelines in addition to the type-specific guidelines listed below and the procedure required during each stage of the Project Cycle as outlined in Section 4.0.

   Maintenance training must be provided for select project beneficiaries (Maintenance Committee) to ensure care of the structure and avoidance of physical danger due to deterioration or lack of maintenance, particularly in the case of agro-processing facilities, sanitation systems, tourism enterprises, cold storage structures, water supplies roads, small bridges and other infrastructure.

A. ROADS

Design Phase

1. Roads must be designed and constructed so that they do not impede the free flow of intervening water ways:

(i) At design phase, the grade of road must be established above the level of the existing drains.

(ii) In case the existing road crosses a waterway, the design for rehabilitation must include culverts to allow the free flow of water.

(iii) Size of culverts and drains must be designed to accommodate a 30-year storm event or as per new Building Code standard.

2. Capped and uncapped roads must be designed and constructed so that water does not stand over long periods either on the road (in surface depressions) or at the sides or base.

(i) In case the size of the existing drains is not sufficient to ensure free water flow of a 30 year storm event, their enlargement must be included in the rehabilitation design;

(ii) If existing drains are blocked by vegetation or silt, clearing must be included in the rehabilitation project.

3. Bridges design must include re-vegetation of shoulders using native vegetation to reduce erosion and any necessary river training to protect the bridge.

4. The shoulder declivity must be designed according to the soil characteristics.

Construction Phase

5. Construction works must comply with the JSIF's General Environmental Guidelines and implemented using JSIF's Environmental Handbook for Construction Supervision and monitoring and must ensure the following:

(i) Defined grades must be correctly set in place

(ii) No depressions must be left in the surface of the road.

(iii) Drains must be unblocked and correctly sized, as in the project design.

6. Erosion control measures must be implemented accordingly to project design:

(i) Exposed road shoulders must be vegetated early with native species, appropriate to the site to reduce the impact of raindrop erosion.

(ii) Erosion (silt/sediment) barriers must be in place and functional throughout construction.

7. There must be a satisfactory system of regular collection and disposal of waste and garbage; during construction works the contractor must ensure that:

(i) Materials are stored in such a way that will not be carried by rains and/or run-off waters into the drains

(ii) Garbage and construction wastes are collected and disposed in appropriate sites in a way that ensure that they will not be carried into the drains or discharged into wetlands or in sensitive vegetation communities;

(iii) Measures are implemented to avoid spills of lubricants, fuels and other chemicals, and in the event of an accidental spill, clean-up is clone immediately

(iv) After construction works are concluded the contractor must clear the area from all equipment, machines and wastes (liquids or solid)

(v) Whenever the sponsoring community does not provide an adequate site for waste disposal, the contractor shall follow the guidelines JSIF' will develop for waste disposal

Operation and Maintenance

8. Operations and Maintenance should follow JSIF's Operational and Maintenance Manual for Infrastructure Projects. Particular attention needs to be paid to:

i. Erosion control
ii. Drainage
iii. Clearing and mitigating against land-slippage (within the capabilities of the community e.g. minor retaining walls, major works are the responsibility of the relevant authority.

B. SANITARY FACILITIES (LATRINES)

Site Selection and Project Design

1. Pit 1atrines should be avoided due to (i) odour and insect (flies and mosquitoes) problems; (ii) risks of contamination by pathogens (virus, protozoa and helminths) transmitted by excreta; (iii) risk of small children falling into pits; (iv) where the water table is high
2. Pit latrines with adequately designed septic tanks and absorption pits are recommended when there is (i) inadequate water supply to support water closets (ii) where soil absorption rates ensure proper and safe diffusion of waste water (iii) where there is no potential for contamination of ground water supplies.
3. Other alternative sanitation technologies, such as ventilated improved latrines (VIP latrines), should be considered appropriate only when flushing toilets are not technically and economically feasible.
4. The sanitary facility must be installed at sites that:
    i. Has a low water table
    ii. Is located downstream.

Construction Phase

5. Construction works must comply with the JSIF's General Environmental Guidelines and JSIF's Environmental Handbook for Construction Supervision and monitoring.

I. Dust and noise during construction works should be minimized:

(i) In residential areas, if works are conducted in the dry season, the contractor must wet the exposed area with water and construction materials either stored or transported must be covered to avoid particulate matter to be blown by the wind.

(ii) Communities must be given adequate notice of intended construction and potential for dust and blockage of access to roads or community facilities during construction.

(iii) When sand is used to fill in land or to level a site it must be capped with clay turf, whenever possible. If this solution is not viable, spraying the area with water can minimize dust blown by the wind.

(iv) Construction work must be limited to daylight hours, from approximately 8:00 am to 6:00 pm, or according to local or specific regulations.

(v) Blasting to break up rocks will be conducted during daylight and residents will be advised when blasting will occur. The local regulatory authority should certify the person conducting this activity.

II. Adequate measures for preventing siltation of watercourses by run-off must be implemented, such as silt screens and straw devices, among others.

III. Safety measures must be taken to prevent accidents involving workers and members of the community.

IV. Clearing of trees and other vegetation must be minimal.

V. All waste must be disposed of in environmentally sound ways and at dumpsites approved by the relevant Parks and Markets Authority.

VI. All sewage disposal facilities are required to be adequate and fully functional and the end of construction.

VII. Penalties are to be instituted for breach of guidelines mandated by JSIF.

Operation and Maintenance

1. Operation & maintenance must comply with the General guidelines presented as well as with JSIF's Manual for Operation and Maintenance of Infrastructure Projects.

2. Environmental awareness and maintenance training to users will be provided on all sanitation projects.

3. Latrine pits, absorption tanks or septic tanks must be cleaned regularly, according to JSIF's Operation and Maintenance Manual for infrastructure project. Where technologies such as bio-digesters or composting toilets are being used, specific training must take place to ensure on-going functioning of these systems.

C. SANITARY FACILITIES (COMMUNITY SHOWERS)

Site selection and project design

I. Before the sanitary facility is designed it must be ensured that the site where it is to be installed is located downstream any water body source.

II. Community showers must be located at least 15 meters from existing buildings and houses.

III. The community shower must be installed inside a well-ventilated and well-drained super structure.

IV. The area surrounding the superstructure must be adequately landscaped, secure and well drained.

V. The size and number of showers must comply with JSIF's design guidelines

Construction Phase

1. Construction works must comply with the JSIF's General Environmental Guidelines and JSIF's Environmental Handbook for Construction supervision and Monitoring.

Operation and Maintenance

1. Operations and Maintenance should follow JSIF's Operational and Maintenance Manual for Infrastructure Projects. Particular attention needs to be paid to:
    a. Maintenance of plumbing and water supply
    b. Cleanliness of facility
    c. Maintenance of security measures

D. DRAINAGE

Project Design

1. Project design must follow the general guidelines as well as the specified procedures outlines for appraisal of projects in Section 4.0.

Construction Phase

1. Construction works must comply with the JSIF's General Environmental Guidelines and JSIF's Environmental Handbook for Construction Supervision and Monitoring.

2. Vegetation and silt materials recovered from dredging must be securely, disposed, in order to avoid being brought back to canals and drains, by runoff and rains.

3. During dredging, unauthorized persons must be prevented from approaching working areas by the installation of protecting devices, in order to avoid or minimize risks of accidents involving the community.

E. WATER PROJECTS

1. It must be verified that requirements for protecting the water source from contamination are adopted.

2. The delivery of safe potable water must be ensured: materials used in the pipeline must ensure that no leaks will threaten the delivery of safe potable water.

3. Site selection and protect design

4. Crater source must be located upstream any possible source of crater pollution and protected from contamination by a superstructure.

5. Project Application must require physical and bacteriological analysis of the water from the water source, which is intended to be used.

6. In case the water is not adequate for human consumption, the JSIF must consider not financing the project.

II. ***Construction phase***

1. Excavation works must be made whenever possible during the dry season, to avoid erosion and siltation of drainage canals or other water bodies in the area.

2. During construction works, unauthorized persons must be prevented from approaching working areas by the installation of protecting devices, in order to avoid or minimize risks of accidents involving the community.

III. Operation and Maintenance

1. All infra and superstructure must be permanently maintained in adequate operating conditions.

2. Water source and water pipes must be continuously monitored to ensure that no contamination has occurred.

F. AGRO-PROCESSING FACILITIES

1. Waste products must not be deposited in watercourses, wetlands, sensitive ecosystems or critical habitats.

2. Waste Crater and processing effluent must be treated to reduce contaminants and not be discharged directly to water bodies, wetlands, sensitive ecosystems or critical habitats.

3. The necessary permits must be obtained to construct, and license obtained to operate these facilities.

APPENDIX 2 – MANAGING SIGNIFICANT ENVIRONMENTAL ASPECTS

The scope of the JSIF's EMS includes both administrative and operational activities. Operational refers to sub-project activities and these are a function of the scope of the funding received from each source. Administrative activities are those associated with the in-office administration of projects. Both categories of activities can interact with the environment resulting in environmental impacts or effects. The JSIF therefore developed a mechanism to identify and determine its significant environmental aspects (SEA) and establish controls to manage them adequately. Having generated the list of activities in which JSIF is involved and the associated aspects, the Environmental Officer coordinate with key members of staff ensure that the list is vetted for completeness. The Environmental Officer then determines the impacts associated with the aspects identified and apply appropriate scores to the different ranking elements. Aspects and impacts are assessed for releases to the environment (air, water, soil, generation of waste) and impacts on human health. The potential for these impacts are considered under normal conditions as well as emergency conditions (e.g. hurricanes, fires, spills).

Based on the assessment of JSIF's activities and the application of the scoring system, nine (9) SEAs were identified for which standard management practices and procedures are developed with a view to minimize environmental impacts. The SEAs are listed as follows:

i. Generation and disposal of solid waste
ii. Unsafe conditions (Health and Safety)
iii. Disturbance of natural coastal processes
iv. Noise
v. Energy consumption
vi. Provision of potable water;
vii. Ground and surface water pollution;
viii. Release of particulates to the atmosphere (dust pollution) or to water bodies (sedimentation, turbidity, and runoff); and
ix. Introduction of foreign material and organisms into marine ecosystem

The following outlines the generic procedures adopted for the management of these SEAs based on the JSIF EMS. These may be modified from time to time based on the

particular characteristics of proposed project activities, for example dredging in coastal areas, were distinct potential impacts are present.

