

Environmental and Social Management Framework (ESMF)

Submitted by

World Vision International, Ghana

for

**Improved Feeding Practices for first 1,000 Days
(P159735)**

February, 2017

EXECUTIVE SUMMARY

World Vision Ghana is seeking a US\$ 2.8 million grant support from Japan Social Development Fund, International Development Agency(IDA), grant to implement improved feeding practices project for first 1,000 days among women of reproductive age (including pregnant and lactating women) and children under two (the so-called "first 1,000 days of life" in three districts of Ghana. The Project which is agriculture - nutrition related seeks to improve malnutrition, feeding practices among women, livelihood and living standard among women in their reproductive age groups.

Improving household nutrition using social enterprise approach is recognized as key model to improving malnutrition in Ghana. This model helps to also increase income and provide employment for households.

The Project triggers two (2) World Bank Safeguards Policies namely:

- Environmental Assessment OP/BP 4.01;
- Pest Management OP 4.09; and

Since the Project involves a number of sub-projects on the production of vegetables, fruits and production of birds on small scale in locations which are not yet determined, an Environmental and Social Management Framework (ESMF) is needed to assess the potential impacts and outline the procedures for further assessment when the actual investment sites are determined during implementation.

Purpose of the ESMF

The Environmental Assessment (EA) Regulations - Legislative Instrument (LI) 1652 provides the general framework for the assessment and management of environmental and social safeguards of developments/projects in Ghana. However, since the World Bank is providing the funds, the project is additionally obliged to comply with the World Bank Safeguards Policy on Environmental Assessment (OP/BP 4.01) which under this Project, an ESMF¹ is deemed an appropriate tool for now because of the following features of the Project:

- Design of the sub-components and exact locations for implementation, as well as impacts are not yet determined at this stage.
- Various developmental stages to be carried out during implementation;
- Sub-components spread over a wide geographic area (at least 3 regions);

¹ Environmental and Social Management Framework

The ESMF spells out the Environmental and Social regulations of Ghana, safeguards requirements under the project, institutional arrangements and capacity required to implement the framework. This ensures that project under the Project meet the national and local E&S requirements, and also consistent with Environmental Assessment OP 4.01, Pest Management OP 4.09 (of the World Bank). The ESMF sets out principles and processes within which the projects are implemented agreeable to all parties.

The other objectives of the ESMF include:

- Assessment of potential adverse E&S impacts commonly associated with the various components of the projects and the way to avoid, minimize or mitigate them;
- Establishment of clear procedures and methodologies for the E&S planning, review, approval and implementation of sub-components;
- Development of an Environmental Assessment (EA) screening procedure /initial assessment to be used for sub-components;
- Specification of roles and responsibilities and the necessary reporting procedures for managing and monitoring sub-components E&S concerns, and;
- Provide budget estimates and resources required for the implementation of the ESMF.

The Proposed Project Objective

The Project Development Objective (PDO) is to improve the feeding practices among targeted women of reproductive age (including pregnant and lactating women) and children under two (the so-called "first 1,000 days of life").

The Project has four (4) key components as follows:

- a) Access to Innovative Nutritional Supplements
- b) Household-level Agriculture
- c) Nutrition Messaging
- d) Program Management and Administration, Monitoring and Evaluation and Knowledge Dissemination

Policy, Legal, Regulatory and Institutional Framework

The major national policy framework relevant to the Project comprises:

- Ghana National Environmental Policy, 2012;
- National Land Policy, 1999;
- Occupational Safety and Health (OSH) Policy of Ghana, Draft 2004;

- National Workplace HIV/AIDS Policy, 2012
- Food and Agriculture Sector Development Policy (FASDEP II), 2007
- Ghana's Medium Term Agriculture Sector Investment Plan (METASIP)
- World Bank Safeguards Policies

Regulatory instruments relevant to the proposed Project include:

- Environmental Assessment Regulations, 1999 (LI 1652);
- Water Use Regulations, 2001 (LI 1692);
- Control and Prevention of Bush Fires Act, 1990 (PNDC 229);
- Labour Act, 2003 (Act 651);
- Fire Precaution (Premises) Regulations, 2003 (LI 1724);
- Plants and Fertilizer Act, 2010, Act 803
- Environmental Assessment Regulations, 1999, LI 1652 and its Amendment

Relevant institutional framework comprises:

- Ministry of Food and Agriculture (MoFA);
- Ministry of Environment, Science, Technology and Innovation;
- The Environmental Protection Agency (EPA);
- The Water Resources Commission (WRC);
- Ministry of Local Government and Rural Development (MLGRD)

Potential Environmental and Social Impacts

The following major stakeholders were consulted for role identification and for potential environmental and social impacts likely to arise from the Project implementation:

- Environmental Protection Agency (EPA);
- Affected District and Municipal Assemblies;
- Ministry of Health (MoH);
- Project impact communities;
- Lands Commission (LC);
- Ministry of Food and Agriculture (MoFA);
- Forestry Commission/Wildlife Division (WD);
- Ministry of Environment, Science, Technology and Innovation (MESTI); and
- NGOs. CBOs

The project will promote planting of Orange Fleshed Sweet Potato, vegetables (spinach, carrot, cabbage, pepper), pawpaw, cashew, moringa for household consumption and sales for income

generation. The project will also work with households to rear chicken for egg and meat. These will be consumed at home to improve nutritional status of households and part sold for income generation.

Beneficial Impacts

Potential beneficial impacts of the Project will include:

- Improved Soil conservation
- Water resources conservation
- Increased farm incomes from crop output
- Food Security
- Poverty alleviation
- Raise rural income
- Improved nutrition
- Employment creation for community members;
- Empowerment of farmers

Adverse Impacts

Anticipated adverse impacts of the Project include:

No	Project and Associated Activities	Potential Environmental and Social Impact/Issues	Environmental significance
1	Production of fruits for household consumption and income- (pawpaw, cashew, moringa, soar sop)	<p>Burning of thrash/garbage can lead to environmental pollution and soil erosion;</p> <p>Destroy vegetation flora & fauna, expose land surface to wind & run-off</p> <p>Activities can destroy soil micro-organisms, induces soil erosion & nutrients loss</p> <p>Activities can lead to destruction of vegetation (trees, forests)</p> <p>Losses can occur through risk of fire outbreak in storage</p>	<p>Minor</p> <p>Minor;</p> <p>Minor</p> <p>Moderate</p> <p>Minor</p>

		<p>Losses can occur through pest and disease infestation</p> <p>Soil and land degradation;</p> <p>Groundwater pollution;</p> <p>Occupational health and safety issues;</p> <p>Adversely impact on climatic conditions can occur as result of activities</p> <p>Farms/crops can be destroyed when constructing access roads/tracks to cart farm produce</p> <p>Increased demand on fuel wood as the major source of energy can lead to devastation of the forest</p> <p>Use of chemicals to induce ripening of fruits and vegetables can have harmful effects on human</p>	<p>Minor</p> <p>Moderate</p> <p>Minor</p> <p>Minor</p> <p>Moderate</p> <p>Minor</p> <p>Minor</p> <p>Minor</p>
2	Production of Orange Fleshed Sweet Potato and other vegetables for household consumption and income (spinach, carrot, cabbage, pepper),	<p>Burning of thrash/garbage can lead to environmental pollution and soil erosion;</p> <p>Water pollution as result of spraying and other activities;</p> <p>Soil organisms can be destroyed through burning and leading to soil erosion;</p> <p>Destruction of flora and fauna habitat;</p> <p>Soil and land degradation;</p> <p>Groundwater pollution;</p> <p>Occupational health and safety</p>	<p>Moderate</p> <p>Minor;</p> <p>Moderate</p> <p>Moderate</p> <p>Moderate</p> <p>Minor</p> <p>Minor</p>

		<p>issues;</p> <p>Use of chemicals to induce ripening of crops can have harmful effects on human</p> <p>Vegetation (trees vegetative cover) destroyed through construction of access roads/ tracks</p> <p>Reduction in land cover, creation of residual waste</p> <p>Farms/crops can be destroyed when constructing access roads/tracks</p>	<p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p>
	Fertilizer application to crops	<p>Improper application of application of fertilizer can increase PH of the soil</p> <p>Application of fertilizer in rainy season resulting in ineffective targeting and increased runoff and uptake by soils and water bodies</p> <p>Increased application of fertilizer is likely to result in soils / land degradation, pollution of air and water bodies</p> <p>Use of highly toxic fertilizers can lead to explosion and generation of heat to plants, animals and humans</p> <p>Improper use, contamination by high exposure, no precautionary measures leading to health impacts</p> <p>Fertilizers pollute soil and water, can make soil saline, affect plant growth if not well applied</p> <p>Details are included in the PMP commissioned separately as required</p>	<p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Moderate</p> <p>Moderate</p> <p>Minor</p> <p>Moderate</p>

		by OP4.09	
	Herbicides and Pesticides application to crops	<p>Increased application of agro-chemicals is likely to result in soils / land degradation , pollution of air and water bodies , Harmful effects on human/animals</p> <p>Over application of agro-chemicals in the catchments area can lead to pollution of water bodies.</p> <p>Polluted water bodies affect aquatic life</p> <p>Improper application of herbicide/ pesticide amounts</p> <p>Application of herbicide/ pesticide in rainy season resulting in ineffective targeting can increase runoff and uptake by soils and water bodies</p> <p>Use of highly toxic chemicals to plants, animals and humans</p> <p>Improper use, contamination by high exposure, no precautionary measures leading to health impacts</p> <p>Details are included in the PMP commissioned separately as required by OP4.09</p>	<p>Moderate</p> <p>Minor</p> <p>Minor</p> <p>Moderate</p> <p>Minor</p> <p>Major</p> <p>Moderate</p>

4	Poultry production	Pungent scent is generated from poorly managed waste	Moderate
		Occupational health and safety;	Minor
		Water pollution;	Minor
		Noise pollution	Minor
		Emissions of air pollutants (incl. NH3, PM10 and NOx)	Minor
		Greenhouse gas emissions (incl. CH4, CO2 and N2O)	Moderate
		Soil pollution if waste is not well managed	Minor
		Sick poultry can have impacts on human health	Minor
		Poor management of waste can result from infestation of the area by rodents and insects	Minor
		Emission of atmospheric pollutants (e.g. smoke, gas) during processing can pose risk to human health	Minor
		Increased generation of solid waste from droppings if not well managed	Minor
Social Impacts			
5	General	Increase in women work burden;	Minor
		Public health issues;	Minor

ESMF Implementation

The successful implementation of the ESMF depends on the commitment of WVG and other related institutions, the capacity within the institutions and the appropriate and functional institutional arrangements among others. The MOFA, Lands Commission, MESTI, and EPA

have been involved in the preparation and the review of the ESMF. The key ESMF implementation areas and the relevant institutional roles as well as the institutional arrangement and collaboration for successful implementation of the ESMF of the Project have been determined and outlined. The E&S monitoring and reporting roles and responsibilities within institutions and among the stakeholders have been mapped out. An Environmental and Social Management Plan (ESMP), a social and environmental screening process (see Annex 2 for checklist) for selection and evaluation of the sub-components are required to manage both environmental and social aspects of these activities, preferably in a participatory manner with beneficiary communities, including women and vulnerable groups. WVG will use this checklist to screen all potential projects and report accordingly as part of the usual project formulation (feasibility phase) exercise.

Summary of Environmental and Social Screening Process and Responsibility

No	Stage	Institutional Responsibility	Implementation Responsibility
1	Screening of Environmental and Social micro Project to assist in project formulation using checklist	WVG	WVG Social and Environmental Officer
2	Determination of appropriate environmental and social assessment level/ category	EPA/ WVG	WVG Social and Environmental Officer
2.1	Selection validation	World Bank	WVG Social and Environmental Officer
3	Implementation of environmental and social assessment	WVG	WVG Social and Environmental Officer
3.1	If ESIA is necessary		
3.1a	Preparation of terms of reference	WVG	WVG Social and Environmental Officer
3.1b	Selection of Consultant	MoFA/Procurement Officer	Social and Environmental Officer/ Procurement Officer/ Safeguards specialist
3.1c	Realization of the EIA, Public Consultation and participation. Integration of environmental and social management plan issues in the tendering and project	MoFA/ Procurement Office/ Consultancy firm/ Contractor	Social and Environmental Officers/ Procurement Officer

	implementation,		
4	Review and Approval	EPA/ World Bank	
4.1	ESIA Approval (B1)	EPA/ World Bank	
4.2	Approval simple measures (B2&C)	MOFA	Social and Environmental Officer/ Project manager
5	Participatory Public Consultation and disclosure	MoFA/EPA/ World Bank	Consultant
6	Surveillance and participatory monitoring	Implementing agency/EPA/ World Bank/ MoFEP	Social and Environmental Officers/ WB Safeguards specialists
7	Development of participatory monitoring indicators	MOFA	Environmental Officer /Safeguards Consultant

Participatory Monitoring Plans and Indicators

Participatory Monitoring Plans have been developed to support the implementation at the project level. These are given in the report and include description of the impact issues, proposed mitigation actions, monitoring indicators, verification, and responsibilities by all parties involved in the Projects.

Institutional capacity

The capacity building requirements will mostly be in the form of training programs. Training workshops / seminars on the ESMF/RPF and the World Bank/EPA safeguard policies would be organized for WVG. The following additional training areas have been identified:

- World Bank Safeguard policies and Ghana EPA Environmental Assessment Regulations
- Environmental and Social Screening Checklist
- Completion of EPA EA Registration Forms
- Preparation of Terms of Reference for ESIA
- Environmental and Social Clauses in contracts and bidding documents.

Public consultation and Participation

Many relevant persons and institutions were consulted in the 3 project regions in the process of preparing this ESMF. In addition, public consultations and participation workshops were held in the Greater Accra to seek input from the public. The EPA was fully represented in these meetings and provided assurances of full support to the project. Capacity and gender including the poor and most vulnerable groups' issues were highlighted and suggestions provided for technical training and developmental assistance.

