



# Building Climate Resilience of Vulnerable Agricultural Livelihoods in Southern Zimbabwe

## Environmental and Social Management Framework

6 February 2020

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### EXECUTIVE SUMMARY

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Southern Zimbabwe is home to 30% of the country's 13.6 million people and 45% of the country's rural population. While climate change is affecting the country as a whole, the greatest intensity of impacts is experienced in the southern provinces, where the majority of smallholder farmers are extremely vulnerable to climate hazards as a result of poverty and weak access to services and institutional resources. Rain-fed agricultural systems, the predominant production systems in southern Zimbabwe, are expected to be subject to drier and hotter conditions, making rain-fed maize production – the primary staple - a significant challenge. The increasing growth and strength of climate hazards have significant implications for household food security and income in already vulnerable communities in southern Zimbabwe.

The project is seeking to address climate induced vulnerability by building climate resilience of vulnerable agricultural livelihoods in southern Zimbabwe. The proposed project will be implemented in southern Zimbabwe in the semi-arid Agro-Ecological Regions (AERs) IV and V of the provinces of Manicaland, Masvingo and Matebeleland South. The project will be implemented in 15 Districts and 137 Wards are: in Manicaland province, Buhera (13 wards), Chimanimani (7 wards), Chipinge (15 wards); in Masvingo Province, Masvingo (9 wards), Bikita (4 wards), Zaka (4 wards) Chivi (9), Chiredzi (8 wards) Mwenenzi (5 wards); and in Matebeleland South Province, Beitbridge (5 wards), Gwanda (13 wards), Matobo (16 wards), Insiza (16 wards), Umzingwane (7 wards), Mangwe (6 wards).

The project objective is to strengthen the capacities of smallholder farmers in southern Zimbabwe, especially women, to adapt to the impacts of climate change-induced water scarcity on their agricultural livelihoods. The expected outcomes of the project are a) increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions; and b) increased resilience of health and well-being, and food and water security.

To achieve this the project will pursue the following outputs:

- (i) Increased access to water for climate-resilient agriculture through climate-resilient irrigation systems and efficient water resource management
- (ii) Scaled up climate-resilient agricultural production and diversification through increased access to climate-resilient inputs, practices, and markets; and
- (iii) Increased access to weather, climate and hydrological information for climate-resilient agriculture.

The project is expected to benefit an estimated 2,302,120 people (approximately 543,619 direct and 1,758,502 indirect beneficiaries).

This Environmental and Social Management Framework (ESMF) has been prepared to support the project proposal and subsequent implementation. The ESMF has been prepared based on the risks identified through screening of activities using UNDPs Social and Environmental Standards procedure. The risk profile of the project has been determined to be moderate (Category B). The risks are considered to be acceptable and manageable through the application of mitigation measures.

The ESMF provides an outline of the types of mitigation measures that are likely to be required when implementing the project. Where appropriate, site specific environmental and social management plans (ESMPs) or site work instructions may be prepared to deal with specific issues.

### 1 INTRODUCTION

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1. This Environmental and Social Management Framework (ESMF) has been prepared in support of a project proposal for “Building Climate Resilience of Vulnerable Agricultural Livelihoods in Mzingwane, Runde and Save River Basins in Southern Zimbabwe” by the Government of Zimbabwe to the Green Climate Fund (GCF). As this project is supported by UNDP in its role as a GCF Accredited Entity, the project has been screened against UNDP’s Social and Environmental Standards Procedure and deemed a Moderate Risk (World Bank/International Finance Corporation Category B) project. As such, an Environmental and Social Management Framework has been prepared for the project.