A. Site Assessment and Environmental Screening

Site assessment is carried out initially at the appraisal stage, when the Technical, Social and Environmental Officers (Formulator in the case of emergency projects) make an initial visit to the site with the support of the community. An initial site review will indicate whether there is a SEA or other issues which needs to be managed. JSIF Technical Officers also assess sites for suitability in accordance with among other things, JSIF EMS requirements, donor safeguard policies and applicable Laws. The Technical and Social Officers then input the project screening information in Fund Manager (complete environmental screening checklist), or uploads the information submitted by the Formulator. The environmental officer then review the document in Fund Manager for accuracy and completeness after which it is approved to enable progression through the JSIF's project cycle.

When the environmental screening is completed on Fund Manager, Environmental Screening Sheets, Management Plans (EMPs) and Monitoring Sheets are generated for integration in appraisal reports, technical reviews, bid/tender documents and contracts of the contractors and formulators.

B. Formulation

The JSIF contracts qualified consultants to design and supervise the execution of sub-projects. At this stage the formulator for the sub-project design visit the site to make a more thorough assessment of site conditions with a view to produce complete designs, drawings and costs. The formulator/consultant is required to use the screening information provided by JSIF as one of the bases to make accurate evaluation of the site as well as using personal experience and knowledge to identify any other issues that may have been overlooked by JSIF. The consultant is duty bound to incorporate suitable and appropriate mitigation measures in the sub-project design to address these identified or anticipated issues. The consultant must also ensure that the cost to fund these mitigation measures are included in the project's bills of quantity.

C. Technical Review

The consultant is required to present the preliminary drawings, BQ, recommendations and conditions associated with the project to the JSIF's technical review committee, where they are examined for completeness. Recommendations from technical reviews must be incorporated in the final design of the subproject. The reviews include an assessment of the EMPs generated from Fund Manager as well as the permits and licenses to ensure that the issues highlighted have been included both in the design and the final project costs. The consultant is required to submit applications and obtain any permit required for the implementation of the project. He/she is also responsible for providing feedbacks to the JSIF on the status of the application and whether the statutory authority requires an environmental impact assessment.

D. Procurement of Contractor

A contractor is procured through the bidding process to implement the sub-project. The project design, bill of quantities and detailed generic environmental management plan are included in the contractor's bidding documents. The preliminary section of the bill of quantities outlines the items required to provide environmental and safety mitigations at the project site. An environmental management plan (EMP) which outlines in details how works are to be conducted and the appropriate mitigation measures for the potential environmental impacts associated with project activities is included in the contract documents. This to ensure environmental sustainability or to reduce environmental impacts.

E. Project Information Meeting

Upon procuring the contractor and obtaining the necessary approvals and/or permits, the sub-project is ready for implementation. However, prior to starting implementation, a project information meeting (PIM) is conducted in the community. This meeting is usually the last community sensitization session before works commenced. The meeting includes all the relevant stakeholders such as the community residents, community leadership, Government agency representatives, design and supervision consultant(s), contractor, environmental consultant, private partners (if applicable), and JSIF.

During this meeting, the project scope, environmental and social safeguards are outlined and discussed. Records of the meetings are maintained for future reference.

F. Implementation

Implementation must be carried out by the contractor in accordance with construction and engineering standards and the requirements of the environmental management plan. The Contractors must perform works as per Specifications and Requirements Document - **PROC-I-SPECSGEN-10051999; Environmental, Health and Safety Guidelines, while the Supervisors** will ensure that these guidelines are met.

G. Monitoring and Supervision

Project monitoring will be carried out in accordance with **JSIF Monitoring and Evaluation Procedure EMS-I-PR-ME-24072008** until the project is completed**.** Projects are monitored against *inter alia*, approved designs, environmental management, good construction and engineering practices.

The JSIF established a multi-layered monitoring and supervision scheme with a view to maintain environmental compliance. The consultants are required to supervise the project during implementation to ensure that the contractor execute the project in accordance with the design, EMP and any permit or other compliance obligations. The Supervisor must ensure that the Contractor carries out the recommended environmental management measures on site to minimize environmental impacts and human health effects. The Supervisor is also responsible for ensuring that mitigation and corrective measures are taken in a timely manner.

The JSIF Technical Officer is responsible for monitoring and supervision of the consultants and the contractor to a lesser extent. Both the consultants and technical officers are required to produce site monitoring reports which are documented in the project file or in Fund Manager the JSIF's critical project management software.

The technical officers' environmental monitoring report is used to track the contractors' environmental management conformance which can be applied subsequently to make management decisions. The environmental officer, EMS internal audit team, the JSIF Internal Audit Department and the ISO external auditor also conduct random assessment of environmental performance of sub-projects.

H. Responsibilities

Technical Officer: The Technical Officer is responsible for site assessment and Environmental Screening at the Appraisal Stage; he/she is also responsible for assessing and recording Supervision Reports.

Contracting Department: Contracting ensures that the Environmental Sheet, Management Plans and Monitoring Sheets are included in bid / tender documents and contracts.

Formulator: The Formulator is responsible for environmental screening in the case of Emergency Projects as well as for developing complete designs and thereafter in his/ her capacity as Supervisor must ensure that the contractor performs in accordance with construction and engineering standards. See JSIF, Specifications and Requirements, PROC-I-MAN-SPECS-12052002.

Supervisor: This individual is contracted to monitor and ensure that all works are carried in accordance with construction and engineering standards. See JSIF, Specifications and Requirements, PROC-I-MAN-SPECS-12052002

Technical Review Committee: This group has the responsibility for ensuring that designs are reviewed for completeness and adjusted as recommended.

Environmental Officer: The EO ensures that the environmental screening process is completed. The EO also ensures that licenses and approvals are obtained, and project monitoring conducted and recorded.

APPENDIX 3: Generic/Standardized Environmental and Social Commitment Plans (EMPs) to Mitigate Adverse Impacts during Construction

Activities	Potential Impacts	Mitigation Measures	Responsibility for Mitigation	Monitoring Requirements	Responsibility for Monitoring and Supervision
Construction of New and or Rehabilitation of Existing Buildings (Agro-processing Facilities, Greenhouses, Cold Storage, Schools, Fire Stations, Police Stations and Public Buildings including provision of on-site water supply and sanitation services)					
Earthworks (Excavation, Vegetation Clearance, Trenching and Blasting)	Increase in fugitive dust levels	1. In residential areas, if works are conducted in the dry season, wet the exposed areas and stockpiles of earth materials, particularly fines, to minimize windborne particles and increase in levels of fugitive dust. 2. Haulage vehicles transporting aggregate must be covered on all public roads. 3. Communities must be given at least two weeks prior notice of intended construction period.	Contractor	Suspended particulate matter (if required respirable particulates < 10 micro grams) should be monitored as per NEPA guidelines.	Technical supervision staff, and where appropriate, with the participation of community representatives and or respective community liaison officers.

		4. For worker health and safety, all workers should be supplied with dust masks and other safety gears.		Frequency: Fortnightly for the first three months and monthly thereafter.	Spot checks by EO
	Soil erosion	5. Clear only areas designated for construction. 6. Clear small areas at a time. 7. Replant cleared areas immediately after construction has completed. 8. Install sediment controls at property boundaries, particularly in close proximity to drainage systems			
	Road closure and traffic congestion	9. Communities must be given prior notice of intended road closures and designated detours.			

Activities	Potential Impacts	Mitigation Measures	Responsibility for Mitigation	Monitoring Requirements	Responsibility for Monitoring and Supervision
		10. Install directional signs 11. Use flagmen to direct traffic			
	Improper waste disposal	12. Reuse waste onsite where applicable. 13. Store waste in a designated location. 14. Cover spoils with plastic sheeting to minimize dust and erosion. 15. Dispose of waste at a NSWMA approved disposal site.			
	Sedimentation and water pollution	16. Silt Screens or Sediment Traps should be deployed where earthworks or trenching occurs in close proximity or adjacent to gullies, drainage lines or rivers to avoid deterioration of water quality. 17. Compensate for trees removed by planting new trees.			
	Felling of trees				

		18. Significant efforts should be made to preserve large trees and those of high economic value.			
	Loss of or damage to Historical and Cultural Artifacts	1. The contractor must ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted and registered, the National Heritage Trust contacted, and work activities delayed or modified to account for such finds. 2. No item believed to be an artifact must be removed or disturbed by any of the workers. 3. Consultation with local community regarding final design of historical structures will be done as prudent.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**

Movement of heavy machinery, blasting and drilling.	Soil and water pollution from petroleum products.	1. Ensure that machinery and motor vehicles are adequately serviced and not leaking oil. 2. Where oil is leaking, the following procedures must be followed: • Stop the leak immediately • Remove the equipment from the site for repairs • Excavate impact soil until no trace of petroleum is observed (wear PPEs). • A soil test should be conducted depending on the severity of the spill. • Place contaminated material in a water proof container. • Decontaminate equipment. • Seal and label the container. • Take the material to an approved site for disposal. • Obtain proof of disposal. 3. Store petrol in a safe location surround by an embankment or berm.	Contractor	Noise level should be monitored as per NEPA guidelines.	Technical supervision staff, and where appropriate, with the participation of community representatives and or respective community liaison officers. Spot checks by EO

		4. Storage for hazardous materials including petroleum should be above ground and isolated. 5. Storage of fuels on site should be compliant with petroleum industry guidelines and fire precautions put in place. 6. Stage concrete mixers on impermeable liner with absorbent material.			
	Wildlife disturbance or displacement.	6. Control noise level when operating in wildlife habitats by turning off equipment when not in use. 7. Workers should be trained to ensure the protection of fauna, particularly rare, endangered or protected species. 8. Do not harm wildlife when moving machinery.			