Environmental and Social Impact Mitigation

The table below summarizes the potential impacts of the various Project activities and its proposed mitigations:

Summary of Project's Potential Impacts

Impact issues	Description of mitigation measures
Physical Environment	
Waste disposal	<p>Solid non-toxic waste</p> <ul style="list-style-type: none">• Biomass to be disposed of on farmlands.• Animal droppings and other farm waste could be used as mulch to enrich the soil.• Adequate waste reception facilities should be provided at various project sites• Final disposal should be at dump sites approved by the local District Assembly• Basic storage facilities to be provided to avoid rotting.• Farmers will be encouraged to send empty chemical containers for final disposal. Management of pesticides containers are detailed in the PMP.
Air pollution	<ul style="list-style-type: none">• The Projects should ensure that the waste from the poultry production is maintained well to reduce gas emission. If sites are located in close proximity to schools/health clinics, thus include minimization of noise generating activities during day-time hours, in order to comply with EPA guidelines on noise• If dropping generation at the project becomes a problem, limited wetting of sites and or

	<p>unloading and reloading points should be done to reduce dropping raising</p> <ul style="list-style-type: none"> • Change litter often to reduce accumulation of methane gas in poultry system • Also use wood shaving either than sawdust to keep poultry house in good order • Left over vaccines should be disposed well • Antibiotics should be given to animal in the right dose • The use of pesticides on the farmlands should be minimised. The main control methods for pests and diseases will involve the use of resistant hybrids. • Practice of Integrated Pest Management (IPM) Plan with support and assistance from MoFA will be promoted. • Types of pesticides, fumigants as well as their active chemical ingredients and their side effects would be known and confirmed prior to use. • Lead farmers with the assistance of MoFA to educate farmers on appropriate application and handling methods
Noise pollution	<ul style="list-style-type: none"> • The Projects should site farms at the outskirts of town or human activity to minimize noise. • Birds should be fed well to reduce noise • Ecto- parasites should be treated well to reduce noise level • Chronic respiratory disease should be treated well to reduce noise level
Water pollution	<ul style="list-style-type: none"> • Saw dust should not fall in the water meant for drinking in terms of the poultry production • Drinker should be well positioned in the litter house • If agrochemicals (herbicide and pesticides) are used near water bodies the projects should observe the relevant buffer distances and avoid misuse of agrochemicals
Soil and Land degradation	<ul style="list-style-type: none"> • Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather • Re-vegetate cleared areas as early as possible

	<ul style="list-style-type: none"> • Erosion minimization technics will be implemented on areas with high risk of erosion (gradient of 25% or more) • Nitrogen fixing cover crops like Pueraria phaseoloides, Calopogonium mucunoides, and Centrosema pubescens will provide the needed nitrogen required by the crops and fodder. Other organic wastes to be used include cow dung and organic kitchen waste among others. • Organic farming practices will help eliminate the use of inorganic fertilisers and herbicides that are major contributors to surface water quality deterioration. • The project will work closely with MoFA to teach and illustrate best farming practices to project communities/ farmers.
Impact on fauna and natural habitat	<ul style="list-style-type: none"> • Projects will not be allowed within legally gazzeted protected areas and critical natural habitats • Avoid unnecessary exposure and access to sensitive fauna habitat areas • The use of tried and tested native methods like trapping/scaring of animals and destroying nestling/breeding areas of pests will be encouraged • For identified or suspected sensitive habitats (swamps/ wetlands), regular inspection or monitoring should be carried out in the area prior to start and during work. • If sensitive habitats are encountered, Project activities should cease and the Project should consult Wildlife Division to determine the appropriate course of action. • If the project site is discovered as a sensitive habitat area, the Project should engage the Wildlife Division to develop a suitable plan.
Impacts on water bodies/ Fauna habitat	<ul style="list-style-type: none"> • Project staff must report sightings of any injured or dead aquatic and terrestrial life immediately, regardless of whether the injury or death is

	<p>caused by a Project activity. The report should include the date and location of the animal/strike, and the species identification or a description of the animal. The report should be made to the EPA or Wildlife Division.</p> <ul style="list-style-type: none"> The Project workforce and local communities should be educated to ensure that the importance of environmental protection and nature conservation are effectively communicated and that wider appreciation of environmental issues are fostered.
Decommissioning of projects	<ul style="list-style-type: none"> Social and Environmental Contract Clauses should be added in bidding documents such as the imperative and conditional agreement to clean up land before handing it over to either the Government/Local community.
Emergency Situations (Bush fires)	<ul style="list-style-type: none"> The project will fully engage the District Fire Service Department to continue with its training programmes on regular basis. Farmers will be encouraged to have fire belts around their farmlands to provide some protection
Social Issues	
Conflicts between crops and livestock farming	<ul style="list-style-type: none"> Community through its FBO will discuss and institute its own regulations to determine the movement of livestock in terms of space and time periods. Culprits will be fined appropriately
Farmer safety	<ul style="list-style-type: none"> Farmers will be encouraged to invest in appropriate protective gears like long boots to provide some protection against dangerous reptiles. WVG through MoFA will engage district MOH to ensure availability of medicine including anti snake venons to protect human life. Local communities and homes will be encouraged to provide some protection in the form of fencing or cleared boundary areas against straying dangerous animals and pests (rodents).

Local economy, employment and loss of livelihood	<ul style="list-style-type: none"> • If a site is acquired, all persons living off the site should be provided with livelihood assistance based on their current income levels or the project should assist such persons obtain new jobs immediately without any loss of income. Crop and animal husbandry is one of main source of local economy.
Deprivation of use of land	<ul style="list-style-type: none"> • Due process should be followed to establish the true owner of or rights holder over any land, be it family or stool land. Once established, the project should acquire the site by paying appropriate compensation. Recognition of customary land ownership structure that would require putting in measures (participation of community in consultation, dissemination of payment information) to ensure that compensation and lease payments are utilized by communities.
	<ul style="list-style-type: none"> •
Impacts on human health, safety and sanitation	<ul style="list-style-type: none"> • Adequate sanitary facilities will be available for workers and open range defecation will not be countenanced. • Safety boots and nose mask should be provided to workers in the poultry and crop sector • Environmental, Health and Safety (EHS) plan should be implemented. • All workers will be sufficiently trained in safe methods pertaining to their area of work to avoid injuries. • The project will conduct safety training for pesticide handlers and all agricultural workers. The training program will include handling of agro-chemicals, and what to do in the case of pesticide exposure.
Marginalization of women	<ul style="list-style-type: none"> • Access to credit schemes with focus on women • Provide women with labor and time saving machinery through the setting up of plant pools within reach such as districts and communities through the collaboration of the Ministries of

	<p>Agriculture, Trade and Industry, and Women and Children</p> <ul style="list-style-type: none"> • Access to improved variety of seeds and seedlings as well as fertilizers and other chemicals needed to improve agricultural methods, should be enhanced by making them affordable to women farmers. • Women farmers must be educated on new variety of crops that are being introduced as well as on other new and improved methods of farming through extension services. • More women extension services workers should be allocated to districts and communities where women farmers predominate as this will enhance their interaction, especially in areas where married women are traditionally barred from being friendly with other men. • Women's and adolescent time constraints need to be taken into consideration when designing programs for them, be it training or otherwise. • More women participation in consultations and separate women-only meetings to be established. Women- suitable timing for consultations so that attendance does not clash with other priorities.
Community disruption	<ul style="list-style-type: none"> • Schedule regular meetings with the community • Continuous engagement of communities using Participatory Rural Appraisal (PRA) methods • Implement grievance redress mechanisms
Increase in women work burden	<ul style="list-style-type: none"> • Education programs on time management should be instituted • Adequate compensation for work done by women

LIST OF ABBREVIATIONS

ESIA	Environmental and Social impacts Assessment
EPA	Environmental Protection Agency
ESMF	Environmental and Social Management Framework
GoG	Government of Ghana
MDAs	Ministries, Departments and Agencies
MOFA	Ministry of Food and Agriculture
NGO	Non-Governmental Organisation
WB	World Bank

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1. INTRODUCTION

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Use of bio-fortified crops in addressing malnutrition is recognized as an integral aspect of Ghana's agricultural system as it is linked not only with the nation's food and nutrition security but also with income generation and employment creation. It is estimated that Africa's daily consumption of fruit and vegetables remains at 100g/person/day as against the FAO² and WHO recommended daily intake of at least 400g/person/day (146kg/person/year).

It is against this backdrop that the improved feeding practices project is design to contribute to addressing malnutrition in 3 districts of Ghana.

The Project triggers two (2) World Bank Safeguards Policies namely:

- Environmental Assessment OP/BP 4.01;
- Pest Management OP 4.09; and

Since the Project is involving the production of vegetables, fruits and production of poultry on small scale. The specific beneficiary households and communities are unknown as at the preparation and its expected that these activities will consist of a number of small sub-projects, hence an Environmental and Social Management Framework (ESMF) has been prepared to identify the potential risks and document mitigation measures for any potential adverse impact on the project and the way to avoid, minimize or mitigate them. The ESMF also makes provisions for screening of sub-projects and guidance for further environmental assessment should that be required.

1.1 Purpose of the ESMF

The Environmental Assessment (EA) Regulations - Legislative Instrument (LI) 1652 provides the general framework for the assessment and management of environmental and social safeguards of developments/projects in Ghana. Specific information (land requirements, bio-

² Food and Agricultural Organization

physical features) on the Project will trigger the preparation of appropriate instrument. However, since the World Bank is providing the funds, the project is additionally obliged to comply with the World Bank Safeguards Policy on Environmental Assessment (OP/BP 4.01) which under this Project, an ESMF is deemed an appropriate tool for now because of the following features of the Project:

- A number of sub-components and components not yet clearly defined;
- Various developmental stages to be carried out in modules;
- Sub-components spread over a wide geographic area (at least 3 regions);
- Design of the sub-components and exact locations for implementation, as well as impacts are not yet determined at this stage.

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1.2 The Proposed Project

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The Project has four (4) key components as follows:

- e) Access to Innovative Nutritional Supplements

- f) Household-level Agriculture
- g) Nutrition Messaging
- h) Program Management and Administration, Monitoring and Evaluation and Knowledge Dissemination

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- Ministry of Local Government and Rural Development (MLGRD)

Potential Environmental and Social Impacts

The following major stakeholders were consulted for role identification and for potential environmental and social impacts likely to arise from the Project implementation:

- Environmental Protection Agency (EPA);
- Affected District and Municipal Assemblies;
- Ministry of Health (MoH);
- Project impact communities;
- Lands Commission (LC);
- Ministry of Food and Agriculture (MoFA);
- Forestry Commission/Wildlife Division (WD);
- Ministry of Environment, Science, Technology and Innovation (MESTI); and
- NGOs, CBOs

1.4 Approach for the Preparation of ESMF

The following processes were followed in preparing the ESMF for the improved feeding practices project for the first 1000 days;

(a) Data Gathering;

(b) Participatory Public consultations and discussions with relevant sector institutions, including non- governmental organizations (NGOs);

(c) Data collection and analysis, consisting of

- ✓ Literature reviews;
- ✓ Environmental and Social screening and scoping studies;
- ✓ Determination of potential impacts;
- ✓ Identification of impacts mitigation measures;
- ✓ Preparation of Environmental and Social Management Plan; and
- ✓ Preparation of sub-component guidelines;

(d) Consultative Workshops;

(e) Review of comments from stakeholders; and

(f) Preparation and Submission of reports

1.5 Description of Improved Feeding Practices for first 1,000 Days Project

Improved Feeding Practices for first 1,000 Days is a project World Vision Ghana (WVG) is proposing to implement to address the problem of nutritional deficiencies among the rural poor. The project envisages using a holistic approach that integrates the deployment of innovative nutrition specific and nutrition sensitive interventions reaching the poorest populations in Northern, Middle Belt, and Southern Ghana. This will increase and sustain the intake of micronutrients and amino acids / protein, in particular during fetal and early childhood development by targeting pregnant and lactating women and children aged 6 to 23 months with proven, cost-effective interventions, including improved diet. Thus, the utilization of nutritional supplements, a market-based distribution model (sales through Village Based Entrepreneurs), bio-fortification, household backyard gardens, small animal rearing, social behaviour change communication (SBCC) and capacity building at the community level, will be pursued. The proposed grant activities will build on the lessons learned from other projects.

The project has the following as objectives;

1.6 Project objectives

The Project Development Objective (PDO) is to improve the feeding practices among targeted women of reproductive age (including pregnant and lactating women) and children under two (the so-called "first 1,000 days of life") in targeted project areas.

The project has four outcome indicators which are indicated below:

- (i) increase access to effective complementary feeding practices,
- (ii) increase knowledge of good nutrition practices,
- (iii) increase income of Village-Based Entrepreneurs (VBEs)
- (iv) improve dietary diversity at the household level.

1.7 Project interventions

The project consists of 4 main components:

- (i) Component 1. Improve Access to Innovative Nutritional Supplements
- (ii) Component 2. Household-level agriculture
- (iii) Component 3. Nutrition Messaging

(iv) Component 4. Program Management & Administration, Monitoring and Evaluation and Knowledge Dissemination

Project interventions

The project consists of 4 main components:

Component 1. Access to Innovative Nutritional Supplements (\$1.1 M)

This component aims to improve access to proven and effective nutritional supplements for women in the target communities through the development of an innovative, social, and sustainable business model. In particular, it is important to improve access to supplements that combine both micronutrients and macronutrients (amino acids/protein), providing the majority of the Recommended Nutrient Intake (RNI) for children 12-36 months. Nutritional efficacy studies demonstrate that this combination of protein/amino acids and micronutrients can be more effective in the reduction of stunting and anemia than micronutrients alone.

Women in rural areas have lower access to nutritional supplements for their children 6-23 months. While available in some provisional shops and kiosks, many women cannot access shops or afford these nutritional supplements. Therefore, using Village-Based Entrepreneurs (VBE) in remote areas to sell such nutritional supplements door-to-door, will allow mothers to more readily access nutritious products for their 6-23 month year olds, and thereby improve the regularity with which children meet the required nutrient Intake (RNI).

The activities to be financed in this component include:

a) Distribution Network through World Vision Regional Offices: WVIG will work with local manufacturers of nutritional supplements (with both micronutrients and amino acids) targeting children 6-23 months, and local transport service providers to distribute the supplement to the communities at the lowest cost to optimize sustainability of the distribution model.

b) Learning Exchanges: Working in partnership with other NGOs involved in the promotion of improved child nutrition, WVIG will implement a "train the trainer" approach to build the capacity of WVIG staff on the VBE approach, nutritional supplement messaging, pricing, etc. by which WVIG staff and partners will be better equipped to train VBEs, mother facilitators, male champions, etc. in the target villages in each of the three districts. In addition, WVIG will implement biannual learning exchanges with other NGOs, whereby WVIG staff will visit

project sites for other NGOs and vice versa, allowing WVIG to better leverage best practices based on learnings from other partners.

c) Village-Based Entrepreneurs (VBE) Training: WVIG will identify two VBEs from each of the 70 villages included in this project. The VBEs must be nominated by an established Village Savings and Loan Associations (VSLA) in the target communities and they must already be selling other products door-to-door in order to be eligible to add a nutritional supplement to their basket of goods. (VSLAs are a group of people who save together and take small loans from those savings. The activities of the group run in one-year cycles, after which the accumulated savings and the loan profits are distributed back to members. The purpose of a VSLA is to provide simple savings and loan facilities in a community that does not have easy access to formal financial services). WVIG staff will train the VBEs on the nutritional benefits of supplements with both micronutrients and amino acids as well as how to improve selling products door-to-door. It will also be important to provide training to the VBEs on business practices, business development, and marketing for microenterprises, as the ongoing financial viability of VBEs is necessary to ensure they continue to reach the mothers of the children beneficiaries with the greatest need. In the first year, all selected VBEs will receive the training; in the second year WVIG will re-train a select group of VBEs where needed; and in the third year, there will be a "refresher" training for all VBEs. This activity enables the empowerment of women to be engaged in income generating activities which will support their families' well-being. These VBEs will be able to increase access to nutritional supplements in the target communities through face-to-face interactions and direct sales.

In addition, WVIG will regularly inform the leadership of the relevant District Assemblies on project activities and updates at quarterly stakeholders review meetings. The Information Services Department of the Assemblies will be engaged to disseminate information on nutritional supplements targeting children 6-23 months and other interventions. Furthermore, the services of Business Advisory Centres (BAC) of the Ministry of Trade and Industry in each district, whose mandate is to assist in strengthening Small Scale Industries, will support the VBEs through advice, financial support, and skills and management training.

d) Test the use of a “Solidarity Fund”: As the target beneficiaries for this project are among the most vulnerable and poor households, it will be important to set up a sustainable mechanism to ensure all households have not only physical access to nutritional supplements, but also financial access. Household income may fluctuate across seasons (and from week-to-week), limiting some families’ ability to purchase nutritional supplements for their 6-23 month old children on a regular basis. Therefore, WVIG will work with local communities to test the use of a “solidarity fund,” which mothers can access for temporary support, in the event that they cannot afford to purchase nutritional supplements. The aim of this fund will be to provide a safety net to the most vulnerable households, allowing regular access to effective nutritional supplements for all children in the target communities. During project implementation, WVIG will design and test this mechanism, with a focus on sustainability, local ownership, and accountability. Over the course of the project, the design of the “solidarity fund” may be adjusted to incorporate lessons learned across the various communities.

Component 2. Household-level agriculture (\$0.8 M)

World Vision Ghana has established capacity in bio-fortification programming and developed a package of interventions which helps farmers produce bio-fortified crops, which directly contributes to the well-being of children (reaching their nutritional needs, enabling parents to pay for school fees, ensure household food security). WVIG will work in collaboration with the Ministry of Food and Agriculture and the International Potato Centre (CIP) to support household agriculture (vegetable gardens using bio-fortified seeds, fruit trees, and chickens). Implementation experience will be used to enrich the project.

The activities to be financed in this component include:

a) Provision of Inputs: WVIG will procure and provide "starter" crops and poultry to approximately 15 households in each village (1,050 households across the three districts), based on the level of interest. Priority will be given to the most vulnerable households, mother-to-mother support groups, and VSLAs. These inputs (fertilizers and vaccinations) will be provided to households by VSLAs to promote dietary diversity for improved nutrition, targeting the children in each of these families. With these inputs, farmers will produce a range of products both for domestic consumption as well as for sale in local markets. It is expected that as the income levels of households improve over the life of the project, the

farmer households will be in the position to procure these increase their investment in the purchase of agriculture inputs. The following inputs will be provided at the start of the project.

- i. **Poultry:** WVIG will purchase chicken layers from local farmers and private entrepreneurs to be given to selected households (sometimes day-old chicks will be imported from outside Ghana, including some from Europe). These chickens will introduce protein in the household diet through egg and meat consumption. Moreover, participating households will be able to bolster their income by selling excess egg production in the local market. Based on prior experience in other regions, WVIG has found that giving 40 chickens to a single household has successfully resulted in both increased protein consumption as well as increased sales of egg sin the local market, while providing less than 5 chickens has had no impact. Therefore, in this project, WVIG will provide 20 chicken layers (and necessary roofing materials) to each household to test if this "starter" input will be sufficient to drive health and income impact. Beneficiary households will take care of feeding and vaccination of birds throughout the life cycle of the project.
- ii. **Orange Fleshed Sweet Potato (OFSP):** WVIG will purchase seeds of bio-fortified OFSP from the International Potato Centre and will collaborate with breeders to multiply and sell OFSP seeds and vines. As OFSP is different than other sweet potato varieties most households are used to, WVIG will provide three buds of OFSP for free to selected farmer households. Beneficiary households will also provide other farm inputs such as fertilizers, agro- chemicals as their contribution. Through OFSP production, households will increase consumption of bio-fortified foods, and will also be able to sell OFSP in the local market. Moreover, farmers participating in this program will be encouraged to "pay it forward" and provide new vines to other farmer households, and so on, creating a multiplier effect. Initially they will give to other farmers for free, but then after mobilizing other farmers they will begin selling on their own, approximately a year later. Households who receive bio-fortified seeds will be supported to plant off-season, targeting a bigger market (bio-fortified seed have a longer growing season, allowing farmers to access the market sooner and longer, thereby increasing their market share).

- iii. **Fruit Trees & Moringa:** WVIG will procure fruit tree (citrus and mango) and Moringa seedlings from local entrepreneurs and provide them to the selected farmer households. Similar to the system designed with the OFSP, direct beneficiaries will be asked to "pay it forward" by transferring planting material after harvest to two other farmer households, thereby increasing the overall number of beneficiaries. While the fruits trees may not fruit during the project period, households will be encouraged through education to consume locally available micronutrient-rich fruits. This is expected to result in behavior change. The availability of fruits beyond the project period from trees supplied to households, will in effect sustain efforts at increasing household micronutrient-rich foods consumption in particular and dietary diversity as a whole.

b) Market Development: In addition to provision of inputs, WVIG and its partners will work to promote the use (and purchase) of certain crops to support the development of a market for these products. People demand certain crops when they value them and understand the value it will add to them, their families, and communities. In this regard, WVIG and its partners will communicate and promote the value of the bio-fortified crops, animal sourced foods, and other fruits and vegetables (importance of the crops for the nutritional benefits, income, and food security). Mass media such as radio and Community Theater, and other channels will be utilized to propagate the message of buying / planting seeds, recipes for the crops (for example, MoFA has developed and will promote recipes for OFSP. Promoting these recipes will help increase uptake of OFSP consumption, which will drive demand for further OFSP production), and benefits of consuming improved crops including on farm. More specifically, these sub-activities include:

- i. **Developing seed supply chain:** WVIG will work with farmers to develop reliable seed systems for vegetables, fruit trees, OFSP, including the development of seed banks. The seeds from the seed banks will be distributed to other farmers based on the readiness of farmers to produce the relevant crops. The crops from the seeds will be used for consumption and sales.
- ii. **Linking farmer households to other necessary inputs:** Working in partnership with Ghana's Ministry of Food and Agriculture (MoFA), input dealers, Farm Radio International, village-level Unit Committees, and CIP, WVIG will educate farmers on supplementary the key inputs needed such as special fertilizer for OFSP or animal feed

and medications for poultry. In addition, WVIG and its partners will tell farmers where they can buy these supplementary inputs, such as at local markets, agricultural depots, etc.

- iii. **Marketing and promotion:** CIP will train WVIG and its partners (MoFA, Farm Radio International, agriculture extension workers, etc.) on cultivation and distribution of OFSP, and in turn, WVIG and its partners will promote and advertise bio-fortified seeds and OFSP in the community to help increase farmers' sales in weekly local markets. In addition, WVIG will work with Farm Radio International and village-level Unit Committees to leverage community networks (e.g., VSLAs) to further market these crops and processed foods using these crops, coupled with nutrition education. More specifically, Farm Radio International will support Behavior Change Communication (BCC) interventions including formative research, radio station engagement, capacity development, weekly interactive radio series with platforms such as VSLA, production and broadcast of radio spots, program monitoring and quality control. It is expected that demand for OFSP and market avenues will be created through these interventions. In-depth evaluations using an experimented design have shown that participatory radio strategy leads to increased knowledge, resulting in about 20% of the regular listeners introduce new techniques, approaches in their business and farming practices.

c) Farmer Training: WVIG will partner with MOFA personnel to train 1,050 farmers on marketing of the crops as well as saving some production for on-farm consumption by his/her own family, including young women and children. These trainings will be held in year 1 and 3 of the project. These trainings will be reinforced through monitoring visits by extension officers. Similarly, WVIG will communicate via radio, Community Theater, and other channels on when to buy and plant seed, recipes for, and the benefits of eating OFSP, eggs, fruits and vegetables. WVIG will work with MOFA, Farm Radio, and village-level committees to conduct farmer field days and taste-tests to generate interest in production, marketing, and on-farm consumption. Farmers will also be trained on appropriate use of pesticides and organic farming.

Component 3. Nutrition Messaging (\$0.4 M)

To drive behavior change in mothers and children less than five years old, WVIG will complement the specific nutrition interventions of this project with promotion of GHS-approved health and nutrition messages across the three districts by mobilizing community members in support of the nutrition behavior change communication in addition to the Ghana Health Service's (GHS) supported community health workers (HWs). WVIG staff will train community leaders who will then go on to train and communicate these key messages back to others in their villages, having a multiplier effect. Based on previous nutrition projects, it is evident that to affect behavior change and achieve results, nutrition interventions must be coupled with effective communications. Through sustained message promotion, this component will educate community members and improve uptake and compliance of nutrition best practices such as exclusive breastfeeding, timely introduction of complementary foods, and dietary diversity.

The activities to be financed in this component include:

a) Communication Tools: WVIG will work to create a strong and lasting understanding of the need to diversify diets to improve micronutrient as well as general nutrition status of children under five, but with a particular focus on children 6-23 months, and women of child-bearing age. Based on new health and nutrition protocols from GHS, WVIG will design and distribute GHS-approved nutrition education materials (posters, counseling cards, radio adverts and other teaching aids) promoting dietary diversity and the importance of combined micronutrient/macronutrient powders. These will include variations for the target members of the community such as mother-to-mother groups, male champions, etc. These targeted community members will use the same communication tools in groups organized at the village level, ultimately targeting caregivers (mothers of children less than five years old). Caregivers, therefore, will be the end recipient of these key messages at the point of distribution and at community fora such as durbars and religious gatherings.

b) Train Mother to Mother Support Group Facilitators: WVIG staff will select and train 200 "mother facilitators" across Kassena Nankana, Sekeyere East, and Kintampo South districts. WVIG will provide the mother facilitators with nutrition education for pregnant and lactating women, who will in turn relay the message to women groups in their villages. Each mother facilitator will lead a group of 25 mothers in their village. These mothers will also

share and promote the GHS-approved messages to other women and mothers in the villages. WVIG will start training the mother facilitators with two to three high impact nutritional messages and gradually increase the number of messages every two weeks. Topics for nutrition messages include Infant and Young Child Feeding (IYCF) practices, water, sanitation and Hygiene (WASH,) use of nutritional supplements, dietary diversity, child development, bio-fortified crops, etc.)

c) Train Men Support Groups: Similar to the model of the mother-to-mother support groups, WVIG will select and train approximately 60 "male champions" across the three project districts (assuming 85% participation rate across the 70 villages). While some male individuals currently advocate and support child nutrition activities in some communities, they do not currently work in groups and are not supported or recognized for their contributions. This project will therefore facilitate the establishment of these more formalized groups in communities to support maternal and child nutrition interventions. WVIG will engage these men in discussions on negative sociocultural nutrition practices, and the male champions will in turn lead groups of 25 men in their communities, encouraging other men in the community to improve their nutrition practices. Enabling community dialog regarding gender and nutrition sensitive decision making (e.g., men's role in household on spending decisions, diet diversity, etc.) will reinforce the nutrition messages and create a standard throughout the community that will eventually serve as the social norm. In addition, male champions will be trained on key nutrition messages. Posters targeted for fathers, and counseling cards will be used to stimulate dialog among men within targeted communities.

d) Monthly Growth Monitoring and Promotion (GMP): In coordination with GHS's ongoing efforts, WVIG will further support community-level GMP to monitor children's growth trends in the 70 villages. Based on the GMP results and trends, WVIG will be able to better tailor the GHS-approved messages being promoted through the mother- to-mother and male champion support groups. In addition, WVIG will partner with community-based growth promoters and health volunteers to broaden GMP coverage by filling GHS monitoring gaps in remote areas where mothers have difficulty accessing health clinics. WVIG will train health volunteers, and provide materials, to undertake the GMP that GHS clinics typically do so that the volunteers can provide these services in areas where GHS clinics don't exist. The training

will cover growth monitoring (weight and other survey questions) and on nutrition messaging (complementary feeding practices, breastfeeding, use of nutritional supplements, dietary diversity, etc.). In addition, WVIG will provide logistics support to the health volunteers, providing transportation support and equipment (e.g., scales) in order to access the harder to reach communities. Malnourished children will be referred to existing Community-Based Management of Acute Malnutrition (CMAM) services.

e) Community Nutrition Education: In addition to the training received through Component 1, VBEs will receive broad nutrition education with approved Ghana Health Services (GHS) messaging. In each of the 70 villages, WVIG will conduct cooking demonstrations which will use local and affordable ingredients to show mothers how to improve the nutritional intake of their family by putting into practice new cooking methods, using nutritional supplements that include both micronutrients and amino acids. In addition, WVIG will work with partners (including GHS, community health workers, village-level committees, and Farm Radio International) to deliver community nutrition education. The key messages will focus on behavior change communications to present the value of improved dietary diversity, nutritional supplements, biofortified foods, etc. On a quarterly basis, WVIG and its partners will promote community level nutrition education by using various methods including community theaters and dramas, song competitions, posters and other advertisements.

Component 4. Program Management and Administration, Monitoring and Evaluation and Knowledge Dissemination (\$0.5 M)

Integral to this project are a number of activities specifically designed to generate evidence to improve the potential of the project to have impact, and track its progress in doing so. These activities include:

a) Program Management and Administration (PMA): This sub-component will support project management and oversight, and overall project coordination. WVIG will ensure project activities are implemented in a timeline fashion, coordinating across key stakeholders. In addition, WVIG will manage necessary reporting to the World Bank, JSDF, and Governments of Ghana and Japan. PMA will be conducted by WVIG project staff including one overall project manager, three project officers, and one finance officer

b) Monitoring and Evaluation (M&E): M&E for this project will include two sub-activities:

- i. **Performance monitoring;** WVIG (project manager and three project co-ordinators) will be responsible for ongoing project monitoring including tracking of inputs, activities and outputs to identify problems in the design or operations of the program in a timely fashion. In addition, WVIG will conduct training and mentoring sessions with beneficiaries for participatory monitoring.
- ii. **Independent evaluation;** An independent third party will be hired to measure and facilitate understanding of overall project impact on feeding practices during the first 1,000 days of life. Focus will be on both health impacts project outcomes. The independent evaluation will generate evidence that will facilitate the understanding of impact evaluation results, including the potential pathways by which the program may have had impact or factors related to implementation that may have impeded impact, using a program impact pathway approach. The impact evaluation design should compare change from before to after the program, accompanied by an attempt to rule out external factors through the process evaluation. The baseline and end-line surveys will be cross-sectional, population based, cluster sampled and representative of children 6 to 23 months for the program area.
- iii. **Knowledge Dissemination;** WVIG will conduct a dissemination workshop at the end of the project, whereby results will be demonstrated and lessons learned will be discussed and shared with key partners and stakeholders including donors, government (MoH and GHS), NGOs, etc.

2. POLICY, LEGAL, REGULATION AND INSTITUTIONAL FRAMEWORK

Relevant policies, legal, regulation and institutional framework relevant to the improved feeding practices project for the first 1000 days is summarised as follows:

2.1 National and Sector Policy Frameworks

2.1.1 Ghana National Environmental Policy, 2012

The Environmental policy seeks to ensure sound management of the environment and sustainable use of resources to avoid irreparable damage to the environment. Preparation of this ESMF and subsequent preparation of ESIA or PER for project activities, when necessary, are all geared towards achieving a sustainable management of the environment and are in line with this policy.

2.1.2 Forest and Wildlife Conservation Policy, 2012

This policy is aimed at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society. Interventions from the proposed project will be guided by this policy to ensure conservation of the indigenous uses of natural resources. Specifically, the policy will, among others, ensure that the country's permanent estate of forest and wildlife resources are managed and enhanced for preservation of vital soil and water resources, conservation of biological diversity and the environment and sustainable production of domestic and commercial produce. Project components and all sub-component activities are expected to be implemented in a manner that does not harm the nation's forest and its resources.

2.1.3 National Land Policy, 1999

The National Land Policy (1999) provides the policy framework, guidelines and action for land administration and land-use in Ghana including land conservation activities as identified under the components of the project. The Policy provides for the full recognition of protected area systems (PAS) and lands outside PAS for ecosystem maintenance and biodiversity conservation

2.1.4 Occupational Safety and Health (OSH) Policy of Ghana, Draft 2004

The OSH Policy statement (Draft, 2004) is to prevent accidents and injuries arising out of or linked with or occurring in the course of work, by minimizing as far as reasonably practicable, the cause of the hazards in the working environment and therefore the risk to which employees and the public may be exposed. The engagement of skilled and unskilled workforce at various stages of project implementation reiterates the relevance of the OSH Policy to the proposed project.