	Injury to workers and visitors to project site.	9. All workers and visitors should wear safety gears when entering the site. 10. Only authorized persons should be allowed onsite. 11. Install hoarding around construction sites if possible. 12. Proper accident reporting and emergency procedures should be implemented onsite. 13. Report any incident or accident.			
	Increase in noise levels.	1. Construction work must be carried out from 8:00 am to 6:00 pm or according to local regulations. The community must be notified and agreed on works outside of this period.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and**

					Supervision
		2. No works are to be done on Sundays and Public Holidays, and works done outside of this period will require permission. 3. Conduct quantitative noise level test to determine compliance with standards 4. Wear ear protection if noise level is above recommended standards 5. Regular breaks should be taken when conducting noisy activities to reduce stress levels. 6. Blasting should be conducted during daylight and residents should be advised in advance when blasting will occur. 7. Blasting should only be conducted by a certified contractor and all safety			

	requirements, including deployment of blasting mats; inspection of buildings within the designated blasting radius, before and after blasting; contracting local police or security to supervise and control the movement of the public; and provision of earmuffs to workers must be strictly followed.			
Involuntary resettlement	1. Avoid resettlement by changing project design 2. Conduct timely consultations with project affected persons 3. Provide appropriate compensation to project affected persons 4. (See JSIF's Resettlement Policy Framework)	JSIF Social Officer	Done during project appraisal as per ESS5.	Social and Technical Officers

	Exposure of community to health and safety risks	1. Notify community in advance of health and safety risks 2. Install safety signs and protective barriers at hazardous locations 3. Restrict access to site by unauthorized persons 4. Create alternative routes where necessary and practicable 5. Control noise, dust and other forms of air pollution to acceptable level	External supervisor or consultant.	Done daily as per NEPA guideline.	External supervisor or consultant. Technical Officer
	Crime and violence outbreak	1. Conduct community consultations prior to project implementation 2. Conduct project information meeting 3. Develop open communication with stakeholders 4. Implement project in a transparent and non-discriminatory manner 5. Workers sign code of ethics 6. Address community concerns in a timely manner	Social and technical Officers and contractor		Consultant and Social Officer

Generation of construction rubbles from refurbishing or upgrading of buildings	Drain blocks and unsafe conditions by indiscriminate disposal of rubbles. Dust pollution from improper storage of spoils.	1. All waste must be disposed in an approved landfill or disposal site, in consultation with the National Solid Waste Management Authority (NSWMA). 2. Waste should be removed from the site within one week of generation where practicable and feasible. 3. Use covered trucks to transport waste. 4. Stored waste should be covered with plastic sheeting or other suitable material to minimize dust dispersion. 5. Waste containers including bins for recyclables should be provided at project sites for storage of garbage.	Contractor	Confirmation on disposal of solid waste at an approved site to be monitored fortnightly.	Technical supervision staff, and where appropriate, with the participation of community representatives

	Loss of property from flooding	6. Reuse waste onsite where practicable.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
Workers Sanitation	Water pollution from unmanaged sewage waste. Unsanitary condition and disease outbreak	1. Contractor to make suitable arrangements for the provision of sanitary facilities and potable water for workers. 2. Remote worksites must be equipped with portable chemical toilets, which must be supplied and serviced by an approved contractor.	Contractor	Check that the necessary arrangements have been made by contractors. Confirmation that portable toilets are	Technical supervision staff and where appropriate, community representatives and or respective community liaison officers.

	due to lack of potable water.	3. Toiletries must be provided for use by workers.		supplied on site.	
Other construction activities such as: transportation of material, collection of waste, road improvement works, trenching, pipe-laying etc.	Traffic congestion and hindrance of pedestrian movement	1. The traffic management plan should be developed in consultation with the NWA and other applicable authorities. 2. Flagmen must be employed to direct traffic and reduce the occurrence of accidents. 3. Flagmen must be trained and wearing the appropriate safety gears during project implementation. 4. Road safety signs must be installed. 5. Material delivery must be confined to early mornings/late evenings (outside of peak periods) 6. Communities must be advised of intended road closures and designated detours.	Contractor	Traffic congestion and number of accidents. Fortnightly.	Community representatives/ respective community liaison officers

		Stockpiles and excavated material must be deposited in areas agreed on with the community so as not to interfere with local activities.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
Installation of temporary scaffolding supports for beams and slabs	Cutting of trees in the vicinity of site. Fall injury from poorly constructed scaffolding.	1. No live trees shall be cut. 2. Steel or lumber supports for scaffolding must be obtained from an approved supplier. 3. Scaffold should be installed by professional and tested frequently throughout the project life. 4. Scaffolding should be checked immediately after a hazardous event, e.g. storm or earthquake.	Contractor	During and after installation. Weekly afterwards.	Technical supervision staff, assisted by community representatives

Installation of water and toilet fixtures	Water wastage and damage to equipment	1. Install water-efficient plumbing fixtures. Use institutional/ commercial strength fixtures and equipment in all public facilities 2. Fix all leaks 3. Turn off water faucets when not in use.	Contractor (based on spec's by JSIF)	Before and after installation on site	Technical supervision staff Spot checks by EO
Construction of sanitation system including septic tank, gravel beds, reed bed or tile field and absorption or soak-away pits.	Trip and fall from height	1. Mark the perimeter of all excavated pits with caution tape. 2. Notify workers and visitors to the site of hazards. 3. Cover pits if possible when not in use.	Contractor	Continual assessment throughout implementation	Technical supervision staff Spot checks by EO
	Contamination of ground water	1. Use clean equipment to excavate pit especially there is a risk of coming in contact with groundwater. 2. Do not dump any contaminated materials or substance in the pits.			

		3. Remove excavated material from the site immediately. 4. Cover excavated soil to prevent erosion or wind dispersal. 5. Prevent spoils from entering drainage systems.			
	Improper Waste management	1. Re-use project generated spoils onsite if possible. 2. Dispose of waste at NSWMA approved site. 3. Store waste in a designated location with proper covering. 4. Provide waste bins onsite for workers 5. Bag garbage waste for disposal			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and**

					Supervision
	Removal of vegetation and trees	1. Re-vegetate cleared area immediately after construction. 2. Avoid cutting down trees 3. Obtain permit from designated authority if trees have to be removed 4. Replace each tree removed during construction with three (3) seedlings of native trees. 5. Trees should be removed only when present a health and safety risk or risk of damage to infrastructure 6. Consult with NEPA prior to removing any tree 7. Use silt traps to retain soil.			
	Cave-ins	1. Excavate pits with walls angled instead of square. 2. Install a ladder in pits that are four feet in depth or greater. 3. Reinforce pit walls if unstable.			

Asbestos Removal	Human exposure and adverse health effects	1. If asbestos is detected during rehabilitation of buildings, it shall be marked clearly as a hazardous material. 2. All works must be stopped immediately. 3. The asbestos must be properly secured by the contractor to prevent exposure. 4. An asbestos management plan must be prepared by the contractor and approved by the relevant local authorities including NEPA, Ministry of Health and NSWMA. 5. The asbestos will be treated with a wetting agent to minimize asbestos dust prior to removal. 6. The abatement team must be comprised of skilled professionals with the expertise and equipment requirement for handling and removal of asbestos. PPEs should at least include respirators and tyvec suites.	Contractor	Ensure that area is fully secured and that the waste is not removed	Ministry of Health, NEPA and NSWMA.

		7. If asbestos material is to be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately.		from the site without proper approvals.	

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
		8. Security measures must be implemented against unauthorized removal of asbestos from the site. 9. The waste should be buried in the appropriate containment at an approved site under the supervision of the NSWMA.			

	iv. Prostitution v. Sexual harassment vi. Discrimination against vulnerable groups including	1. Ensure all workers sign code of conduct. 2. Consult monitor the site regularly for illicit activities. 3. Provide training for project workers. 4. Install no trespassing signs. 5. Ensure applicable projects sites are properly hoarded. 6. JSIF track gender of workers employed by the contractor.			

	women, children of working age and people with disability vii. Forced labour and child labour	7. JSIF verify age of workers suspected to be under working age.			
Construction of New and/or Rehabilitation of Bridges					
Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
River training	Freshwater and marine pollution	1. Obtain necessary permit from NEPA. 2. Qualified professionals contracted to design and implement project. 3. Sediments and other project generated waste must be	Contractor	Weekly	Technical supervision staff

		adequately contained and removed from the site as early as possible. 4. The contractor should avoid contact between waste and flowing water. 5. Waste should be disposed of at approved NSWMA disposal sites. 6. The contractor will install appropriate erosion and sediment control measures e.g. silt fences and traps to minimize offsite movement of sediments into streams and rivers, and other coastal aquatic ecosystems. 7. Portable toilets will be provided for workers to prevent improper disposal of human waste.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**

	Disturbance of fish and aquatic wildlife.	1. Noise will be restricted in areas with sensitive wildlife. 2. The contractor will be required to preserve trees and other wildlife habitats, which have been identified as natural habitat or well preserved vegetation zones. 3. The control of sediment deposition into the aquatic system to prevent chemical and physical changes will be required of the contractor.		Weekly	
	Occupational safety issues	1. Workers will be required to wear safety gears at all times. 2. The contractor will be response for ensuring that unauthorized activities such as swimming are not carried out during work hours. 3. Road safety signs will be installed during work hours.		Daily	

		4. Contractor will ensure that trucks transporting materials are not overloaded.			
Excavation and earth works	Air pollution from increase fugitive dust in ambient air.	1. Wet dry areas on a regular basis. 2. Cover spoils with plastic or other materials to minimize dust emission. 3. Remove spoils from the site as early as possible. 4. Conduct quantitative dust monitoring. 5. Workers should wear dust mask when dust becomes a nuisance. 6. Dust monitoring should be conducted as per NEPA requirement.	Contractor	Periodic, i.e. weekly	Technical supervision staff, Community representatives/ respective community liaison officers, with spot checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for**

					Monitoring and Supervision
	Traffic congestion and hindrance of pedestrian movement	1. Inform the community at least two weeks in advance of the works and discuss alternative route(s). 2. Install road directional signs 3. Store materials and waste to avoid hindrance to traffic and pedestrian movement. 4. Complete works in a timely manner. 5. Use flagmen to direct traffic	Contractor	Daily	Contractor with support from the Technical supervision staff, Community representatives/ respective community liaison officers, with spot checks by EO
	Inappropriate waste disposal	1. Re-use project generated spoils onsite if possible. 2. Store waste and designated location with proper covering. 3. Dispose of waste at NSWMA approved site. 4. Provide waste bins for storage of garbage.	Contractor	Continual assessment throughout implementation	Technical supervision staff Spot checks by EO

	Occupational safety issues	1. The contractor must develop and health and safety plan for the project site. 2. Contractor and site supervisor must conduct daily health and safety meeting prior to starting of work activities. 3. Emergency contact information should be posted onsite. 4. The contractor must provide workers with the appropriate safety equipment including hardhats, safety boots, security vest, dust mask, and gloves and ensure that they are worn properly. 5. The site supervisor and the contractor should ensure that Occupational Health and Safety regulations are enforced. 6. Sanitary facilities and portable water must be provided by the contractor for all workers on site.	Contractor	Continual assessment throughout implementation	Technical supervision staff Spot checks by EO

Activities	Potential Impacts	Mitigation Measures	Responsibility for Mitigation	Monitoring Requirements	Responsibility for Monitoring and Supervision
		7. At least one safety kit should be provided onsite in an accessible location. All workers should be apprised of the route to the nearest medical facility in case of an accident or illness. 8. Road safety signs must be installed when work is in progress. 9. Excavation safety should be addressed in a separate procedure or plan where more than 4 feet of material is removed or where overhanging slope are present.			