2.1.5 Food and Agriculture Sector Development Policy (FASDEP II), 2007

The revised policy (FASDEP II) emphasizes the sustainable utilization of all resources and commercialization of activities in the sector with market-driven growth in mind. It however targets fewer commodities for food security and income diversification, especially of resource poor farmers. Enhancement of productivity of the commodity value chain, through the application of science and technology, with environmental sustainability is emphasized and that makes the Policy very relevant to proposed project.

2.1.7 Riparian Buffer Zone Policy for Managing River Basins in Ghana, 2011

This policy is designed to provide comprehensive measures and actions that would guide the coordinated creation of vegetative buffers for the preservation and functioning of water bodies and vital ecosystems in Ghana. It recommends allowable distances or buffer zones around water bodies such as lakes, rivers, stream etc. of which the Project is expected to conform. The recommendations are as follows:

- Municipal reservoir shoreline protective buffer: 60 to 90 meters
- Major perennial rivers/streams: 10 to 60 meters
- Minor perennial streams: 10 to 20 meters;
- Important seasonal streams: 10 to 15 meters;
- Streams within forest reserves: 10 to 50 meters; and
- Wetlands: 30 meters around the perimeter as defined from the high water elevation.

2.1.9 World Bank Safeguards Policies

The proposed Project triggers two World Bank Safeguards policies and the requirements are

summarized in the table below:

Table2.1. Triggered World Bank Safeguards Policies

Triggered Policy	Safeguards	Requirements	Applicability to the Project
Environmental (OP 4.01)	Assessment	Screen early for potential impacts and select appropriate instrument to assess, minimize and mitigate potentially adverse impacts	An ESMF is required at project preparatory stage. Screening of project components and sub-component activities is mandatory during the project implementation stage and that should recommend the need for an ESIA or PER depending of the scale and characteristics of the sub-component activities.
Pest Management (OP 4.09)		Support integrated approaches to pest management. Identify pesticides that may be financed under the project and develop appropriate pest management plan to address risks	The Project is required to develop a Pest Management Plan

If policy discrepancy exists between the World Bank Safeguards Policies and the Ghana EPA Assessment Regulations, the more stringent of the policies applies.

2.2 Regulatory Framework

2.2.1 Environmental Assessment Regulations, 1999 (LI 1652)

The Environmental Assessment Regulations 1999 (LI 1652) enjoins any proponent or person to register an undertaking with the Agency and obtain an Environmental Permit prior to commencement of the project. The act further gives details of areas considered as sensitive for which undertakings or projects are not allowed.

2.2.2 Control and Prevention of Bush Fires Act, 1990 (PNDC 229)

This prohibits starting of bushfires intended for any purpose and provides for related matters. This requirement is in tandem with the prohibition of “slash and burn” activities being adopted by the Project. The provision also requires that the Project prohibits hunting of wildlife with fire on farmlands which may cause accidental fires.

2.2.3 Labour Act, 2003 (Act 651)

Section 118 (1) of this Act stipulates that it is the duty of an employer to ensure that every worker employed works under satisfactory, safe and healthy conditions. This Act runs concurrently with Act, 1970 (Act 328) and addresses the welfare of workers on the various investor farms. Persons who will be engaged as workers on farmlands and warehouses as a result of this Project are expected to comply with this Act.

2.2.4 Fire Precaution (Premises) Regulations, 2003 (LI 1724)

The Fire Precaution (Premises) Regulations 2003 (LI 1724) requires all premises intended for use as workplaces to have Fire Certificates

2.3 Institutional Framework

2.3.1 Ministry of Food and Agriculture (MoFA)

The Ministry of Food and Agriculture (MoFA) is the ministry responsible for the development and growth of agriculture and food security in the country. The primary roles of this ministry are the formulation of appropriate agricultural policies, planning and coordination, monitoring and evaluation within the overall economic development. .

2.3.2 Ministry of Environment, Science, Technology and Innovation

The Ministry of Environment, Science, Technology and Innovation exists to establish a strong, national scientific and technology base for accelerated sustainable development of the country to enhance the quality of life for all. The Environmental Protection Agency (EPA) is part of this ministry.

2.3.3 The Environmental Protection Agency (EPA)

The EPA was established under the Environmental Protection Agency Act (Act 490 of 1994) as the leading public body responsible for the protection and improvement of the environment in Ghana. It is responsible for enforcing environmental policy and legislation, prescribing standards and guidelines, inspecting and regulating businesses and responding to emergency incidents. It is responsible for issuing environmental permits and pollution abatement notices for controlling

waste discharges, emissions, deposits or others sources of pollutants and issuing directives, procedures or warnings for the purpose of controlling noise. The EPA has the authority to require an ESIA and is responsible for ensuring compliance with ESIA procedures.

2.3.4 Ministry of Local Government and Rural Development (MLGRD)

The Ministry of Local Government and Rural Development was established by an Act, 1994 (Act 462) and exists to promote the establishment and development of a vibrant and well-resourced decentralized system of local government for the people of Ghana to ensure good governance and balanced rural based development. The Metropolitan, Municipal and District Assemblies (MMDAs) of the three project regions will exercise local government administrative authority over the Project.

2.3.5 Public Institutions involved in Land Administration

The institutions include:

- Land Commission
- Land Title Registry
- Survey Department
- Land Valuation Board
- Department of Town and Country Planning
- Office of the Administrator of Stool Lands
- Ministry of Lands and Natural Resources

Customary land

Land owned customarily is governed by customary laws prescribed by the local community and therefore varies greatly from place to place. Allodial titles to stool and skin lands are vested in customary authorities and it is the highest right to ownership of land. Revenues from stool lands are administered by the Office of the Administrator of Stool Lands (OASL). Family land is vested in the head of the family, and is not subject to oversight by OASL. More details on Land acquisition will be provided in the RPF.

Public land

State lands have been compulsorily acquired by government for public purposes or in the public interest and administered by the Lands Commission. Vested land is customarily owned but vested in the government which manages it on behalf of the owner (e.g. stool)

3. ENVIRONMENTAL AND SOCIAL BASELINE CONDITION OF PROJECT AREAS

This section presents a description of the existing environment, comprising the bio-physical and socio-economic conditions of the proposed project area.

3.1 Methodology and Data Collection

Various techniques were applied for collecting data on the project environment. These included document review, institutional consultations, focus group discussions and field surveys of the existing environment. An account of the existing physical and biological environment and socio-economic conditions (ethnic groups, culture, economic activities, etc.) were assembled. These formed parts of the baseline information and used in the environmental analysis/assessment.

The description of baseline information relevant to the project covers:

- The project areas;
- Land use categories;
- Land acquisition and tenure system;
- Socio-economic;
- Cultural resources;
- Health;
- Natural resources;
- Wildlife and biodiversity;
- Climate;
- Air Quality;
- Hydrology of the Area;
- Physical environment.

3.2 General

The Republic of Ghana is located between latitudes 5° 36'N and longitudes 0° 10'E. It has a total border of 2,093 km, including 548 km with Burkina Faso to the north, 688 km with Côte d'Ivoire to the west, and 877 km with Togo to the east. It has a coastline on the Gulf of Guinea, part of the Atlantic Ocean, measuring 539 km. It has an area of 239,540 Sq km. The country is divided into 10 administrative regions and 170 districts. The country is characterized by fairly low relief with few areas of moderate elevation in the north and east. The land is generally 600 meters above sea level. Physiographic regions include the coastal plains, the forest dissected plateau, and high hill tops which are important ecological subsystems in a generally undulating terrain. At the southern and northern margins of the Volta Basin, there are two prominent areas of

highland – the Kwahu Plateau, and the Gambaga Escarpment. On the eastern margins of the Volta Basin is a relatively narrow zone of high mountains running in a south-west to north-east direction with the Akwapim, Buem, Togo Ranges registering the highest point (Mt. Afadjato) in the country.

Average rainfall over the country is about 1,260 mm/ year, but ranges from 890 mm/year in the coastal zone near Accra to 2,030 mm/year in the south-western rainforests. The rainfall is bi-modal in the south-western forest zone, giving a major and a minor growing season; Except for the south-western zone, the reliability of the rainfall, particularly after crop germination, is a major factor affecting crop growth and agriculture in general.

Ghana is drained by three (3) main river systems comprising the Volta, South western and Coastal River Systems. The Volta side of Ghana occupies nearly two thirds (70%) of land area of Ghana, the south western 22% and the minor coastal 8%. Global water resources are estimated at 53.2 km³ per year, consisting of 30.3 km³/year of internally produced water resource, and 22.9 km³/year of runoff from other countries.

3.3 World Vision International, Ghana, Administrative Regions

World Vision International, Ghana has two administrative regions namely; the Northern, and Southern Operations. The project will specially be implemented in Kintampo South Cluster and Kassena-Nankane Cluster which falls under Northern Operations, and Sekyere East Cluster under the Southern Operations.

Project Location and Beneficiaries

The main target groups are women of reproductive age i.e., 14-49 years (including pregnant and lactating women) and children under two (the so-called "first 1,000 days of life") in Kintampo South, Kassena Nankana and the Sekyere East Districts of the Brong Ahafo, Upper East and Ashanti Regions of Ghana respectively.

3.4 Kintampo South District

Location and size

The District lies within longitudes 1°20' West and 2°10' West and latitude 8°15' North and 7°45' North. The District shares boundaries with the Kintampo North Municipality to the north, the Nkoranza North and Techiman North Districts to the South, the Atebubu and Pru Districts to the East and to the Wenchi Municipality to the West. It covers a land area of 1,513.34 km² and comprises about 122 settlements (District Assembly's survey).

Population size, structure and composition

The population of Kintampo South District, according to the 2010 Population and Housing Census, is 81,000 with more males (52.0%) than females (48.0%), giving a sex ratio of 108.4. Nine in every ten (91.1%) of the population reside in rural areas while 8.9 percent are in urban areas.

Relief and drainage

The District falls within the Voltaian Basin and the Southern Voltaian Plateau physiographic regions. The Voltaian Basin is made up of flat-bedded rocks and is extremely plain with rolling and undulating land surface with an elevation of between 60-150 metres above sea level. The Southern Voltaian Plateau occupying the Southern and South-eastern part of the district is characterized by series of escarpments. The major rivers are Pumpum, Oyoko, Nante and Tanti. These rivers flow to join the Black Volta . Most of the rivers are seasonal in nature and thus fluctuate in volume. This feature of the rivers makes them unreliable for irrigation purposes with the exception of Nante, which offers opportunities for irrigation.

Climate

The Kintampo South District experiences a Wet Semi-equatorial climate. This is because the District lies in the transitional zone between the Wet Semi-Equatorial and Tropical Continental climates. Like other parts of the country, the District experiences two seasons namely wet and dry. The mean annual rainfall is between 1400mm-1800mm. The Wet season shows double maxima rainfall pattern (i.e. major and minor). The mean monthly temperature in the District is between 24°C in August and 30°C in March. These conditions create sunny conditions for most part of the year.

Vegetation

The vegetation of the District falls under the Woodland Savannah Zone. However, due to its transitional nature, the area does not exhibit typical savannah conditions. The District has an extensive forest reserve of about 150.50km² known as the Bosomoa Forest Reserve. The tree species found in the reserves include, Teak, Odum, Wawa, Senya, Manana and Mahogany, which have given rise to timber extraction. These reserves can be found in the areas around: Krutakyi, Jema, Ampoma, Anyima, Nante and Krabonso.

Agriculture

About 90 percent (88.3%) of households in the district are engaged in agriculture. Nine out of ten households (90.5%) in rural localities and 70.0 percent households in rural localities are engaged in agricultural activities. An overwhelming majority of households (98.2%) are involved in crop farming and livestock rearing (42.5%). Poultry (57.4%) is the dominant animal reared in the district.

Farming Systems

The various farming systems / methods practiced by the farmers in the district include; shifting cultivation, continuous cropping, mixed cropping, mono cropping, inter cropping, and land rotation and bush fallows. The major crops cultivated include yam, cassava, cocoyam, rice, potato, pepper, plantain, garden eggs, okro, watermelon, ground nut cowpea, and other tree crops such as cashew, mango. There are also non-traditional farming activities that are being practiced by the farmers. These include grass-cutter rearing and bee-keeping.

Soil

The soil type identified in the District is sandy loam to clay loam and gravels which are suitable for the cultivation of subsistence and cash crops. Also, the savannah ochrosol found in the District is more supplied with organic matter and nutrients. Generally the soil aids the cultivation of tubers, cereals, teak, cash crops, vegetables and legumes. Again the availability of grasses and shrubs make the area favourable for rearing of all kinds of livestock.

3.5 Sekyere East District

Location and Size

The District is located in the North-Eastern part of Ashanti Region, approximately between Latitude 6°45''- 6°55'' North and Longitude 1°15''-1°25''West. It shares boundaries with Sekyere-Kumawu District to the North-East, Asante-Akim Central Municipal to the South-East, Ejisu-Juaben Municipal to the South-West, Sekyere South District to the west and Asante Akim North District to the East. It covers an estimated land area of about 239.1square kilometres and has about forty-two (42) major settlements of varying sizes.

Population size, structure and composition

The population of Sekyere East District, according to the 2010 Population and Housing Census, is 62,172 representing 1.3 percent of the region's total population. Females constitute 52.5 percent and males represent 47.5 percent. More than half the population (54.1%) reside in the urban areas compared to 45.9 percent in the rural areas.

Landscape and Drainage

The landscape of the District is generally undulating with an average elevation of between 100-150 meters above sea level. The highest point of the District is around the Ahinsan area. The Oworam, Gyemire and Subiri rivers run through the District. The Anum River in the South-Western part of the District forms the boundary between the District and the Asante Akim Central District

Climate

The climatic conditions in the District conform to the general conditions that prevail within the middle belt of Ghana. The District experiences monthly mean temperature around 26°C, although some areas record lower figures. Maximum temperatures are between 29°C and 31°C are in March and April, while minimum temperatures of 21°C and 23°C are experienced in August. Double maxima rainfall is experienced annually. The major season starts in April and ends in July, while the minor season begins in September and ends in early November. June is the wettest month of the year. Humidity is high during the wet months of the year and low during the dry months. Relative humidity within the District averages about 80 percent

Agriculture

About 48.9 percent of households in the district are engage in agriculture. In the rural localities, seven out of ten households (70.6%) are agricultural households while in the urban localities, 31.9 percent of households are into agriculture. Most agricultural households in the district (90.9%) are involved in crop farming. Poultry (chicken) is the dominant animal reared in the district

Vegetation

The District has a semi deciduous forest, which supports the growth of big and tall trees of different kinds such as Wawa, Sapele, Odum, Mahogany etc. Uncontrolled bush burning, particularly in the smaller settlements is fast threatening the District's bio-diversity, thus putting the fertility of the soil at risk and reducing potential resources for future generations as the vegetation is fast degenerating

Soil Types

Forest ochrosols

Farming System

The major farming systems in the district are:

Mixed farming / cropping

Mono cropping – Plantation crops

3.6 Kassena Nankana East Municipality

The Kassena Nankana Municipal was upgraded by LI 2106 from the Kassena Nankana District which was established in 1988 by LI 1855. It is one of the thirteen (13) districts/municipalities in the Upper East Region of the Republic of Ghana. The municipality has Navrongo as its political and administrative capital. The municipality lies approximately between latitude 11°10' and 10°3' North and longitude 10°1' West. The municipality shares boundaries to the north with Kassena-Nankana-West District and Burkina Faso. To the east, it shares boundary with Kassena-Nankana West District and Bolgatanga Municipal, to the west with Builsa District and to the south with the West Mamprusi District in the Northern Region

Population size, structure and composition

The population of Kassena Nankana East Municipality, according to the 2010 Population and Housing Census, is 109,944 representing 10.5 percent of the region's total population. Males constitute 48.8 percent and females represent 51.2 percent. About 72.7 percent of the population live in rural localities.

Relief and drainage

The Municipality is generally low-lying. The landscape is generally undulating with isolated hills rising up to about 300 metres above sea level in the western parts of the municipality. Notably among these hills include Fie (280 metres), Busono (350 metres) and Zambao (360 metres) above sea level. The drainage system of the municipality is constituted mainly around the tributaries of the Sissili River – Asibelika, Afumbeli, Bukpegi and Beeyi

Climatic Conditions

The climatic conditions of the Kassena Nankana Municipality is characterized by the dry and wet seasons, which are influenced mainly by two (2) air masses – the North-East Trade winds and the South-Westerly's (Tropical Maritime). The harmattan air mass (North-East Trade Winds) is usually dry and dusty as it originates from the Sahara Desert. During such periods, rainfall is virtually absent due to low relative humidity, which rarely exceeds 20 percent and low vapour pressure less than 10mb. Day temperatures are high recording 42° Celsius (especially between February and March) and night temperatures could be as low as 18° Celsius.

The Municipality experiences the tropical maritime air mass between May and October. The average annual rainfall is 950mm

Agriculture

In the municipality, 82.7 percent of households are engaged in agriculture. In the rural localities, 93.1 percent of households are agricultural households while in the urban localities, 56.8 percent of households are into agriculture. Most households in the Municipality (96.1%) are involved in crop farming with Poultry (chicken) as the dominant animal reared in the municipality. Agriculture is the dominant economic activity in the municipality. The major crops grown are millet, sorghum, rice, groundnuts, leafy vegetables, cowpea, bambara beans, okro, cotton, tomatoes and onions. Livestock reared in the municipality include cattle, sheep, goat, pigs, guinea fowls, fowls and other domestic animals like donkeys. Fish farming involving Tilapia and Mudfish are quite significant. Farm sizes are quite small and yields are very low as compared to other parts of the country due in part to poor soils and unreliable rainfall. There are few dams and dugouts which are being used for dry season farming. This has implications for food insecurity

Vegetation

The Kassena-Nankana Municipality lies within the Guinea Savannah woodlands. The Municipality is covered mainly by the Sahel and Sudan-Savannah types of vegetation comprising mainly of the savannah grassland with short trees and thumps. Common trees found are Dawadawa, Baobab, Sheanut and Mango.

Soil

Two main types of soil are present in the municipality namely the Savannah ochrosols and groundwater laterite. The northern and eastern parts of the municipality are covered by the Savannah ochrosols, while the rest has groundwater laterite. The Savannah ochrosols are porous, well drained, loamy, and mildly acidic and interspersed with patches of black or dark-grey clayey soils. The groundwater laterites are developed mainly over shale and granite and cover approximately sixty percent of the municipality's land area. This soil type is suitable for the cultivation of many crops, especially rice and vegetables and hence accounts for the arable land sites including most parts of the Tono Irrigation Project sites where both wet and dry season farming activities are concentrated (KNMA, 2010).

Rainfall Pattern

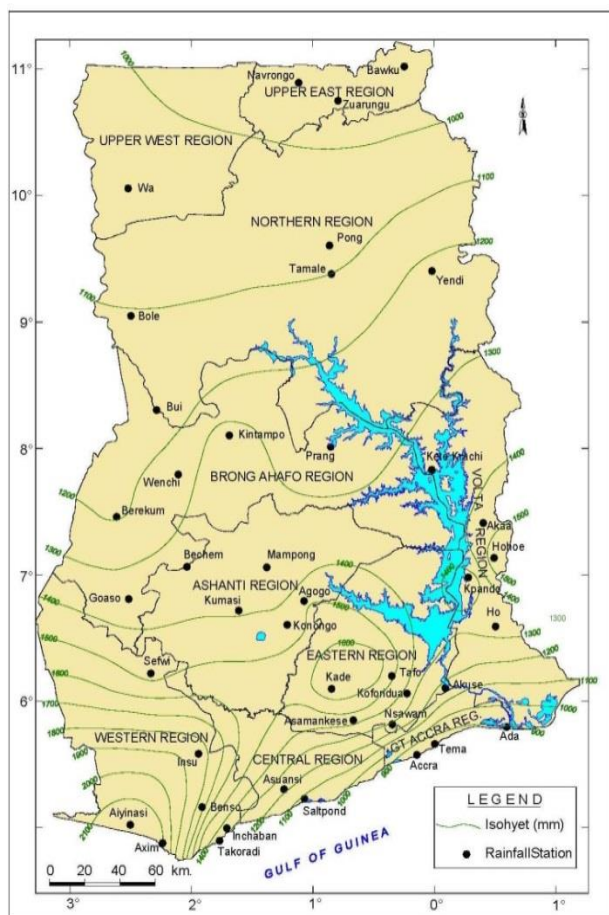


Figure 1: Mean Annual Rainfall (mm)

Common Fauna in the Project District

Type	Specie(s)
Vertebrates	Mole rats, rats, porcupines, goats, cattle, guinea fowl, monkeys. Hedges or thorn fences can help protect sweet potato against pests such as goats, cattle, wild pigs, and porcupines. Domestic animals should be tethered during the dry season to prevent them grazing on planting materials, conservation and Multiplication plots. Mole rats burrow through ridges and mounds feeding on the sweet potato roots. They often spoil more roots than they actually eat. Signs of their damage and presence include: small mounds of freshly dug soil, sweet potato vines being pulled back down into the soil, holes in the sides of ridges or mounds. Rodent control works better if done on a large scale, so farmers should work with their neighbours to combine forces.

4. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND SIGNIFICANCE

4.1 Methodology and Impact Identification

The potential environmental and social impacts likely to arise as a result of the Project were identified by matching the project components with the surrounding environmental and socio-cultural resources. This section presents both the likely positive and negative impacts that can arise from the Project. Information regarding the social, cultural, natural and coastal resources, etc, was sourced from related literature, visits to the project site and consultation with relevant stakeholders.

Stakeholders were identified using a stakeholder identification matrix and were involved in the identification of the potential impacts of the project. The key stakeholders include:

- Lands Commission;
- Environmental Protection Agency (EPA);
- Affected District Assemblies;
- Ministry of Health (MoH);
- Project catchment communities;
- Ministry of Food and Agriculture (MoFA);
- Forestry Commission/Wildlife Division (WD);
- Ministry of Environment, Science and Technology and Innovation (MESTI); and
- NGOs and CBOs.

4.2 Expected Project Activities

The potential interactions between various project activities and environmental and social receptors are identified for analysis. At the project phase, these will be evaluated against site-specific conditions using information gathered from existing baseline conditions and site observations. The interactions/project phase activities will be ‘screened out’ if the potential for impact does not exist or is negligible.

The potential Project facilities and associated activities are summarized in the table below. The activities are later assessed for their potential impact on the physical and social environment.

Table 4.1 . Potential Project Areas and Associated Activities

Potential Project Areas	Associated Project and Activities
Farm field establishment	Development of agricultural fields; (vegetable and poultry production) Waste handling and disposal

4.3 Project activities and potential environmental and social impacts

The project is associated with many positive impacts which include:

- Improved Soil conservation
- Water resources conservation
- Increased farm incomes from crop output
- Food Security
- Poverty alleviation
- Raise rural income
- Improved nutrition
- Employment creation for community members
- Empowerment of farmers

Improved National Economy

Operational Phase The Project is expected to increase in vegetable production, cashew production in Ghana. Currently most of the locally produced vegetables are done under rain-fed without irrigation systems which cause a significant drop in production volume during the dry season. It is estimated that the Ghanaian vegetable farmers are only producing at 50 percent of attainable yields because of the lack inefficient water conservation systems and improved inputs creating a country supply and demand deficit. In rainy seasons where there is usually product glut, farmers experience high post-harvest losses due to lack of processing and storage facilities. External Trade Statistics of Ghana show that large sums of money are spent each year on importing vegetables, fruits to augment local production.

The export of fresh vegetables and fruits to generate foreign income for the country can be a lucrative enterprise and this has been demonstrated by a few but established exporters in the country. As the Project seeks to boost vegetable production by addressing constraints facing the industry, it is expected that entrepreneurs will capitalise on the opportunities to supply for both local and external markets which will eventually contribute to improving the national economy.

Improved Food Security Profile

Operational Phase

- 4 Ghana is generally described as food secure. However, the nation's current vegetable and fruit production is still 50% below attainable production level and the consumption of the produce, like many other African countries, is about 25% of FAO and WHO recommended daily intake amount. The Project will add to the food stocks in the country and contribute to government's initiatives of securing food and nutritional needs of the country.

Improved Environmental Management

Operational Phase

The introduction of scientific methods of farming through sustained extension services and capacity building programmes will ensure good agricultural practices among beneficiary farmers. The effect of these reforms will be minimal land erosion, improved fertility and ultimately higher yields and productivity. The expected output per hectare of the selected crops will compare favourably with achievable yields. This makes the project impact significant localised and long term.

Employment Opportunities and Improved Income Profiles

Production of Vegetables and Poultry

Various farmers benefiting under the project will create employment for so many people because of their farming activities. Again, the Operationalization of project activities will create so many opportunities which will lead to rapid influx of migrants into the project area. Women and men engaged in trading activities in the communities within the project zone will experience increase in their daily sales. The existing low levels of income will improve during the operational phase of the project. More importantly, the opportunity of using scientific methods of farming and animal husbandry will improve agricultural output and productivity. The effect of these interventions is to improve income profile of beneficiary farmers.

4.3 Determination of environmental and social significance of impacts

The actual impact significance rating depends on a lot of factors, including:

- the magnitude of the impact;
- the sensitivity and value of the resource affected;
- compliance with relevant laws, regulations and standards;
- views and concerns of stakeholders;
- overall worker comfort; and
- Likelihood of occurrence.

4.3.1 Categories of impact significance

A ‘negligible or nil impact’ or an impact of negligible significance is where a resource or receptor will not be affected in any way by a particular activity, or the predicted effect is deemed to be imperceptible or is indistinguishable from natural background levels.

A ‘minor impact’ or an impact of minor significance is one where an effect will be experienced, but the impact magnitude is sufficiently small and well within accepted standards, and/or the receptor is of low sensitivity/value. In such instances, operational practices can address such impacts.

A ‘moderate impact’ or an impact of moderate significance is where an effect will be within accepted limits and standards. Moderate impacts may cover a broad range, from a threshold below which the impact is minor, up to a level that might be just short of breaching an established (legal) limit. In such cases, standard construction practices can take care of these impacts but mitigation measures may also be required.

A ‘major impact’ or an impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. In such cases, alternatives are required to address such impacts otherwise mitigation measures should be adopted with strict monitoring protocols. The above classification used in this ESMF is largely subjective, and may be overruled by new site specific issues or information and detailed project activities not captured in this framework.

Some of the major potential environmental issues/impacts arising from project activities are listed in the table below.

Table 1.2 Potential Environmental and Social Impacts and Significant Level

No	Project and Associated Activities	Potential Environmental and Social Impact/Issues	Environmental significance
1	Production of fruits for household consumption and income- (pawpaw, cashew, moringa, soar sop)	Burning of thrash/garbage can lead to environmental pollution and soil erosion; Destroy vegetation flora & fauna, expose land surface to wind & run-	Minor Minor;

		off	
		Farming activities can destroy soil micro-organisms and induce soil erosion & nutrients loss	Minor
		Activities can lead to destruction of vegetation (trees, forests)	Minor
		Losses can occur through risk at torage	Minor
		Losses can occur through pest and disease infestation	Minor
		Soil and land degradation;	Minor
		Application of agro chemicals can lead to groundwater pollution;	MinorMinor
		Occupational health and safety issues;	Minor
		Adversely impact of climatic conditions can have effect on project activities	Moderate
		Farms can be destroyed when constructing access roads to cart farm produce	Moderate
		Increased demand on fuel wood as the major source of energy can lead to devastation of the forest	
		Use of chemicals to induce ripening of crops can have harmful effects on human health	

2	Production of Orange Fleshed Sweet Potato and other vegetables for household consumption and incme (spinach, carrot, cabbage, pepper),	<p>Burning of thrash/garbage can lead to environmental pollution and soil erosion;</p> <p>Water pollution can occur as result of spraying ;</p> <p>Soil organisms can be destroyed through burning Destruction of flora and fauna habitat;</p> <p>Soil and land degradation due to human activities;</p> <p>Groundwater pollution as a result of application of agrochemicals;</p> <p>Occupational health and safety issues;</p> <p>Use of chemicals to induce ripening of crops can have harmful effects on human health</p> <p>Vegetation destroyed through construction of access roads/ tracks</p> <p>Farms/crops can be destroyed when constructing access roads</p>	<p>Minor</p> <p>Minor;</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p>
	Fertilizer application to crops	<p>Improper application of fertilizer can increase PH of the soil</p> <p>Application of fertilizer in rainy season resulting in ineffective targeting can result in increased runoff and uptake by soils and water bodies</p> <p>Increased application of fertilizer is likely to result in soils pollution and water bodies</p>	<p>Minor</p> <p>Minor</p> <p>Minor</p>

		<p>Use of highly toxic fertilizers can lead to explosion and generation of heat to plants, animals and humans</p> <p>Minor</p> <p>Improper use of fertilizers will lead to contamination by high exposure, no precautionary measures leading to health impacts</p> <p>Moderate</p> <p>Fertilizers pollute soil and water, can make soil saline, affect plant growth if not well applied</p> <p>Minor</p> <p>Details are included in the PMP commissioned separately as required by OP4.09</p> <p>Minor</p>	
	Herbicides and Pesticides application to crops	<p>Increased application of agro-chemicals is likely to result in soils / land degradation , air pollution and water bodies, Harmful effects on human/animals</p> <p>Moderate</p> <p>Over application of agro-chemicals in the catchments area can lead to pollution of water bodies.</p> <p>Minor</p> <p>Polluted water bodies affect aquatic life</p> <p>Minor</p> <p>Application of chemicals in rainy season can result in ineffective targeting, increase runoff and uptake by soils and water bodies</p> <p>Use of highly toxic chemicals to plants, animals and humans</p> <p>Minor</p> <p>Improper use, contamination by high exposure, no precautionary measures leading to health impacts</p> <p>Minor</p> <p>Details are included in the PMP</p>	

		commissioned separately as required by OP4.09	Minor
4	Poultry production	<p>Pungent scent can be generated from poorly managed waste</p> <p>Solid waste generation from poultry droppings;</p> <p>Occupational health and safety;</p> <p>Water pollution;</p> <p>Noise pollution from the birds in the area</p> <p>Emissions of air pollutants (incl. NH3, PM10 and NOx)</p> <p>Greenhouse gas emissions (incl. CH4, CO2 and N2O)</p> <p>Soil pollution if waste is not well managed</p> <p>Sick poultry birds carrying zoonotic diseases can have impact on human health</p> <p>Poor management of waste can result infestation of the area by rodents and insects</p> <p>Emission of atmospheric pollutants (e.g. smoke, gas) during processing chicken can pose health risk</p>	<p>Moderate</p> <p>Moderate</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Minor</p> <p>Moderate</p> <p>Minor</p> <p>Minor</p> <p>Minor</p>
Social Impacts			
5	General	<p>Increase in women work burden;</p> <p>Public health issues;</p>	<p>Minor</p> <p>Minor</p>

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4.4 Mitigation considerations and options

- 5 All moderate and major adverse impacts are considered for mitigation. Specific measures have been suggested in this regard where practicable. With regard to negligible and minor impacts where the project activity is not expected to cause any significant impact in such cases, best practice measures and mitigation have also been recommended where appropriate to improve the environmental and social performance of the Project.
- 6 The mitigation options considered include provision of alternatives, project timing, pollution control, signing of consent agreements with land owners.