Traffic Control	Motor vehicle congestion and accidents	1. Inform the community at least two weeks in advance of the works and outline alternative route(s). 2. Install signs to indicate that works are in progress, visible at night or in poor weather. 3. Contractor must provide flagmen to direct traffic. 4. If necessary, works can be conducted at night time when the traffic on the road is at a minimum, provided adequate safety signage and visible warnings are in place. 5. If practicable and feasible, the contractor should setup alternative traffic bypass. 6. Complete works in a timely manner.	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO
Transportation of materials and waste	Air pollution from fugitive	1. Contractor should ensure that s material and waste are covered during transportation. Trucks 2.	Contractor	Daily	Technical supervision

	dust; and material spillage	drivers should comply with traffic speeding limits.			staff assisted by the community representatives Spot checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
Construction of New and or Rehabilitation of Existing Drainage Systems					
Drain excavation	Pollution or siltation of rivers and coastal waters from excavated material	1. Dispose of contaminated and unsuitable material in safe areas and cart away for off-site disposal at approved landfill site. 2. Use sediment traps and silt fences to contain excavated materials. 3. Remove silt from the site immediately	Contractor	Frequent, during critical flooding periods	Technical supervision staff assisted by the community representatives Spot checks by EO

	Flooding from inadequate or blocked drains	1. Use good design; do not block drains, clear blocked drains. Use sump pumps, especially during rains.	Contractor	Contractor, using good design	Technical supervision staff assisted by the community representatives Spot checks by EO
	Erosion of drains and siltation	1. Use concrete or masonry-lined drains, or cover drain sides with stones (riprap), or use vegetative cover. 2. Excavation safety should be addressed separately where more than 4 feet of material will be removed	Contractor	Contractor, using good design	Technical supervision staff assisted by the community representatives Spot checks by EO

	Human exposure to pathogens	1. All workers must wear the appropriate protective gears when performing drainage works. 2. Mosquito repellent shall be provided to workers as vector control. Bleach solution shall be sprayed on materials suspected of containing septic waste. 3. Workers must be provided with soap, hand sanitizers and potable water to wash hands and body when necessary. 4. Workers should be taken to the doctor immediately if show signs of health impact. 5. Contaminated protective gears should be discarded.	Contractor	Contractor	Technical supervision staff assisted by the community representatives Spot checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for** **Monitoring and**

					Supervision
		1. Workers shall be encouraged to wash hands before eating and smoking. 2. Any worker that comes in contact with the drain water will be required to clean up immediately. 3. Workers that show signs of illness shall be taken to a medical facility immediately.			
	Inappropriate waste disposal	1. Same as indicated previously. However, contaminated spoils should be removed from the site immediately.	Contractor	Contractor	Technical supervision staff assisted by the community representatives Spot checks by EO

Movement of heavy machinery and equipment onsite	Dust, noise and physical injury.	1. Same as indicated previously.	Contractor	Daily Contractor	Technical supervision staff assisted by the community representatives Spot checks by EO
Traffic Control	Traffic congestion and disturbance of residents' movement pattern.	1. Same as indicated previously.	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO
Transportation and delivery of materials and removal	Air pollution from fugitive dust	1. 1. Cover the waste and material during transportation. 2. Truck drivers shall comply with speed limits.	Contractor	Daily	Technical supervision staff assisted by the community

of waste from site					representatives Spot checks by EO
	Material spillage resulting in	1. Truck drivers shall comply with speed limits. 2. Truck drivers should comply with truck's laden weight.	Contractor	Daily	Technical supervision staff assisted by the

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
	contamination, traffic accidents and injury	1. All spills shall be reported and cleaned up immediately. • Wear protective gears • Erect traffic safety sign • Contain the spill • Use appropriate equipment to cleanup waste			community representatives Spot checks by EO

		• Place waste into seal container • Label container • Wash the impacted area • Dispose of the waste at an approved site			
Construction of Coastal Defenses					
Design of coastal works	Erosion or flooding of nearby areas	1. Depending on the scope and location of the project, the coastal works may require an EIA with feasibility assessment and comprehensive design evaluation of site and nearby areas with coastal process study for wave, sediment, and other effects.	Engineering Firm	Upon acceptance of design	Approval by JSIF technical review and NEPA permit
	Additional requirements	1. The EIA may include additional specific requirements that shall form part of the EMP	Contractor	Varies	Varies

Transportation of materials including large boulders		1. Truck drivers shall comply with speed limits. Boulders should be transported in accordance with the National Transport Authority guidelines.	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO
Traffic Control	Traffic Congestion and disturbance of residents' movement	1. The contractor must develop a traffic management plan in consultation with the NWA, National Transport Authority and the police. 2. The residents must be informed at least two weeks in advance of any extended road closures or disturbance to traffic movement. 3. The contractor must notify the public of any alternative to their normal routes during the construction activities. 4. Flagmen should be trained and wearing appropriate safety	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO

		gears during project implementation.			

Activities	Potential Impacts	Mitigation Measures	Responsibility for Mitigation	Monitoring Requirements	Responsibility for Monitoring and Supervision
		5. The contractor install warning signs, barriers and traffic diversions must be clearly visible and the public warned of all potential hazards, visible at night and in poor weather. 6. Provision must be made for the safe passages and crossings for all pedestrians where			

		construction traffic interferes with their normal route. 7. There must be active traffic management by trained and visible staff at the site or along roadways as required to ensure safe and convenient passage for the vehicular and pedestrian public. 8. Adjustment of working hours to facilitate local traffic patterns, e.g. avoiding major work activities during rush hours and do tEMPorary road closures at night.			
Excavation and earthworks	Marine pollution, disturbance of aquatic habitats and killing of marine species	1. A permit must be obtained from NEPA prior to execution of any works. 2. Destruction or clearing of mangroves or sensitive coastal habitat, or work directly affecting reefs or sensitive	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot

		marine habitat, must be avoided. 3. The contractor must implement proper erosion control measures prior to excavation and earthworks, for example, sediment traps and silt fences in coastal areas. 4. Onshore dredge spoils must be placed and			checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**

		stored in such a way as to prevent runoff from entering water bodies. 5. Offshore dredging must have a plan in place to monitor currents and turbidity, and to minimize sediment dispersion in water (silt curtains, etc.). 6. The contractor must ensure that all machines and equipment are in good working order to avoid leakage of petroleum products into the soil and water. 7. Excavated materials and any other waste must be stored adequately with proper covering and perimeter fencing prior to removal from the site. 8. The contractor must remove waste from the site immediately or within one week where feasible. 9. The contractor must store construction materials, including any potential pollutants e.g. petroleum in a designated safe area.			

		10. Hazardous material storage must be isolated and above ground. 11. Storage of fuels on site should be compliant with petroleum industry guidelines and fire precautions put in place. 12. An oil spill contingency plan should be developed to manage potential discharge of petroleum. 13. Refueling and servicing areas are to be located on impermeable areas served by an oil trap and run-off collection facilities.			

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and**

					Supervision
		14. Workshops and equipment storage areas should be drained such that all surface water run off passes through an oil separator prior to discharge into water courses 15. Water quality monitoring should be conducted in accordance with permitting requirements if necessary.			
Cleaning and servicing of vehicles	Marine pollution	1. The contractor shall wash vehicles and equipment only in a designated area where runoff to surface water can be controlled and treated if necessary.	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO

All activities	Worker safety, waste management, disturbance of fish and wildlife	Same as above	Contractor	Daily	Technical supervision staff assisted by the community representatives Spot checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
Operation of Greenhouses and Traditional Crop Enterprises					
Pesticide Application	Pollution of soil, surface water and groundwater	1. Apply integrated pest management approaches to control pests. 2. Use pesticides as a last resort. 3. Purchase pesticides approved by World Bank 4. Provide suitable storage for pesticides	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives S pot checks by EO

		5. Train farmers how to properly apply pesticides 6. Follow manufacturers' specifications 7. Use functional pesticide applicators or equipment 8. Do not store pesticides in leaky containers 9. Clean-up pesticide spills immediately and dispose of contaminated material according to manufacturers' guidelines			
	Human health effects	1. Wear suitable protective gears 2. Do not eat drink or smoke while during and immediately after spraying pesticides 3. Do not store pesticides in food container or drinks container 4. Do not store water or food in pesticide container	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO

		5. Do not consume crops immediately after spraying 6. Wash hands and take a shower immediately after applying pesticides 7. Do not wash pesticide contaminated clothes with other clothes 8. Do not take home pesticide containers 9. Train farmers in pesticide use			
	Killing of fish and wildlife	1. Do not dump pesticides in or near surface water bodies e.g. river, streams, lakes or wetlands etc. 2. Do not wash clothes or spray equipment in surface water 3. Do not spray pesticides before, during or after heavy rains	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO

	Erosion	4. Spray herbicides only in areas where necessary 5. Install erosion control measures including mulching 6. Add organic material to the soil to improve nutrient content and structure 7. Replant cleared area with crops as quickly as possible.	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the Community representatives Spot checks by EO
Fertilizer Application	Pollution of surface and groundwater	1. Provide suitable storage for fertilizers 2. Train farmers how to properly apply fertilizers 3. Apply fertilizer at the correct rate 4. Do not apply fertilizers before, during or after heavy rains 5. Clean-up fertilizer spills immediately	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO

		6. Do not dump fertilizers in surface water bodies or drains			
Irrigation	High water consumption	1. Install rainwater harvesting system 2. Provide water storage equipment 3. Install drip irrigation system 4. Install water efficient fixtures 5. Provide farmers environmental sustainability training	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO

Activities	**Potential Impacts**	**Mitigation Measures**	**Responsibility for Mitigation**	**Monitoring Requirements**	**Responsibility for Monitoring and Supervision**
Operation of Animal Rearing Facilities					