4.5 Recommended mitigation measures

- 7 The mitigation measures or guidelines have been designed in order to avoid, minimize and reduce negative environmental and social impacts. The project will conform to the Bank's Environmental, Health and Safety Guidelines. The mitigation measures are presented in the following tables in a descriptive format.

Table 4.3 Impacts and Mitigation Measures

Impact issues	Description of mitigation measures
Physical Environment	
Waste disposal	<p>Solid non-toxic waste</p> <ul style="list-style-type: none"> • Biomass to be disposed of on farmlands. • Animal droppings and other farm waste could be used as mulch to enrich the soil. • Adequate waste reception facilities should be provided at various project sites • Final disposal should be at dump sites approved by the local District Assembly • Basic storage facilities to be provided to avoid rotting. • Farmers will be encouraged to send empty chemical containers for final disposal. Management of pesticides containers are detailed in the PMP.

Air pollution	<ul style="list-style-type: none"> •The Projects should ensure that the waste from the poultry production is maintained well to reduce gas emission. If sites are located in close proximity to schools/health clinics, thus include minimization of noise generating activities during day-time hours, in order to comply with EPA guidelines on noise • If dropping generation at the project becomes a problem, limited wetting of sites and or unloading and reloading points should be done to reduce dropping raising • Change litter often to reduce accumulation of methane gas in poultry system • Also use wood shaving either than sawdust to keep poultry house in good order • Left over vaccines should be disposed well • Antibiotics should be given to animal in the right dose • The use of pesticides on the farmlands should be minimised. The main control methods for pests and diseases will involve the use of resistant hybrids. • Practice of Integrated Pest Management (IPM) Plan with support and assistance from MoFA will be promoted. • Types of pesticides, fumigants as well as their active chemical ingredients and their side effects would be known and confirmed prior to use. • Lead farmers with the assistance of MoFA to educate farmers on appropriate application and handling methods
Noise pollution	<ul style="list-style-type: none"> • The Projects should site farms at the outskirts of town or human activity to minimize noise. • Birds should be fed well to reduce noise • Ecto- parasites should be treated well to reduce noise level • Chronic respiratory disease should be treated well to reduce noise level
Water pollution	<ul style="list-style-type: none"> • Saw dust should not fall in the water meant for drinking in terms of the poultry production

	<ul style="list-style-type: none"> • Drinker should be well positioned in the litter house • If agrochemicals (herbicide and pesticides) are used near water bodies the projects should observe the relevant buffer distances and avoid misuse of agrochemicals
Soil and Land degradation	<ul style="list-style-type: none"> • Minimize land clearing areas as much as possible to avoid unnecessary exposure of bare ground to the elements of the weather • Re-vegetate cleared areas as early as possible • Erosion minimization technics will be implemented on areas with high risk of erosion (gradient of 25% or more) • Nitrogen fixing cover crops like Pueraria phaseoloides, Calopogonium mucunoides, and Centrosema pubescens will provide the needed nitrogen required by the crops and fodder. Other organic wastes to be used include cow dung and organic kitchen waste among others. • Organic farming practices will help eliminate the use of inorganic fertilisers and herbicides that are major contributors to surface water quality deterioration. • The project will work closely with MoFA to teach and illustrate best farming practices to project communities/ farmers.
Impact on fauna and natural habitat	<ul style="list-style-type: none"> • Projects will not be allowed within legally gazzeted protected areas and critical natural habitats • Avoid unnecessary exposure and access to sensitive fauna habitat areas • The use of tried and tested native methods like trapping/scaring of animals and destroying nestling/breeding areas of pests will be encouraged • For identified or suspected sensitive habitats (swamps/ wetlands), regular inspection or monitoring should be carried out in the area

	<p>prior to start and during work.</p> <ul style="list-style-type: none"> • If sensitive habitats are encountered, Project activities should cease and the Project should consult Wildlife Division to determine the appropriate course of action. • If the project site is discovered as a sensitive habitat area, the Project should engage the Wildlife Division to develop a suitable plan.
Impacts on water bodies/ Fauna habitat	<ul style="list-style-type: none"> • Project staff must report sightings of any injured or dead aquatic and terrestrial life immediately, regardless of whether the injury or death is caused by a Project activity. The report should include the date and location of the animal/strike, and the species identification or a description of the animal. The report should be made to the EPA or Wildlife Division. • The Project workforce and local communities should be educated to ensure that the importance of environmental protection and nature conservation are effectively communicated and that wider appreciation of environmental issues are fostered.
Decommissioning of projects	<ul style="list-style-type: none"> • Social and Environmental Contract Clauses should be added in bidding documents such as the imperative and conditional agreement to clean up land before handing it over to either the Government/Local community.
Emergency Situations (Bush fires)	<ul style="list-style-type: none"> • The project will fully engage the District Fire Service Department to continue with its training programmes on regular basis. • Farmers will be encouraged to have fire belts around their farmlands to provide some protection
Social Issues	
Conflicts between crops and livestock farming	<ul style="list-style-type: none"> • Community through its FBO will discuss and institute its own regulations to determine the movement of livestock in terms of space and time periods. • Culprits will be fined appropriately

Farmer safety	<ul style="list-style-type: none"> • Farmers will be encouraged to invest in appropriate protective gears like long boots to provide some protection against dangerous reptiles. • WVG through MoFA will engage district MOH to ensure availability of medicine including anti snake venoms to protect human life. • Local communities and homes will be encouraged to provide some protection in the form of fencing or cleared boundary areas against straying dangerous animals and pests (rodents).
Local economy, employment and loss of livelihood	<ul style="list-style-type: none"> • If a site is acquired, all persons living off the site should be provided with livelihood assistance based on their current income levels or the project should assist such persons obtain new jobs immediately without any loss of income. Crop and animal husbandry is one of main source of local economy.
Deprivation of use of land	<ul style="list-style-type: none"> • Due process should be followed to establish the true owner of or rights holder over any land, be it family or stool land. Once established, the project should acquire the site by paying appropriate compensation. Recognition of customary land ownership structure that would require putting in measures (participation of community in consultation, dissemination of payment information) to ensure that compensation and lease payments are utilized by communities.
	<ul style="list-style-type: none"> •
Impacts on human health, safety and sanitation	<ul style="list-style-type: none"> • Adequate sanitary facilities will be available for workers and open range defecation will not be countenanced. • Safety boots and nose mask should be provided to workers in the poultry and crop sector • Environmental, Health and Safety (EHS) plan should be implemented. • All workers will be sufficiently trained in safe

	<p>methods pertaining to their area of work to avoid injuries.</p> <ul style="list-style-type: none"> • The project will conduct safety training for pesticide handlers and all agricultural workers. The training program will include handling of agro-chemicals, and what to do in the case of pesticide exposure.
Marginalization of women	<ul style="list-style-type: none"> • Access to credit schemes with focus on women • Provide women with labor and time saving machinery through the setting up of plant pools within reach such as districts and communities through the collaboration of the Ministries of Agriculture, Trade and Industry, and Women and Children • Access to improved variety of seeds and seedlings as well as fertilizers and other chemicals needed to improve agricultural methods, should be enhanced by making them affordable to women farmers. • Women farmers must be educated on new variety of crops that are being introduced as well as on other new and improved methods of farming through extension services. • More women extension services workers should be allocated to districts and communities where women farmers predominate as this will enhance their interaction, especially in areas where married women are traditionally barred from being friendly with other men. • Women's and adolescent time constraints need to be taken into consideration when designing programs for them, be it training or otherwise. • More women participation in consultations and separate women-only meetings to be established. Women- suitable timing for consultations so that attendance does not clash with other priorities.

Community disruption	<ul style="list-style-type: none"> • Schedule regular meetings with the community • Continuous engagement of communities using Participatory Rural Appraisal (PRA) methods • Implement grievance redress mechanisms
Increase in women work burden	<ul style="list-style-type: none"> • Education programs on time management should be instituted • Adequate compensation for work done by women

5. ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

Environmental and social planning, implementation and management will be undertaken by World Vision Ghana for its development projects to cover environmental and social assessment (ESA) and the pre-project/project planning processes. Key stages of the ESA include proposal screening, ESIA and mitigation measures, while the pre-project/planning process involves project concept, identification, design and appraisal. The ESA process links up with the pre-project/planning process signifying the importance of the two processes (i.e. EA and feasibility) to influence one another in the development of the Project. In the context of the ESMF, environmental and social planning identifies and assesses the potential concerns and implications that may arise with the implementation of the Project, in order to influence the design and sustainability of project development. The successful implementation of the ESMF depends on the commitment of World Vision Ghana and its related institutions, the capacity within the institutions and the appropriate and functional institutional arrangements among others.

The MOFA, Lands Commission, and EPA as well as MEST were identified as directly associated with the preparation, review and the implementation of the ESMF. The Ministry of Food and Agriculture (MoFA), Wildlife Division (WD), Lands Commission (LC) and the project communities were involved for their inputs regarding the appropriate environmental, social and health safeguards to be observed when the sub-components are being implemented.

This section addresses the following key areas of the ESMF implementation:

- Roles of Key Stakeholders in the ESMF implementation;
- Capacity building;
- Environmental and social monitoring and reporting; and
- ESMF implementation budget.

Thus the ESMF implementation provides guidance on procedures to be followed and standards to be met in implementing the Project which should be in agreement with national and World Bank safeguard provisions. Roles and responsibilities are clearly defined as well as monitoring protocols to be followed to ensure that the required provisions are adhered to. Finally, budgetary estimates are provided to support the implementation of the environmental and social management plan.

5.1 The Environmental and Social Screening Process

A screening process, selection and evaluation of the Projects are required to manage environmental and social aspects of these activities. The extent of environmental assessment that might be required prior to the commencement of the projects will depend on the outcome of the screening process. WVG will use this checklist to screen all potential projects and report

accordingly as part of the usual project formulation (feasibility phase) exercise.

The purpose of the screening process is to determine whether projects are likely to have potential negative environmental and social impacts; to determine appropriate mitigation measures for activities with adverse impacts; to incorporate mitigation measures into the project design; to review and approve projects proposals and to monitor environmental parameters during implementation. The extent of environmental and social work that might be required for the projects prior to implementation will depend on the outcome of the screening process.

5.2 ESIA Procedure to be followed by the Project

The World Bank safeguard policy OP4.01 provides guidance on the environmental assessment procedures for WB funded projects. The Ghana EIA procedures have also established an acceptable process to screen and evaluate all developments, undertakings, projects and programs which have the potential to give rise to significant environmental impacts. The two processes are largely similar and the Ghanaian procedures are therefore given in the following sections and will mostly be statutorily followed by all sub-component activities to obtain environmental permits for the intended activities.

Sub-component activities will only commence when an environmental permit has been procured from the EPA. The Agency has provided the list of projects for which ESIA is mandatory. These have been given in the Annex and are consistent with the World Bank categorization of projects.

The following steps will be followed by WVG as the implementing agency to ensure environmental and social compliance of the Project.

Step 1: Environmental Registration of the Project

WVG Food Security Technical Manager will provide safeguards supervision over the Projects. The Officer will be directly responsible for the registration of project interventions with the EPA as required by law. The Environmental Assessment Registration Forms are available at all EPA offices to register every project/ development that may have an impact on the environment.

A sample copy of the EA1 Form is provided in the Annex and the mitigation measures suggested in this ESMF as well as the checklist used in the screening exercise should assist to complete this Form. For projects for which EIA are mandatory, the Environmental Officer should register with Form EA1 otherwise Form EA2 should be used. This is a requirement under the Environmental Assessment Regulations LI 1652 (1999).

Step 2: Screening This activity in accordance with the EAR 1999 LI1652 is the responsibility of the EPA. The Agency, within 25 days of receiving the Registration Form take a decision by placing the project at the appropriate level of environmental assessment. The results will be communicated to the implementing agency with reasons, which could be any of the following:

- Objection to the project
- No objection to the project (equivalent to World Bank Category C Project)
- Preliminary Environmental Assessment (PEA) will be required (equivalent to World

Bank Category B2 Project)

- Environmental and Social Impact Assessment (ESIA) required (equivalent to World Bank Category B1 or A Project).

For projects receiving the ‘no objection’ from the EPA (WB Category C project) and therefore have only minor environmental and social risks, the implementing agency may move to implementation in accordance with pre-approved standards or codes of practices or they pre-approved guidelines for environmental and social management.

Step 3: Conduct environmental and social assessment studies

The WVG Food Security Technical Manager will prepare the Terms of Reference for the ESIA, and follow procurement rules for the recruitment of consultants for the ESIA. The ToR may be prepared using issues identified during the screening exercise and also the registration of the project with the EPA. Also, the impact mitigation measures provided in this ESMF may provide some basis for the design of the ToR. To facilitate the formulation of the ToR, a template has been prepared and provided in the Annex of this report.

The ESIA will identify and evaluate potential environmental impacts for the proposed activities, evaluate alternatives, and design mitigation measures. It will also analyze any cumulative impacts, where applicable. The preparation of the ESIA was done in consultation with stakeholders, including people who may be affected. Public consultations are critical in preparing a proposal for the activities of the projects likely to have impacts on the environment and population. The public consultations should identify key issues and determine how the concerns of all parties will be addressed in the ESIA. When an ESIA is necessary, the administrative process enacted by the EPA will be followed and executed.

Procedures for projects requiring an ESIA

First stage: Preparation of Terms of Reference The results of identification, and extent of the ESIA (scoping), the terms of reference will be prepared by the WVG Food Security Technical Manager.

Second stage: Selection of consultant

Third stage: Preparation of the ESIA with public consultation The report will follow the following format:

- Description of the study area
- Description of the sub- cproject
- Discussion and evaluation of alternatives
- Environment description

- Legal and regulatory
- Identifying potential impacts of proposed sub-components, including cumulative impacts
- Process of public consultations
- Development of mitigation measures and a monitoring plan, including estimates of costs and responsibility for implementation of surveillance and monitoring

Step 4: Review and approval of the ESIA for the sub-component; Publication / Dissemination of ESIA

The WVG Food Security Technical Manager will submit the draft ESIA to EPA. The report will be reviewed by a cross-sectoral National Environmental and Social Impact Assessment Technical Review Committee (ESIA/TRC) which is expected to:

- Assist the Agency in screening/reviewing all Environmental Assessment Applications and Reports (Environmental Impact Statements, Annual Environmental Reports, Environmental Management Plans and other related reports)
- Make recommendations to the Executive Director of the EPA for final decision-making
- Provide technical advice on conduct of assessments and related studies on undertakings and the reports submitted on them;
- Make recommendations on the adequacy of the assessment and any observed gap;
- Advice on the seriousness of such gaps and the risks or otherwise to decisions required to be made recommend whether the undertakings as proposed must be accepted and under what conditions, or not to be accepted and the reasons, as well provide guidance on how any outstanding issue/areas may be satisfactorily addressed.

Copies of the ESIA will be placed at vantage points including the EPA Library, relevant District Assembly, EPA Regional Offices and MoFA head office and regional offices. EPA serves a 21-day public notice in the national and local newspapers about the ESIA publication and its availability for public comments.

Step 5: Public Hearing and Environmental Permitting Decision (EPD)

Regulation 17 of the LI 1652 specifies three conditions that must trigger the holding of a public hearing on a project by the Agency. These are:

- Where notice issued under regulation 16 results in great public reaction to the commencement of the proposed undertaking;
- Where the undertaking will involve the dislocation, relocation or resettlement of communities; and
- Where the Agency considers that the undertaking could have extensive and far-reaching

effects on the environment.

Where a public hearing is held, the processing of an application may extend beyond the prescribed timelines required for EPA's actions and decision-making.

Environmental Permitting Decision (EPD)

Where the draft ESIA is found acceptable, WVG will be notified to finalize the reports and submit eight hard copies and an electronic copy. Following submission to EPA, the implementing agency shall be issued an Environmental Permit within 15 working days and issue gazette notices.

Where the undertaking is approved, MoFA shall pay processing and permitting fees prior to collection of the permit. The fees are determined based on the Environmental Assessment Fees Regulations, 2002, LI 1703.

Responsibilities for the Implementation of the Screening Process

The ESMF will be implemented by WVG that would establish a team of Environmental and Social Officers who will collaborate with the EPA and the World Bank safeguards team to ensure effective execution. Table provides a summary of the stages and institutional responsibilities for the screening, preparation, assessment, approval and implementation of the project activities.

Table 5.1 Environmental and Social Screening and Responsibilities

No	Stage	Institutional Responsibility	Implementation Responsibility
1	Screening of Environmental and Social project using the checklist	WVG	WVG Social and Environmental Officer
2	Determination of appropriate environmental and social assessment level/category	EPA/ WVG	WVG Social and Environmental Officer
2.1	Selection validation	World Bank	Social and Environmental Officer
3	Implementation of environmental and social assessment	WVG	WVG Social and Environmental Officer
3.1	If ESIA is necessary		

3.1a	Preparation of terms of reference	WVG	WVG Social and Environmental Officer
3.1b	Selection of Consultant	WVG /Procurement Officer	WVG Social and Environmental Officer/ Procurement Officer/ Safeguards specialist
3.1c	Realization of the EIA, Public Consultation and participation. Integration of environmental and social management plan issues in the tendering and project implementation,	WVG / Procurement Office/ Consultancy firm	WVG Social and Environmental Officers/ Procurement Officer
4	Review and Approval	EPA/ World Bank	
4.1	ESIA Approval (B1)	EPA/ World Bank	
4.2	Approval simple measures (B2&c)	WVG	WVG Social and Environmental Officer/ Project manager
5	Participatory Public Consultation and disclosure	MoFA/EPA/ World Bank	EO/Consultant
6	Surveillance and participatory monitoring	Implementing agency/EPA/ World Bank/ MoFEP	WVG Social and Environmental Officers/ WB Safeguards specialists
7	Development of participatory monitoring indicators	WVG	WVG Environmental Officer /Safeguards Consultant

Other relevant World Bank provisions

The World Bank OP 4.09 has also been triggered and a Pest Management Plan (PMP) will also be available to guide the project as a standalone.

Technical Specifications and Standards

5.2.1 Technical specifications

WVG with technical support from its department and agencies like MoFA and EPA, will be responsible for the development and presentation of clear guidelines for the design and provision of technical specifications and standards to assist the private sector to plan for projects. These will ensure the streamlining of approaches and activities for sound implementation of projects. These will include adequate reference to sector norms and prescribed national codes of practice. The private sector will be well aware of applicable technical provisions and fit their projects into these accordingly.

5.2.3 Environmental standards

The EPA is responsible for setting environmental standards and has in place for both general and sector specific guideline values. These standards and in some cases guidelines are required for the management of pollutant emissions. In situations where standards which therefore have legal backing are available then these must be followed. Otherwise, national guidelines or the World Bank guidelines could be used. In most cases, these are practically similar.

5.3 Environmental and Social Monitoring and Reporting

Monitoring is a key component of the ESMF during project implementation. Monitoring should be undertaken at the sub-components implementation phase to verify the effectiveness of impact management, including the extent to which mitigation measures are successfully implemented. Monitoring should involve three areas namely;

- Compliance monitoring;
- Impact monitoring; and
- Cumulative impact monitoring.

The aim of monitoring would be to:

- Improve environmental and social management practices;
- Check the efficiency and quality of the EA processes;
- Establish the scientific reliability and credibility of the EA for the project; and
- Provide the opportunity to report the results on safeguards and impacts and proposed mitigation measures implementation.

5.3.1 Compliance Monitoring

This is to verify that the required mitigation measures, which are the environmental and social commitments agreed on by the MOFA and EPA (main environmental regulator) are implemented. Compliance monitoring would include inspection of air, water, soil and environmental pollutions in the project site.

5.3.2 Impacts Monitoring

Monitoring of sub-components impacts mitigation measures should be the duty of the Environment Department (which is yet to be created) of the MOFA. Environmental and social safeguards will ensure that all agricultural and poultry related activities as stated in ESMF are in accordance with documented mitigation measures. The monitoring results should form a major part of the reports to be submitted to the EPA and MOFA

5.3.3 Cumulative Impacts Monitoring

The impacts of the Project on the environmental and social resources within the Project's area of influence should be monitored with consideration to other developments which might be established. There should be collaboration between MOFA and other proponents to compare E&S safeguards guiding the individual projects implementation to ensure comprehensive management of cumulative impacts.

Impact issues	Proposed Action/Measures	Implementation tool/criteria	Monitoring indicators	Verification	Project stage	Responsibility
Solid waste disposal	-Provide adequate waste dumping sites - -Dispose of waste at District Assembly approved waste dump sites	- EHSP/Waste Management Plan	Number of site waste bins Final disposal records	Weekly checks by project Manager	Fruits and vegetables Operation	farmers Project Manager
Air/noise pollution	-The Projects should require farms should be sited at outskirts of town to minimize noise. •Birds should be fed well to reduce noise •Ecto - parasites should be treated well to reduce noise level •Chronic respiratory diseases should be treated well to reduce noise level	Environmental management plan	Maintenance plan implementation Records of Actions taken to address any air and noise pollution	-Weekly check by the project Officers	Throughout project life cycle	Project Managers

Water pollution	<p>-Project staff must report sightings of any injured or dead aquatic and terrestrial life immediately, regardless of whether the injury or death is caused by a Project activity.</p> <p>The report should include the date and location of the animal/strike, and the species identification or a description of the animal. The report should be made to the EPA or Wildlife Division.</p> <p>•The Project workforce and local communities should be educated to ensure that the importance of environmental protection and nature conservation are effectively communicated and that wider appreciation of environmental issues are fostered.</p>	Environmental management plan	<p>-Proposed actions implemented</p>	Weekly checks	Operation	Project Manager
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Impact on fauna and habitat	-avoid unnecessary exposure or access to sensitive habitat. - Regular inspection or monitoring should be carried out in sensitive areas eg swamps/ wetlands the area prior to start of work.		Presence of sensitive habitat at project area	-Regular self-checks by project Manager	Production	Wildlife Division/ EPA
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Impacts on inland water bodies and Fauna/ habitat	<p>Ensure proper storage and handling of fuels, oil, wastes, and other potentially hazardous materials.</p> <p>-Regular monitoring of suspected or known sensitive areas should form part of the project activities.</p> <p>-Project activities should avoid disturbance of habitat or sensitive areas in working area.</p> <p>-Project must report sightings of any injured or dead aquatic life (fishes).</p>	<p>Hazardous material management plan</p> <p>-Regular fauna observation report</p> <p>- Educate</p>	<p>Water accidents/incidents recorded</p> <p>Water pollution identification and monitoring indicators recorded</p>	<p>- Daily self-checks by contractor -</p> <p>Periodic reports on performance by contractor to client -Spot checks and audit by project engineers -</p> <p>Grievances recorded</p>	Pre-construction, and maintenance	Project Manager
Impact on inland bodies/ water /coastal	Areas close to water bodies that are disturbed during construction activities should be rehabilitated	<p>Environmental management plan-</p> <p>Erosion control and restoration plan</p>	Reduced Erosion in project area recorded	-Daily self-checks -	Periodic reports on performance	

Social Impact Assessment						
Impact issues	Proposed Action/Measures	Implementation tool/criteria	monitoring indicators	Verification	Project stage	Responsibility
Impacts on recreation and public areas	Place notices and warning signs at working areas	EHSP	Grievance records	Warning signs/ notices in place	Farming activities	Project Managers
Impacts on cultural heritage/ interest /existing	-Identify cultural heritage resources and existing ecologically sensitive areas.	Environmental Management plan	Cultural/ resources/ existing	-Chance finds procedure under implementation -Daily self-checks and verification	Production	Project manager
Impacts on Human Health and Safety	-Use suitable Personal Protective clothing's	EHSP	-Health and safety incident register - Grievance records	-EHSP under implementation Spot checks and observations by project engineers -Periodic reports on performance by project Managers	Production	Project Manager

Marginalization of women	<p>-Special credit schemes with focus on women</p> <p>-Provide women with labour and time saving machinery through the setting up of plant pools within reach such as districts and communities</p> <p>-More women extension services workers should be allocated</p> <p>-Women's time constraints need to be taken into consideration when designing programmes for them, be it training or otherwise.</p>	ESMF	<p>- No. of women benefiting from project facility</p> <p>- No. of women extension workers</p> <p>- No of women attending training</p>	-periodic survey and assessment reports	Operation	WVG/ MoFA,
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6. INSTITUTIONAL CAPACITY FOR ESMF IMPLEMENTATION

6.1 Institutional roles and responsibility in the ESMF Implementation

The ESMF provides guidance for the environmental and social safeguards for the Project and its successful implementation will depend largely on the key stakeholder institutions. This will ensure that the sub-components are undertaken with due regard for the integrity of the resources to be affected by the project development activities. The roles of the major stakeholders are identified in an institutional role identification matrix in which the various components of the Project were matched with the institutions which have jurisdiction in the areas of licensing, permitting, assessment, monitoring, etc. The main institutions to implement the program and projects and to ensure sound management of the environmental and social aspects include:

- MoFA
- Government Regulatory Agencies

Ministry of Food and Agriculture (MoFA)

The Ministry of Food and Agriculture (MoFA) has established a unit with focus on environmental issues. This Land and Water Management Unit collaborate strongly with the EPA to mainstream environment into policy decisions. MoFA is the government ministry spearheading the Project's effort and therefore plays a co-ordinating role among all the main stakeholders to ensure project success. The environmental and social management capacity at the regional offices is however limited and this will need to be enhanced and utilized for the environmental success of the project.

Environmental Protection Agency (EPA)

The EPA is responsible for ensuring compliance with laid down ESIA procedures in Ghana in accordance with the EPA Act 1994 (Act 490) and its amendment, and the Agency is expected to give environmental approval for Projects. The ESIA is being applied in Ghana to development projects as well as other undertakings as an environmental permitting pre-requisite and a major environmental management tool. The EPA is represented in all the ten (10) regions of the country and will support the project by exercising its permitting and monitoring powers. Though the Agency's technical capacity may be adequate there are issues with regard to logistics especially transport which therefore limits its monitoring and enforcement functions.

Project Screening, ESMF Review and Environmental Authorization/ License

This document provides the framework for an environmentally sustainable development and implementation of the Project. Following formal submission of this ESMF, the EPA would undertake a review of the document and confirm that the ESMF document is adequate for project

approval vis-à-vis national ESIA provisions.

Water Resources Commission (WRC)

The WRC is responsible for granting licenses for any water use activity and the procedures as laid down in the WRC Act 1998 (Act 526) will be followed. All project activities requiring such license will receive assistance from the WRC and the Commission will therefore provide adequate guidance to ensure that the proper procedures are used.

Lands Commission

The Land Valuation Board (LVB) is the statutory body ensuring that land required for projects are properly acquired and also transparent procedures are followed and fair and adequate compensation is paid. Though private firms may be invited to participate in the process, in case of disputes, the LVB would assist to ensure prompt settlement.

6.2 Capacity Building Requirements

Competence of government i.e., the ability of active government parties to carry out their respective design, planning, approval, permitting, monitoring and implementation roles will, to a large extent, determine the success and sustainability or otherwise of the Project.

The objectives and provisions of this ESMF therefore cannot be achieved in the absence of relevant competencies on environmental and social management within MoFA and other stakeholders. The following sections provide recommendations on capacity building to support the program's environmental and social management objectives.

Identification of Capacity Building Needs

The first step in pursuing capacity building will be to identify the capacity building needs of the various stakeholders. Capacity building should be viewed as more than training. It is human resource development and includes the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively. It also involves organizational development, the elaboration of relevant management structures, processes and procedures, not only within organizations but also the management of relationships between the different organizations and sectors (public, private and community).

The capacity building requirements will mostly be in the form of training workshops and seminars. A training workshop on the ESMF/RPF and the World Bank safeguard policies of OP 4.12 and OP 4.01 would be organized for MoFA (head office and regional offices) as well as the Private sector (Project consultants). The following additional training topics are proposed:

- Environmental and social Screening Checklist

- Completion of EA Registration Forms
- Preparation of Terms of Reference for ESIA
- Environmental and Social Clauses in Contractors' contract and bidding documents.

The Social and Environmental officers would have sufficient knowledge and understanding of the implementation of the World Bank policies of OP 4.12, OP 4.01 and OP 4.09 and participate in the training of regional officers.

6.3 Budgetary provisions

The awareness creation, capacity improvement and training workshops will be organised for selected officers involved in the implementation of the Project, mainly:

- MoFA head office and regional officers

The relevant regions will comprise: Greater Accra, Volta, Northern, Upper West, Upper East and Brong Ahafo Regions. The estimated cost of implementing environmental management plan is US\$ 25,000 as detailed in the table below:

Table 6.1. Budget for Capacity Building and Awareness creation

S/N	Activity	Description	Unit Cost	No.	Total Cost US\$
1	Awareness creation and Capacity building for WVG project staff	Training workshop on ESMF implementation and ESIA procedures	2,000	3	6,000
2	Capacity building for Project partners	Regional training workshops on ESIA procedures	2,000	3	6,000
3	Awareness creation and information dissemination workshop		2,000	2	4,000
4	Monitoring and evaluation	Hiring of consultants and preparation of reports	3,000	3	9,000
					25,000

7. PUBLIC CONSULTATIONS, PARTICIPATION AND INFORMATION DISCLOSURE

7.1 Stakeholder consultations and Participation

The ESMF preparation included extensive stakeholder and participation consultations. Key project stakeholders were identified for consultations and these included Government Ministries, State Agencies / Organizations' / and Departments, Project offices, Non- governmental organization and local communities, both the affected and host communities, including women, the poor and most vulnerable groups.

Meetings were held with key officials and opinion leaders to gauge level of awareness and involvement with the project, concerns of project implementation, and to obtain relevant documents or baseline information. The consultations and participation also served to gather information on the mandates and permitting requirements to inform the development of the Program.