Discharge of animal waste	Pollution of surface water and groundwater	1. Install tertiary level sewage treatment system 2. Install biogas digester system to convert waste into energy 3. Harvest and compost animal waste for crop production	JSIF, Sponsors/beneficiaries	weekly	Technical supervision staff assisted by the community representatives Spot checks by EO
	Unpleasant odor	1. Clean animal rearing facility frequently with the appropriate cleaning agents 2. Wash the animals regularly 3. Install tertiary level wastewater treatment system 4. Ensure waste storage pits are sealed	JSIF, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO
	Greenhouse gas emission and air pollution	1. Install biogas digester and capture methane for onsite energy use.	JSIF	monthly	Technical supervision staff assisted by the community

					representatives Spot checks by EO
Pesticide Application	Pollution of soil, surface water and groundwater	2. Purchase approved pesticides 3. Provide suitable storage for pesticides 4. Train farmers how to properly apply pesticides 5. Follow manufacturers' specifications 6. Use functional pesticide applicators or equipment 7. Do not store pesticides in leaky containers 8. Clean-up pesticide spills immediately and dispose of contaminated material according to manufacturers' guidelines	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community representatives Spot checks by EO
		1. Wear suitable protective gears 2. Do not eat drink or smoke while during and	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community

	Human health effects	immediately after spraying pesticides 3. Do not store pesticides in food container or drinks container 4. Do not store water or food in pesticide container 5. Do not consume crops immediately after spraying 6. Wash hands and take a shower immediately after applying pesticides 7. Do not wash pesticide contaminated clothes with other clothes 8. Do not take home pesticide containers 9. Train farmers in pesticide use			representatives Spot checks by EO
	Killing of fish and wildlife	1. Do not dump pesticides in or near surface water bodies e.g. river, streams, lakes or wetlands etc.	JSIF, RADA, Sponsors/beneficiaries	Weekly	Technical supervision staff assisted by the community

		2. Do not wash clothes or spray equipment in surface water 3. Do not spray pesticides before, during or after heavy rains			representatives Spot checks by EO

APPENDIX 4 – ENVIRONMENTAL SCREENING TOOL

No: #	**ENVIRONMENTAL AND SOCIAL CRITERIA**	**Yes**	**No**	**Do Not Know**	**Risk Rating (High, Substantial, Medium, Low)**
SOCIAL ASSESSMENT					
1	Is the project area zoned for the intended land use?				
	Will the project result in a change of land use?				
2	Will the project use any vacant public land?				

3	Will the project due to its nature and location, change the existing environment in such a way that would result in the loss of farmland or change of land use?				
4	Will the project induce permanent or temporary land acquisition?				
5	Will the project result in the displacement of persons or affect the livelihood of persons negatively?				
6	Is the project located in an area with physical cultural properties such as archaeological, historical sites/monuments, religious structures, sacred groves and or cemeteries?				
7	Is the project likely to cause conflicts over water or any other resources?				
8	Will the project impact the travel patterns of persons within the community?				
9	Will the project affect a building or structure of aesthetic importance to the surrounding community?				
10	Will the project impact any buildings or structure on an adjacent property?				

11	Will the project have adverse impact on indigenous population, for example, displacement, loss of livelihoods or environmental and health hazards?				
12	Were all the necessary stakeholders consulted and did they contribute to the conceptualization and development of the project?				
13	Are potential environmental and social impacts easily mitigated or reversible?				
14	Is the project located in a disputed area?				
15	Will the project have trans-boundary environmental impact?				
16	Does the implementing agency have the capacity and experience to implement project of this type and magnitude?				
17	??				
18	Will the project cause temporary or permanent displacement of resident(s)?				

19	Does the project have the potential to cause adverse environmental or social impact on a neighboring property?				
ECOSYSTEM AND BIODIVERSITY					
20	Is the project located inside or within 1 km of a national park, a protected area, wilderness area, wetlands and or critical habitats or an area with endemic fauna or flora?				
21	Will the project result in the removal of any trees (shade and fruit etc.) or land clearing during implementation?				
22	Will the project involve any effects to the coastal or marine environments?				
23	Will the project involve dredging of water bodies or excavation of wet materials in river, wetlands or coastal areas?				
24	Will the project change the use or management of forest resources?				

25	Will the project have substantial adverse effect, either directly or through habitat modifications, on any species identified as a sensitive or endemic?				
26	Will the project have substantial adverse effect on any habitat or other sensitive natural community identified in local, regional or national policies?				
27	Will the project interfere substantially with the movement of any native, resident or migratory fish or wildlife species?				
28	Is the project located in the immediate vicinity of the coastal area?				
29	Does the project have the potential to contribute to overfishing?				
HEALTH AND SAFETY					
30	Will the project produce any unsafe physical conditions for workers such as poor sanitation, excavation, working from height and working with heavy equipment, etc.?				

31	Will the project involve hoarding (temporary fencing of project site during construction to reduce unauthorized access)?				
32	Will the project impact the travel patterns of persons within the community?				
33	Will the project cause obstruction of regular traffic flow?				
34	Will the project present a high risk of human exposure to pathogens, such as mosquito-borne or water-borne diseases?				
35	Will the project create hazardous driving conditions e.g. detours, missing bridges, lack of shoulders on roadways, heavy equipment crossings, piles of stones on roads, etc.?				

36	**CLIMATE CHANGE ADAPTATION AND MITIGATION**				
37	Does the project have the potential to impact the drainage pattern of the area?				

38	Is the project area prone to flooding?				
39	Will the project involve extraction of groundwater or surface water supplies?				
40	Will the project result in significant discharge of greenhouse gases e.g. methane (CH_4) and carbon dioxide (CO_2) to the environment?				
41	Will the project result in significant removal of greenhouse gases e.g. carbon dioxide (CO_2) and methane (CH_4) from the atmosphere?				
42	Will the project create or contribute runoff water that would exceed the capacity of existing or planned storm-water drainage systems or provide substantial additional sources of polluted runoff?				
43	Will the project because of its proposed design and operation result in excessive consumption of water?				
44	Will the project because of its design and operation, result in excessive use of energy?				
45	Is the project by virtue of its location, susceptible to extreme drought conditions?				

46	Is the project by virtue of its location, susceptible to extreme precipitation and flooding?				
47	Does project beneficiaries aware of the environmental risks associated with the project, e.g. climate change and natural disasters?				
48	Will the project involve mitigation measures to combat or resist extreme wind?				
49	Is the project likely to cause overgrazing by livestock?				
50	Does the project has the potential to impact on coral reefs and seagrass?				
SOIL AND WATER POLLUTION					
51	Is the project located in a polluted or contaminated area and/or close to a waste dump?				
52	Will the project involve the generation, storage and/or use of hazardous materials e.g. chemicals, solvents, poisonous, or explosive gases?				

53	Will the project involve sewage and/or waste water treatment solution?				
54	Does the project involve the sourcing of aggregate material e.g. sand, limestone and gravel?				
55	Will the project involve the construction or rehabilitation of a processing facility?				
56	Will the project pose a risk of contamination of aquatic or coastal ecosystems from discharge of pollutants e.g. as petroleum products, or physical damage to reefs or other sensitive ecosystems e.g. by clouding of waters by dredge spoil?				
57	Will the project involve onsite storage of pollutants such as petroleum products?				
58	Will the project require the purchase or use of pest control agents or bioactive compounds, such as pesticides, herbicides, fungicides, pharmaceuticals, or hormones?				
59	Will the project substantially degrade water quality?				

60	Will the project create significant hazard to the public or environment through the use or disposal of hazardous material?				
61	Is there a likelihood that contaminated waste water could be reused in agricultural activities?				
SOLID WASTE MANAGEMENT					
62	Will the project involve generation of non-hazardous waste?				
63	Will the project involve the generation of hazardous waste e.g. asbestos, flammables, corrosives, toxics?				
64	Is the waste generated from or by the sub-project reusable or recyclable?				
EROSION AND SLOPE STABILITY					
65	Is the project located in an area of steep slope and or susceptible to landslides or erosion of topsoil?				
66	Will project activities lead to soil erosion?				

AIR POLLUTION - DUST AND NOISE					
67	Will the project result in the release of dust to the environment?				
68	Will the project result in the production of noxious gases or odor?				
69	Will the project generate noise? If so are there sensitive noise receptors nearby (homes, schools, hospitals)?				
	General Comments:				
	Signed by Project Officer: Name: _____ Date: _____ Approved by EO: Generic EMP sufficient (Y/N): _____ Name: _____ EIA Required (Y/N): _____ Date: _____ NEPA Environmental Permit Required (Y/N): _____				

	Level of Risk: High _____ Substantial _____ Moderate _____ Low_____

APPENDIX 5: ENVIRONMENTAL AND SOCIAL MONITORING CHECKLIST

JAMAICA SOCIAL INVESTMENT FUND			
11 OXFORD ROAD (NORWOOD AVE ENTRANCE)			
KINGSTON 5			
ENVIRONMENTAL AND SOCIAL MONITORING CHECKLIST/REPORT			
COMPLETED BY:	**DATE:**		
PROJECT NAME:	**PARISH:**		
INVOLUNTARY RESETTLEMENT	**YES**	**NO**	**N/A**
The project site is free from encroachment by people?			
Land donor continue to support project (Land donor not attempting to repossess land; and there are no ownership issues raised by residents)?			
Land donor(s) is/are happy with compensation package (No complaints about adequacy and timeliness of compensation).			
Land donated is adequate for the project (No additional involuntary resettlement required).			
Lives and livelihood of resettled persons are adequately restored?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
SOLID WASTE MANAGEMENT	**YES**	**NO**	**N/A**
Adequate waste receptacles/bins are onsite?			
Solid waste stored onsite for more than two weeks?			
Site is clean and tidy?			

Valuable waste generated onsite is reused?			
Waste is disposed of at the appropriate disposal sites by contractor? (No dumpsites observed). Describe in comments if answer is "NO".			
Consultant maintains records of JSIF's Solid Waste Origin and Disposal (SWOD) form?			
Trucks transporting solid waste is properly covered?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			

SOIL AND WATER POLLUTION	**YES**	**NO**	**N/A**
Spoils are covered and protected by perimeter berms or otherwise protected?			
Excavated areas are revegetated or protected from erosion?			
Stormwater drains are protected from sediment?			
Spoils, sand, gravel, or demolition materials stored away (50 ft.) from water bodies?			
Slopes stabilized to minimize soil erosion and land slippage?			
Hazardous chemicals e.g. petroleum products and pesticides properly stored and used on site?			
Chemical containers properly covered with suitable lid?			
Chemical containers properly disposed of? Describe in comments if not.			
Chemical spills or leaks avoided onsite? If "No", please comment.			
Equipment such as concrete mixer adequately serviced to prevent petroleum leakage into the ground?			