The list of stakeholders contacted and issues discussed are presented in the Stakeholder Meetings and Public Consultation

7.2 ESMF Disclosure

The World Bank policies require that environmental reports for projects are made available to project affected groups, local NGOs, and the public at large. Public disclosure of environmental report is also a requirement of the Ghana ESIA procedures. However, there is no limitation as to the extent and scope of disclosure. WVG in collaboration with the line agencies and EPA will make available copies of the ESMF in selected public places as required by law for information and comments. Public notice in the media should be served for that purpose. The notification should be done through a newspaper or radio announcement or both.

The notification should provide:

- 7.2 a brief description of the Project;
- 7.3 a list of venues where the ESMF report is on display and available for viewing;
- 7.4 duration of the display period; and
- 7.5 Contact information for comments.

The EPA will assist to select display venues upon consultation with MoFA. These would be project sites specific and very much informative to beneficiaries

8. GRIEVANCE REDRESS MECHANISM

Grievance mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project implementers or owners on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented. They may take the form of specific complaints for damages/injury, concerns about routine project activities, or perceived incidents or impacts. Identifying and responding to grievances supports the development of positive relationships between projects and affected groups/communities, and other stakeholders.

The World Bank/IFC standards outline requirements for grievance mechanisms for some projects. Grievance mechanisms should receive and facilitate resolution of the affected institutional or communities' concerns and grievances. The World Bank/IFC states the concerns should be addressed promptly using an understandable and transparent process that is culturally appropriate and readily acceptable to all segments of affected communities, at no cost and without retribution. Mechanisms should be appropriate to the scale of impacts and risks presented by a project.

Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project.

Projects may have a range of potential adverse impacts to people and the environment in general, identifying grievances and ensuring timely resolution is therefore very necessary. As such the ESMF has developed a grievance management process to serve as a guide during project implementation. This Grievance Redress Mechanism (GRM) builds pretty much on the one provided

The grievance management guide to be followed by WVG is provided in the table below.

Table 2.1 Grievance Management Guide

Step	Process	Description	Time Frame	Other information
1	Identification of grievance	Face to face; phone; letter, e-mail; recorded during public/community	1 Day	Email address; hotline number

		interaction; others		
2	Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e. in a log book)	4-7 Days	Significance criteria Level 1 – one off event; Level 2 – complaint is widespread or repeated; Level 3- any complaint (one off or repeated) that indicates breach of law or policy or this ESMF/RPF provisions
3	Grievance is acknowledged	Acknowledgement of grievance through appropriate medium	7-14 Days	
4	Development of response	- Grievance assigned to appropriate party for resolution - Response development with input from management/ relevant stakeholders	4-7 Days 10-14 Days	
5	Response signed off	Redress action approved at appropriate levels	4-7 Days	WVG should sign off
6	Implementation and communication of response	Redress action implemented and update of progress on resolution	10-14 Days	

		communicated to complainant		
7	Complaints Response	Redress action recorded in grievance log book Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days	
8	Close grievance	Record final sign off of grievance. If grievance cannot be closed, return to step 2 or refer to sector minister or recommend third-party arbitration or resort to court of law	4-7 Days	WVG

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Annex 1: Initial Community consultation and persons met

Purpose of mission: Conduct Community Consultations towards the formulation EMP for the Improved feeding practices project in Ghana

Context and Objective:

World Vision International Ghana is formulating environmental management plan to solicit funding from the Japan Social Development Fund. The objective of the mission was therefore to hold, as part of the wider stakeholder consultations (on the project and associated potential social and environmental impacts), community rapid appraisal in order to confer with the potential beneficiaries, understand their issues, constraints and challenges and participatory map out possible activities and environmental mitigation plans to be included in the overall project design.

Discussion and Results:

The WVG team held discussion with farmers and other stakeholders to identify potential issues that are likely to affect the environment.

Key constraints that were identified during the participatory appraisal session included:

- a. Erratic rainfall pattern and its impact on their farming operations: The farmers pinpointed that, the rainfall pattern has become unpredictable and highly erratic and this according to them is having negative impact on their operations since they depend entirely on the rains to conduct their farming operations.
- b. Another key issue that came up was land preparation activities like stumping, ploughing which affects the soil and the trees
- c. Other issues include minimal usage of herbicide, pesticide and insecticide to reduce environmental harmful effect.
- d. High Post-Harvest Losses: The farmers identified high post-harvest losses especially in times of glut as one of the challenges that is affecting their ability to make a living from their farming activities. According to them, during times of glut, they are able only to sell just small portion of their produce and the rest goes waste.

The farmers were of the view that, the project will be of benefit to them and expressed their readiness to participate in project activities.

Key Environmental concerns discussed:

The key concerns raised by the local stakeholders are related to land degradation issues that affect their livelihood, mainly the reduction of arable lands due to water erosion, limited access to financial markets, and need for technical capacity building and strengthening to improve

vegetable farming practices. These have been incorporated in the project design. Since stakeholder consultation and participation is an iterative process, it will be pursued and sustained throughout the project lifespan.

It was also agreed that site specific Environmental and Social Impact studies will be conducted and impact mitigation actions plans developed and approved through community consultations before implementation starts.

Follow-up Actions:

- a) Synthesis of the information gathered in the field to design the project and prepare the funding proposal for the World Vision Ghana.
- b) Prepare Environmental and Social Management Framework to outline the potential social and environmental effects of the proposed project.

List of Participants:

No	NAME	INSTITUTION/ORGANIZATION	NO. OF PARTICIPANTS INVITED	POSITION
1	Eric Asumani	MOFA	1	Director
7	Eric Acolatse	GHS	1	Director
8	Adelaide Amponsah	GHS	1	Nutrition Officer
9	ZoyaarTurkson	EHD	1	Director
10	Janet Babile	GHS	1	Health Promotion Officer
11	Isaac Owusu	DOC	1	DOC Head
12	Appiah Kubi	Bee Keepers Rep	1	Group Member
13	Charles Effah Fosu	FBO	1	Group Memembr
14	Emelia Tabua	FBO	1	Group member
15	Samuel Forgor	NADMO	1	Director
16	Jones Kyeremeh	NADMO	1	Officer
17	Rolland Baffoe	NFED	1	Director
18	Osei Agyemang	NCCE	1	Director
19	Boaz K. Gyan	Savings Group	1	SG Rep
20	George Adu	Savings Group	1	SG Rep
21	Stanley Opore	Saving Group Agent Rep	1	Saving Group Agent
22	Victor A. Abugre	Saving Group Agent Rep	1	Saving Group Agent

23	Zakaria Ibrahim	Gari processors group	1	Chairperson,Agyina
24	Akamboye Anyoka	Gari processors group	1	Chairperson ,Kwabia
25	Kwasi Boamah	Vision Fund	1	Credit Officer
26	Jasper Dunya	FSC	1	District Director
27	Hannah Appiah	Community livestock Volunteers	1	Member
28	Umaru mabingba	Community Extension Volunteer(Kwabia)	1	Community Extension Volunteers
29	Martin Nobong	CWS	1	
30	Nyamekye Peter	CWS	1	
31	Addah Gabriel	OFSP Committee Rep	1	
29	Nana Akwasi Owusu	Chief and Faith leaders	1	
32	Baba Iddi	District Assembly	1	District Co- ordinating Director
33	Sammuel Abisgo	District Assembly	1	District Planning Officer
34	Alexander Ampoma	Livestock Group Rep	1	
35	Maxwell Amedi	WVG		Manager
36	Albert Zempare	WVG		Project Officer
37	Rose Aawuleenaa	WVG		Project Officer
38	Marshal J.B Anala	WVG		Market Facilitator
39	Abraham Abetia	WVG		Driver
40	Joseph Naa Dordaah	WVG		Finance Officer
41	Paul Kofi Twene	WVG		Cluster Manager
42	Joseph Kwogyenga	WVG		Cluster Manager
43	Emmanuel Azure	WVG		PCDF
44	George Amanyio	MOFA	1	Director
45	Mr.Ramseyer Ahmed	GHS	1	Director
45	Vivian Sopimmeh	GHS	1	Nutrition Officer
46	Mr. Osei Darko George	DOC	1	Head
47	Mr. Isaac Ayensu	NCCE	1	Director
48	Mr. Agbokli Ernest	EHD	1	Director
49	Mr. Ampiadu Sampson	FBO REP.	1	Chairperson
50	Augustine Owusu	FBO Rep.	1	Chairperson
51	Florence Kwaah	Saving Groups	1	Box keeper
52	Owusu George	Saving Groups	1	Chairperson
53	Rose Gyimah	Mushroom Groups	1	Chairperson
54	Thomas Atimbilla	District Assembly	1	District Planning Officer
55	Anin Yeboah	District Assembly	1	District Co-ordinator
56	Mr .Opoku Stephen	Vision Fund	1	Branch Manager
57	Mansah Alice	Livestock Group Rep.	1	Member
58	Mr.Karim Amadu	Bee Keepers Rep.	1	Chairperson
59	Mr.James Abrie	Saving Group Agent	1	Rep.

60	Mr.Philips Adjei	Saving Group Agent	1	Rep.
61	George Owusu	Gari Processors Group	1	Rep.
62	Oppong Kwame	Gari processors Group	1	Rep.
63	Azuma Regina	Community livestock Volunteers	1	Community livestock Volunteers
64	Sumaila Asante	Community Extension Volunteers	1	Community extension Volunteers

Annex 2: Screening Checklist for Environmental and Social Issues

1. Project Information: Name and Contact Details:			
Project Details	Location: (Region/District/Community)		
	If other, explain:		
Project Focal Person			
Name of Interviewer:		Date of Screening:	

Sb-project Details: Attach location map (longitude-Latitude coordinates (GPS reading) if available)	
Type of activity: What will be done, who will do it, what are the objectives and outcomes.	
Estimated cost:	
Proposed Date of Commencement of work.	
Expected Completion of Work	
Technical drawing specifications review:	Yes/No – refer to Application Portfolio

2. Physical Data:	Comments
Subproject area site area in ha:	
Extension of or changes to existing land use	
Any existing property to transfer to subproject	
Any plans for construction, movement of earth, changes in land cover	

3. Preliminary Environmental Information:	Yes/No	Refer to Process Framework	Comments
Is there adjacent/nearby critical natural habitat?			
Is there activities On Forest Reserve?			
Is there activity adjacent to Forest Reserve?			
What is the land currently being used for? (e.g. agriculture, gardening, etc.)			List the key resources.
Will the proposed activities have any impact on any ecosystem services, biodiversity issues or natural habitats?			
Will there be restrictions or loss of access to using natural resources in any traditional areas including medicinal plants or those of economic value for livelihoods?		x	
Will there be water resource impacts?			
Will there be soil impacts?			
Will the subproject require use of pesticides?			If Yes, refer to Pest Management Plan
Are there any new or changing forest management planning or activities?		x	
Any cultural heritage/sacred sites in project area?		x	

4. Preliminary Social and Land Information:	Yes/No	Refer to Process Framework	Comments
Has there been litigation or complaints of any environmental nature directed against the proponent or subproject?		x	

Will the subproject require the acquisition of land?		X	
What is the status of the land holding (customary, lease, community lands, etc.)?		X	
Is there evidence of land tenure status of farmers and/or occupants (affidavit, other documentation)?		X	
Are there outstanding land disputes?		X	
Has there been proper consultation with stakeholders?		X	
Is there a grievance process identified for PAPs and is this easily accessible to these groups/individuals?		X	
Will there be any changes to livelihoods?		X	
What are the main issues associated with farmer benefits and community benefits?		X	
Will any restoration or compensation be required with “admitted” farmers?		X	

5. Impact identification and classification:

When considering the location of a subproject, rate the sensitivity of the proposed site in the following table according to the given criteria. Higher ratings do not necessarily mean that a site is unsuitable. They indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social planning may be required to adequately avoid, mitigate or manage potential effects. The following table should be used as a reference.

Issues	Site Sensitivity			Rating (L,M,H)
	Low	Low	High	
Natural habitats	No natural habitats present of any kind	No critical natural habitats; other natural habitats occur	Critical natural habitats present; within declared protected areas	If High Refer to Annex 3.1 and Contact Regional EPA
Water quality and water resource availability and use	Water flows exceed any existing demand; low intensity of water use; potential water use conflicts expected to be low; no potential water quality issues	Medium intensity of water use; multiple water users; water quality issues are important	Intensive water use; multiple water users; potential for conflicts is high; water quality issues are important	
Natural hazards vulnerability, floods, soil stability/ erosion	Flat terrain; no potential stability/ erosion problems; no known flood risks	Flat terrain; no potential stability/ erosion problems; no known flood risks	Flat terrain; no potential stability/ erosion problems; no known flood risks	
Land and Farming Tenure	No conflicts, disagreements around use of land, tenant farmer rights and location of admitted farms and farmers transparent	Process of land regularization and rights to natural resources being worked out with clear communication and grievance process in place	Land conflicts historically unresolved, admitted farmers being evicted, tenant farmers losing rights and no transparency or grievance redress available	If Medium or High Refer to Process Framework

6. E & S assessment comments based on site visit:
Summary Observations

Determination of environmental category based on findings of the screening: A ____ B ____ C ____

- ☐ Requires an EIA
- ☐ Requires preparation of additional E&S information
- ☐ Does not require further environmental or social due diligence

Potential Environmental and Social Issues That Require Referral to EPA or Using EA1 Form

	Benchmark and Issues	Impact description	Yes	No	Remark
1	Statutory provisions	Is the proposed irrigation area less than 40ha?			If yes, proceed
2	Statutory provisions (see <i>Natural Habitat Issues in Checklist</i>)	Are there any ecologically sensitive/ critical areas within the proposed project area (refer to Annex 3.1)			If yes, contact regional EPA
3	Protected areas and wildlife	Will project activities potentially impact natural habitats or critical wildlife species			If yes, proceed with EA1 form
4	Biodiversity loss	Will land use change or vegetation clearance lead to loss of exceptional flora/ fauna			If yes, proceed with EA1 form
5	Water pollution	1. Is there a local stream close to the project site? 2. Does it flow all year round? 3. How long does it take to walk to this stream 4. Do you think any project activity will affect this stream			If 4 is yes, proceed with EA1 form
6	Soil erosion	Are there steep slopes in the project area? Can you easily walk on the slopes without falling			If yes, proceed with EA1 form

Annex 3.1: Environmental Sensitivity/Critical Areas

NB: Projects sited in these areas could have significant effects on the environment and the EPA could require a more stringent environmental assessment
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All areas declared by law as national parks, watershed reserves, forest reserves, wildlife reserves and sanctuaries including sacred groves

Areas with potential tourist value

Areas which constitute the habitat of any endangered or threatened species of indigenous wildlife (flora and fauna)

Areas of unique historic, religious, cultural, archaeological, scientific or educational interest

Areas which provide space, food, and materials for people practicing a traditional style of life

Areas prone to disaster (geological hazards, floods, rainstorms, earthquakes, landslides, volcanic activity etc.)

Areas prone to bushfires

Areas classified as prime agricultural areas

Recharge areas of aquifers

Water bodies characterized by one or any combination of the following conditions:

Tapped for domestic purposes

Within controlled/ protected areas

Which support wildlife and fishery activities

Mangrove areas characterized by one or any combination of the following conditions:

With primary pristine and dense growth

Adjoining mouth of major river system

Near or adjacent to traditional fishing grounds

Which acts as natural buffers against shore erosion, strong winds and storm floods

Estuaries and lagoons

Other coastal areas of ecological, fisheries or tourism importance or which are subject to dynamic change

Wetlands

Rivers

Areas of high population density