Chemicals discharged into surface waters e.g. ponds, lakes, or rivers avoided?			
Refueling and maintenance of equipment e.g. oil change done in accordance with environmental protocols?			
Does the sanitation system consists of tertiary sewage treatment?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
ECOSYSTEM AND BIODIVERSITY	**YES**	**NO**	**N/A**
Avoided incidental/accident damage or removal of trees/forestry?			
Permit obtained to remove trees that pose a risk to the project?			
Trees removed are replaced as per JSIF Policy?			
Cutting of trees for hoarding avoided?			
Impacts of project on wildlife or endangered species prevented?			
Endangered species identified in project area reported?			
Project avoids altering the landscape of the site?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
CLIMATE CHANGE ADAPTATION/MITATIONS	**YES**	**NO**	**N/A**
Drainage system at the site adequate?			

Water efficient fixture such low flush toilets and low flow faucets being implemented?			
Rainwater harvesting system being implemented?			
Did the project use drip irrigation system as opposed to sprinklers?			
Energy efficient fixtures e.g. LED lighting being implemented at the site?			
Renewable energy system e.g. solar and wind being implemented at the site?			
Hurricane straps used to secure roof?			
Fertilizer applied according to plant needs and results of soil nutrient analysis?			
Were efforts made to preserve mangrove, forest or any other ecosystem in close proximity to the site?			
Did the Contractor avoid land clearing by fire?			
Did the project involve planting of trees?			
Overgrazing of vegetation avoided?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
EROSION CONTROL MEASURES	**YES**	**NO**	**N/A**
Structures constructed to protect against erosion/ landslide?			
Trenches backfilled/resurfaced immediately after excavation and structure installation?			
Cleared land revegetated in a timely manner?			
Farmers operation consistent with good land husbandry practices?			

COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
DUST AND NOISE	**YES**	**NO**	**N/A**
Dust adequately controlled onsite?			
Dust mitigation measures implemented onsite e.g. irrigation of dry dusty areas with water at least twice per day?			
Community satisfied with dust management onsite?			
Noise mitigation measures implemented onsite?			
Community satisfied with noise management onsite?			
Works conducted in the prescribed working hours of 8:00 AM to 6:00 PM?			
Construction equipment and vehicle in good working conditions?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			
HEALTH AND SAFETY	**YES**	**NO**	**N/A**
Normal working hours 8:00 a.m. to 6:00 p.m.			
Adequate sanitary facilities (toilet) available for workers?			
Project workers covered by insurance?			
Conduct awareness campaigns on HIV and other communicable diseases (have any awareness meeting on HIV/AIDS and other communicable diseases ever			

been organized.			
Conduct awareness campaign on child labour?			
Awareness meeting conducted for the prevention of prostitutions and other sexual offences?			
Accidents including death, injury, and fires at the site avoided?			
First Aid equipment available at the site?			
Workers wearing the appropriate personal protective equipment (PPEs) for the job?			
Appropriate safety signs erected onsite?			
Hazardous locations such as excavation pits properly marked for identification?			
Safe work practices being followed?			
Walkways cleared of clutter and trip hazards?			
Potable water available for workers?			
Construction materials and waste properly organized and stored?			
COMMENTS AND MITIGATION ACTIONS TO BE TAKEN:			

APPENDIX 6: GUIDELINES FOR VOLUNTARY LAND DONATION

- Land to be donated must be identified by the community through a participatory approach
- Impacts of proposed activities on donated land must be fully explained to the donor
- The potential donor is aware that refusal is an option, and that right of refusal is specified in the donation document the donor will sign
- The act of donation is undertaken without coercion, manipulation, or any form of pressure on the part of public or traditional authorities
- The donor may request monetary or non-monetary benefits or incentives as a condition for donation
- The proportion of land that may be donated cannot exceed the area required to maintain the donor's livelihood or that of his/her household
- Donation of land cannot occur if it requires any household relocation
- For community or collective land, donation can only occur with the consent of individuals using or occupying the land
- Verification must be obtained from each person donating land (either through proper documentation or through confirmation by at least two witnesses)
- The implementing agency establishes that the land to be donated is free of encumbrances or encroachment and registers the donated land in an official land registry
- Any donated land that is not used for its agreed purpose is returned to the donor.

Each instance of voluntary land donation in the sub-project must be documented. This requires written notification indicating the location and amount of land that is sought and its intended use for the subproject, and requires a formal statement of donation, establishing informed consent and signed by each owner or user involved. Taxes to be paid by the land donator for registration of the land transfer, if applicable, should be covered in full by the implementation agency. The implementation agency maintains a record with documentation for each instance of land donation. The documentation is made available for review in any grievance that may arise, and is provided to the World Bank upon request (see next page).

The project must specify means by which land donors (and, potentially, persons whose use or occupancy was not recognized in the transfer of land) may raise grievances, and

measures to ensure consideration of, and timely response to, grievances raised. The grievance process includes participation of reviewers not directly affiliated with the project implementing agency. Grievances may be referred to customary conflict mediation arrangements where they are not directly affiliated with traditional leaders who are a party to the donation process. Alternatively, grievances may be referred to grievance mechanisms established for project purposes. The grievance process imposes no cost upon those raising grievances, and participation in the grievance process does not preclude pursuit of legal remedies under national laws.

It is possible to distinguish between "pure" donations without any compensation or support given to the person affected, vis-à-vis "partial" donations which involve some monetary or non-monetary benefits or incentives provided to the affected person. Both can be broadly classified as "voluntary donations" in the sense that the transfer of assets is done without involving the payment of compensation at replacement value. Voluntary land donations may be allowed even if no viable alternative exists, as long as the donation is to the benefit of the donor (such as a road rehabilitation project that will also benefit the owner of a small piece of land to be donated for the road works).

All family members (including spouses) must be aware of the donation, in order to minimize the risks of women users of the land to be donated being passed over in decision-making on land donation and the risks of cross-generational conflicts.26 Individuals using or occupying community or collective lands must also be aware of the donation to minimize risks of settlers or migrants being passed over in decision-making on land donation.

Example of required contents of a form to be used at the community level for documenting voluntary land donations during the initial stages of sub-project or activity implementation

Format of land donation letter/statement/deed

- Landowner (name, address, occupation)
- Purpose and context of voluntary land donation
- Duration of voluntary land donation
- Title, status, address and dimensions (length, width and total area) of land to be voluntarily donated
- Current use of land to be donated
- Proportion of total land owned by landowner

- Site map and photos of land to be donated
- Names and dated signatures of landowner, of head of village, and of witnesses
- Names and dated signatures of Board of Trustee members
- Designation of record keeping procedures (ex: Local administration offices, Project Website, etc.)
- Designation of disclosure procedures (ex: Notification on community information board, in community media, on Project Website, etc.)
- Designation of applicable grievance mechanism(s).

APPENDIX 7: PROJECT WORKERS CODE OF CONDUCT

This code of conduct contains obligations on all project staff (including sub-contractors and day workers) that are suitable to address the following issues, as a minimum. Additional obligations may be added to respond to particular concerns of the region, the location and the project sector or to specific project requirements. The issues to be addressed include that all contractors and persons employed through the project and/or beneficiaries are to:

General work conditions

1. Comply with applicable laws, rules, and regulations of the Government of Jamaica;
2. Avoid conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection)
3. Respect reasonable work instructions (including regarding environmental and social norms);
4. Protect and properly use property (for example, to prohibit theft, carelessness or waste)
5. Comply with applicable health and safety requirements (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment);
6. Uphold Sanitation requirements (for example, that all workers use specified sanitary facilities provided by their employer and not open areas)
7. Not use illegal substances at anytime on or during work hours;
8. Not Discriminate against any other worker (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction)

Uphold Community Safety

9. Have respectful interactions with community members (for example to convey an attitude of respect and non-discrimination) with local communities;
10. Not engage in any act of sexual harassment (whether through use of language or behavior, towards men or women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate)

11. Not engage in any act of violence or exploitation (including prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior.
12. Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defense.
13. Not exchange money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior.
14. Attend training courses related to HIV/AIDS, GBV and CAE as requested by my Employer.
15. Report to the 'GBV and CAE Compliance Team' any situation where I may have concerns or suspicions regarding acts of GBV or against children by a fellow worker, whether in my company or not, or any breaches of this code of conduct.)

With regard to children under the age of 18:

16. Ensure the Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behavior with children, limiting interactions with children, and ensuring their safety in project areas)
17. Wherever possible, ensure that another adult is present when working in the proximity of children.
18. Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children through any medium
19. Refrain from physical punishment or discipline of children
20. Refrain from hiring children for domestic or other labor which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
21. Comply with all relevant local legislation, including labor laws in relation to child labor.

Process to file a Grievance Complaints

22. Protected against retaliation for workers who report violations of the Code, if that report is made in good faith.
23. Report violations of this Code as a duty;
24. If I have any complaints regarding my work conditions, I can complain to the site manager at the following number _____. If my concerns are related to sexual harassment, I can call the Centre for the Investigation of Sexual Offences and Child Abuse (CISOCA) at 876-926-7318 or Office of the

Children's Registry at 1-888- PROTECT (876-776-8328) (LIME). Tel: 876-908-2132 (LIME). 876-618-5888 (Digicel Landline) which handles such matters in a confidential manner.

On signing I confirm that:

a. I have received a copy of this Code
b. The code has been explained to me
c. Acknowledged that adherence to this Code of Conduct is a condition of employment; and
d. Understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.

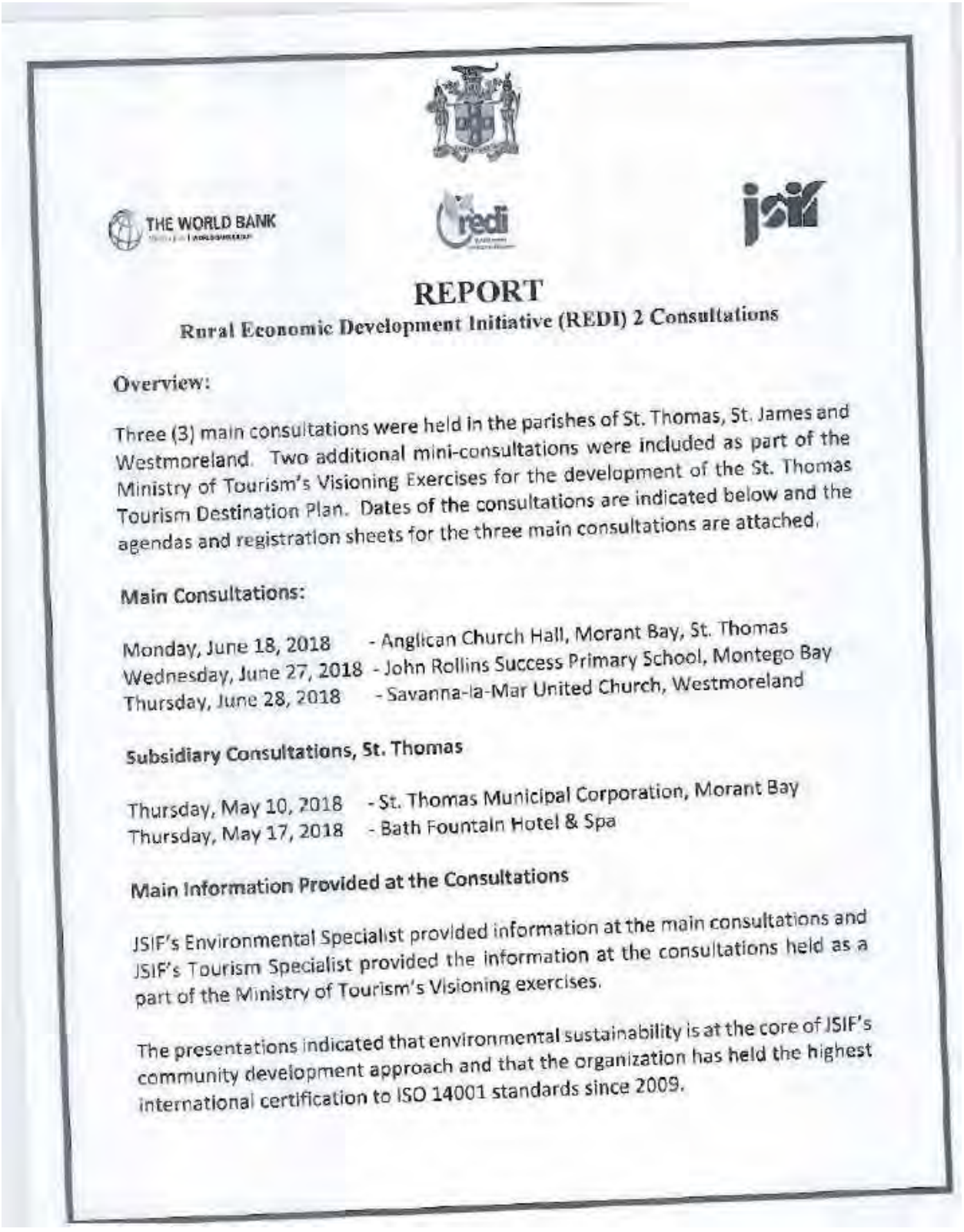
SIGNATURE:_____ DATE: _____

PRINTED NAME: _____

APPENDIX 8: REPORTING FORMAT FOR GRIEVANCE REDRESS

Community Project & Name of Complainant	Type of Grievance					Grievance resolution			
	Affected, but not informed about impacts and options	Compensation awarded is inadequate	Compensation not paid before asset acquisition	Resettlement benefits awarded are not provided	Other	Date of complaint	Date resolved	Pending	Case referred to the Court
Community Project 1									
Complainant A									
Complainant B									
Complainant C									
Community Project 2									
Complainant D									
Complainant E									
TOTAL									

APPENDIX 9 – SAMPLE STAKEHOLDER CONSULTATION



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REPORT

Rural Economic Development Initiative (REDI) 2 Consultations

Overview:

Three (3) main consultations were held in the parishes of St. Thomas, St. James and Westmoreland. Two additional mini-consultations were included as part of the Ministry of Tourism's Visioning Exercises for the development of the St. Thomas Tourism Destination Plan. Dates of the consultations are indicated below and the agendas and registration sheets for the three main consultations are attached.

Main Consultations:

Monday, June 18, 2018 - Anglican Church Hall, Morant Bay, St. Thomas
Wednesday, June 27, 2018 - John Rollins Success Primary School, Montego Bay
Thursday, June 28, 2018 - Savanna-la-Mar United Church, Westmoreland

Subsidiary Consultations, St. Thomas

Thursday, May 10, 2018 - St. Thomas Municipal Corporation, Morant Bay
Thursday, May 17, 2018 - Bath Fountain Hotel & Spa

Main Information Provided at the Consultations

JSIF's Environmental Specialist provided information at the main consultations and JSIF's Tourism Specialist provided the information at the consultations held as a part of the Ministry of Tourism's Visioning exercises.

The presentations indicated that environmental sustainability is at the core of JSIF's community development approach and that the organization has held the highest international certification to ISO 14001 standards since 2009.

It was pointed out that JSIF is committed to implementing projects in alignment with applicable local and international environmental laws and the requirements of our funding partners.

It was further emphasized that World Bank projects including the proposed REDI 2, require the application of specific standards of care with respect to environmental and social issues. Environmental and social safeguards and details of these including the mitigation measures for the protection of the physical environment, health and safety of project beneficiaries, the protection of indigenous people and their properties, the protection of physical cultural resources etc. were shared with attendees.

There was representation from the various Municipalities in the persons of deputy Mayors and Councillors at the consultations and support was provided by potential REDI 2 partners such as the Social Development Commission (SDC), the Rural Agricultural Development Authority (RADA), the Tourism Product Development Company (TPDCo) and the Department of Cooperatives and Friendly Societies (DCFS).

The information provided by JSIF and partners was generally well received and appreciation expressed that JSIF and the partners organized the consultations.

Feedback regarding Environmental Issues from the Consultations

The following was the main feedback from the sessions:

- The Westmoreland consultation strongly recommended that some kind of group insurance be explored for the mitigation of disasters and praedial larcency.

- The St. Thomas consultations were mainly concerned about access (roads, bridges and drainage) for both agriculture and tourism.

Other issues raised and discussed had to do with the involvement of youth in the proposed programmes, governance issues with respect to formation, registration and monitoring of groups and the cost and issuing of licenses.

Beverly Stewart
Tourism Specialist
July 2, 2018

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Programme

Rural Economic Development Initiative (REDI) 2 Consultation

Wednesday, June 27, 2018

John Rollins Success Primary School

9:30 am	**Registration**	
10:00am	Welcome and Opening Remarks	Mrs. Beverly Stewart Tourism Specialist, JSIF
10:05-10:10am	Greetings	Councilor Leroy Williams
10:10-10:15am	The JSIF Story.....	Vincent Thompson Agriculture Specialist, JSIF
10:15-10:35am	Short Video on REDI 1 highlights	
10:35-10:40	REDI 2 Power Point Presentation	Vincent Thompson
10:40-10:55 am	JSIF Environment Safeguards	Dr. Milton Clarke JSIF
10:55-11:00am	Remarks	Mr. Randy Hayle SDC
11:00-11:05am	Remarks	Larisa McBean TPDCo
11:05-11:10 am	Remarks	Mrs. Sadie Dixon-Bennett Parish Manager RADA
11:10-11:15am		Mr. Oneil Gotrdon Asst. Superintendent Road and Works
11:15 am-12:00pm	Question and Answers/ Closing Remarks	

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Programme

Rural Economic Development Initiative (REDI) 2 Consultation

Thursday, June 28, 2018

Savanna-la-mar United Church Beckford Street

9:30 am	**Registration**	
10:00am	Welcome and Opening Remarks	Mrs. Beverly Stewart Tourism Specialist, JSIF
10:10-10:15am	The JSIF Story.....	Vincent Thompson Agriculture Specialist, JSIF
10:15-10:35am	Short Video on REDI 1 highlights	
10:35-10:40	REDI 2 Power Point Presentation	Vincent Thompson
10:40-10:55 am	JSIF Environment Safeguards	Dr. Milton Clarke
10:55-11:00am	Remarks	Mr. Ron Daley SDC
11:00-11:05am	Remarks	Larisa McBean TPDCo
11:05-11:10 am	Remarks	Mr. Roan Vassel Parish Manager Rural Agriculture Development Au
11:10-11:15am		Mr. Omar Palmer Deputy Chief Engineering Officer Westmoreland Municipal Corporation.
11:15 am-10:00pm	Closing Remarks/ Questions and Answers	

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas

DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Odane Robinson	Heritage Officer	TPDCo	876 550 9114	odane.robinson@tpdco.org	O. Robinson
Opal Browning	Urban Planner	TPDCo	876 574 0770	opal.browning@tpdco.org	
Lana M[illegible]	—		876 222 5334		[signature]
Sandra Dillard	—		876 502 8252	Sandyannwill@Gmail	Sandra Dillard
Shanique White	Community Dev Officer	SDC	876 838 9851	ashaniwhite@hotmail.com	[signature]
Beatrice Olivo	Peace Corps	Belle Castle Farmers Group	551-9110	beatrice.olivo@gmail.com	[signature]
Dennis Reid	farmer	Belle Castle Farmers Group	831-7725		[signature]

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REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: American Church Hall Morant Bay St Thomas DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Lenworth Rawle	Deputy Mayor	St. Thomas municipal	356-5570		
Paulette Duncan	Social Services Home EC Officer	RADA.	1876-833-6[illegible]	Duncanp@rada.gov.jm	
Dorolene Elliott	Secretary	Content	4353874		D Elliott
Muriel Ross	Farming	Bethel	519-4357		

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas **DATE : June 18, 2018**

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Francella Bull	Member	Cedar Valley.	7725406		F Bull
Antonio Porter	President	Hillside CDC	2849119	antonioporter[illegible]@[illegible].com	
[illegible]	Councillor	Seaforth Division	579-3184	[illegible]@gmail.com	
[illegible] Williams	Volunteer	Seaforth Division	5485979	[illegible]2005@gmail.com	
Ayacinth Blake		J.A.S. Prada Group, Johns Town	412-5765		ABlake
[illegible] Lawrence	Farmer	Reggae Falls	363-4657 340-8081	[illegible]@hotmail.com	[illegible]
Coshin Gillings	Farmer	Cedar Valley	314-5861		CGillings

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RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas

DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Arthur Miller		Cedar Valley	3920455		Arthur Miller
					Cedar Valley
Merrick Dafadam	Chief Engineer St. Thomas Municipal	St. Thomas Municipal Corporation			[illegible]
Neva Lee		Baine group	3042070		
Hazel Toffe	Farmer	Cedar Valley	360-7155 334-6314		H Toffe
Fayline Grantley Toffe	Farmer	Cedar valley	842-8027		F Grantley Toffe
Leota Toffe	farmer	Cedar Valley	520-3413		[illegible]

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REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas

DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Meckelia Mills		Duckworth	893-7646		M. Mills
Valrie Williams		Llandewey CDC	519 6629 434-3059	[illegible]	[illegible]
Glenese Ffrench		Cedar Valley	771 8735		G Ffrench
Shelmer Lawes		Duckworth	451-8096		[illegible]
Carlan Parke		Cedar Valley	870-3271		[illegible]
Milton Clarke		JSIF	405-5035		[illegible]

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Esmaralda Markland	Farmer		430-0988 806-1277		Emarkland
Julian Gardner	J Burgher		439 1469		Gardner
Tishawn Mullings	CEO	Next Steps Educational Service	284-8083	lifecoachmullings@gmail.com	
Collin M Meeche	A/A BATH	R.A.D.A	833-5909		Meeche
Hyacinth V Walker			4357465		H walker
Minnette Sterling	Farmer		584-0823		M Sterling

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas

DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Pauline McPherson	Secretary	Hillside CDC	358-4070		[signature]
Phelipa Campbell-Francis	Regional Mngr	NWC	822-4854	phelipa.campbell-francis@nwc.com.jm	[signature]
Sheldon Scott	DPAM	RADA	530-3384	ricoscotty100@gmail.com	[signature]
Edwin Morrison	A/A	Rada	7339839		[signature]
[illegible]	Production manager	[illegible]	350-9292	[illegible]	[signature]
C Lennox	President	Small farmer	8683856		[signature]

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RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Anglican Church Hall Morant Bay St Thomas DATE : June 18, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Lenoy Rumphell		SSIF	2560384		
Kadian Edwards-Brown		Penlyne Castle Farmers	3671244		
Aden Jackson		Penlyne Castle	459-0222 803-1576		Jackson
Merline Edwards		Penlyne Castle PMO	523-4088		M Edwards
Alfred Edwards		Penlyne Castle PMO	351 9206		A Edwards
Troy Brown		Penlyne Castle PMO	984-6359		T Brown

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: John Rollins Success Primary School Auditorium

DATE : June 27, 2018

NAME	JOB TITLE	ORGANIZATIONS	E-MAIL	TELEPHONE	SIGNATUR
SADIE DIXON-BENNETT	PARISH MANAGER	RADA	[illegible]@rada.gov.jm	3[illegible] - 0861	SDBennett
Edmar Edwards	Manager	Three Hill Producers Co-op	[illegible]@yahoo.com	5[illegible]1 - 3680	[illegible]
Michael Grizzle	CHIEF	Technically Focal - Flagstaff Approach	Michael.Grizzle@yahoo.com	291-4696	[illegible]
Everaldo Williams	FARMER	Goodwill Farmers Association		896 4861 / 399 9994	[illegible]
Winston Samuels	Farmer	Goodwill Farmers Association	Winsam@[illegible]	384 5517	[illegible]
Milton Clarke	system operation and environment manager	JSIF	milton-clarke@jsif.org	405-5035	[illegible]
Pete Jackson	Building Officer	ST. James Municipal Corporation	PJackson@STJames PC.gov.jm	952-5500-2	[illegible]

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REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: John Rollins Success Primary School Auditorium

DATE : June 27, 2018

NAME	JOB TITLE	ORGANIZATIONS	E-MAIL	TELEPHONE	SIGNATUR
Vincent Thompson	Agriculture Specialist	JSIF	vincent.thompson@jsif.org	384 1951	
Beverly Stewart	Tourism Specialist	JSIF	beverly.stewart@jsif.org	876-532-0267 876-909-4525	
* Sandra Miller-Hall		Sir [illegible] Cluster Committee, Ambassador for Bristol Cornwall region Committee.		3283405	
Winsome Barrett	M/Sales CDC		senrab304@hotmail	360-7632	
Norma Reid Williams	M/Sales CDC		reidwilliams@yahoo	534-8535	
Mavis Dowdie	PRO	Bogue Village Citizen Association Benevolent Society	mavisdowdie@yahoo.com	876. 480. 46 41.	

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REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: John Rollins Success Primary School Auditorium DATE : June 27, 2018

NAME	JOB TITLE	ORGANIZATIONS	E-MAIL	TELEPHONE	SIGNATUR
Dr Machelle Stubbs	Medical Doctor	Bogue Village ei Association	machelle_stubbs @yahoo.com	383 2524 821 4145	

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street **DATE :** June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
VACCIANA PATRICIA	Farmer	Bay Road Ulan	4379330		P. Vacciana
Nadine Kessna	farmer	Belle Isle P.M.O	426-4030		N. Kessna
Sedly Murray	FARMER	Belle Isle P.M.O	323 8349		[illegible]
Joan William	farmer	Bohod	9302197		J William
Kenworth Murray	farmer	Bird Mountain P.M.O.	560-8528		R Murray
Marcia Forbes	Poultry Farmer	Blue Castle. Georges Plain	876-869070		M Forbes
PAUL WASHINGTON	FARMER FARM/TOURISM	Reggae Horseback Riding	876-881-6917	paul@reggaehorsebackriding.com	[illegible]

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street DATE : June 25, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Berona McDonald	Farmer	RADA	422 4015		B McDonald
RUDOLPH UTER	Cllr.	Rural JPS	509-1076	Rudolph.Utter@gmail.com	
George Wright	Cllr	Rada/JPS	361856	George62wright@gmail.com	
Yvonne Heaven			8694714	Heaven.yvonne@yahoo.com	Yvonne Heaven
Beverly Forbes					B Forbes
CHARLES HALL	A.E.O	R. A. DA	995-6798	HALLC@RADA.com	C. Hall

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street **DATE :** June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Seraeta Morris	A.E.O	R.A.D.A	876 990-9838	morrisst@rada.gov.jm	S. Morris
Terry Bankine	Agri. Assistant	R.A.D.A.	876 997-3167	[illegible]	[illegible]
Moses Chybu	VP	WPDC	876 9781507	moses.chybu@yahoo.com	[illegible]
Ron Daley	Parish Mngr	SDC	873-6452	daleyr@sdc.gov.jm	Ron Daley
Yuri Stephenson	Deputy Parish Agric. Mngr (Acting)	RADA	876 816-6387	stephensony@rada.gov.jm	[illegible]
Patricia James	Bullet tree	~~Rada~~ Bullet Tree PMO	856070		[illegible]

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street DATE : June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Omar PALMER	DEPUTY SUPERINTENDENT	WESTMORELAND MUNICIPAL CORPORATION	918-1531 / 869-5824	o-palmer@yahoo.com	
Alethia Sharpe	Poultry Farmer	Friendship Achievers RADA Group	365 8202	sharpealethia@gmail.com	
CARL MENNELL	Farmer	Tornton PMD.	791 2067	Shinehead@Hotmail.com	
Kenrick Bailey	Farmer	Friendship achievers	506-6751		K Bailey
Phyllis Kennedy	Poultry Farmer	Burnt Savannah Pmo	541-3992		P Kennedy
Patricia Parchment	farmer & Food processor	W.O.F.S. Westmoreland Bee Farmers Ass.	5430092	patriciaparchment125@gm	P. Parchment
Dwayne F. Joseph	Marketing Extension Officer	RADA, Westmoreland	876-858-1138	joseph.d@rada.gov.jm	

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street DATE : June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Ann-Marie Brown	Agricultural Extension Officer	RADA	995-9914	browna@rada.gov.jm	A. Brown
Andre' Freckleton	Agricultural Extension Officer	R.A.D.A.	875-3153296	Frecklefon@rada.gov.jm	[illegible]
Roan Vassel	Parish Agri Mang	RADA	324 7451	vasselr@rada.gov.jm	R. Vassel
Bradman Murray	Bee Farmer WBFA.	WBFA.	812 8537		B Murray
Loretta Rankin	Chicken Farmer		391-6976	lorettatotal63@gmail.com	Rankin
Lorraine Vanriel			779-2901 894-0662		
Ainsley Thomas	Senior Restitution Inspection Officer	DCFS	432-2584 957-7913	ainsley.thomas@dcfs.gov.jm	A. Thomas

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street **DATE :** June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
KepRime Harris	Farmer/Horse Keeper	Georges Plain	542-6331	Kepime.Haris@gmail.com	K. Harris
Lenord Beckford			822-6091		L Beckford
Clearton Reid	farmer	Argyle mtn P.M.O	8772474	Clearton Reid 910 @gmail	[illegible]
Jennifer Gray	Farmer	Galloway PMO	858-0073		J Gray
Gareth Vanhorne.		Top Lincoln P-mo	875-8755	Gareth Vanhorne @gmail	Gareth Vanhorne
Michael Solomon	Priest/Farmer	Holy Trinity church	918-8060 342-4823	holytrinity[illegible]@gmail.com revmsolomon@gmail.com	[illegible]

REGISTRATION

RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street

DATE : June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Camille Anderly	SSHE Officer	RADA	876 995-0896	[illegible]	
Kepime Morris	Hose Keeper	[illegible]	876 542 6331		
Milton Clarke	Env. Specialist	JSIF	876 405-5035		
Vincent Thompson	Agriculture Scientist	JSIF	584 1957		
Beverly Stewart	Tourism Specialist	JSIF	876-552-0367	beverly.stewart[illegible]	

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RURAL ECONOMIC DEVELOPMENT INITIATIVE (REDI) 2 CONSULTATION

VENUE: Savanna-la-mar United Church Beckford Street DATE : June 28, 2018

NAME	JOB TITLE	ORGANIZATIONS	TELEPHONE	E-MAIL	SIGNATURE
Sophia Ulett	Farming	Bonneyside P.M.O group	419-8253		S Ulett
Oral Campbell	Farming	Cold spring	581-7277		O Campbell