#### 1.1 BACKGROUND

2. The Government of Zimbabwe (GoZ) with support from UNDP, is formulating a project on adaptation to climate change impacts “Building climate resilience of vulnerable agricultural livelihoods in Mzingwane, Runde and Save river basins in southern Zimbabwe” for submission to the GCF. The project will seek to improve the resilience of vulnerable communities to climate change impacts.
3. Southern Zimbabwe is home to 30% of the country’s 13.6 million people and 45% of the country’s rural population. While climate change is affecting the country as a whole, the greatest intensity of impacts is experienced in the southern provinces, where the majority of smallholder farmers are extremely vulnerable to climate hazards as a result of poverty and weak access to services and institutional resources. Rain-fed agricultural systems, the predominant production systems in southern Zimbabwe, are expected to be subject to drier and hotter conditions, making rain-fed maize production – the primary staple - a significant challenge<sup>1</sup>. The increasing growth and strength of climate hazards have significant implications for household food security and income in already vulnerable communities in southern Zimbabwe
4. The majority of the poorest, rural smallholders and their families reside in southern parts of Zimbabwe, in Manicaland, Masvingo and Matabeleland South provinces, which lie in the Mzingwane, Runde and Save river basins. Collectively, these provinces (covering 147,197 km<sup>2</sup>), are home to 3,921,681 people, according to the 2012 census<sup>2</sup>.
5. The majority of farmland in southern Zimbabwe – the provinces of Manicaland, Masvingo and Matabeleland South – falls within Agro-Ecological Regions (AERs) IV and V (refer below), which have the lowest agricultural potential in terms of rainfall, temperature and length of growing season. Water is the key limiting factor for agricultural productivity. In addition to low rainfall, annual rainfall in AER V is highly variable, characterized by erratic and unpredictable rains (short, sharp, isolated storms), rather than being evenly distributed. Although these regions can be extremely dry, farmers see little alternative but to grow maize, the staple food crop, or other small grains (millet, sorghum) to try to achieve a measure of food security. Crop yields are extremely low, and the risk of crop failure is high in one out of three years.
6. The Government of Zimbabwe has invested significantly in increasing smallholders’ adaptive capacities and has made significant progress in mainstreaming climate change into national development planning. Many development partners and initiatives have complimented such efforts, eg. Zimbabwe Resilience Building Fund (ZSBF), UNDP/GEF, USAID, FAO and DFID. Interventions have focused on increasing smallholders’ climate resilience through supporting adoption of climate smart agriculture (CSA) practices, irrigation, market linkages, climate information services and institutional coordination. However, there remain gaps in service delivery to smallholders to increase their capacities, resources and information access in climate risk management, and efforts have not considered all elements of a holistic, climate resilience approach to achieve transformational change, at scale.
7. Sub-assessments have been undertaken to investigate key gaps and possible intervention areas in detail. Recommendations on how smallholder farming systems in southern Zimbabwe can be made resilient in the face of climate change, based on best practices and lessons learned from past and on-going projects, and identifying gaps and barriers to implementation have been made.
8. It has been recommended to have interventions in the following areas to build smallholders’ adaptive capacities in the Save, Runde and Mzingwane river basins:

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<sup>1</sup> Ibid.

<sup>2</sup> ZimStat. 2012. Zimbabwe Population Census 2012. Population Census Office. Harare.

- climate resilient agricultural production, through:
    - climate resilient agriculture (CRA)
    - making existing irrigation more climate resilient
    - expanding climate resilient irrigation
    - improved market linkages;
  - climate information services; and
  - institutional coordination and knowledge management.
9. Implementation of all elements, collectively, will build climate resilience.

### 1.2 OVERVIEW OF THE PROJECT

10. The key objective of the proposed project is to strengthen the capacities of smallholder farmers in southern Zimbabwe, especially women, to adapt to the impacts of climate change-induced water scarcity on their agricultural livelihoods. The expected outcomes of the project are a) increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions; and b) increased resilience of health and well-being, and food and water security. To achieve these outcomes the project proposes to overcome the above identified barriers through implementation of the following three interlinked Outputs, using GCF and co-financing resources:
- (i) Increased access to water for climate-resilient agriculture through climate-resilient irrigation systems and efficient water resource management
  - (ii) Scaled up climate-resilient agricultural production and diversification through increased access to climate-resilient inputs, practices, and markets; and
  - (iii) Increased access to weather, climate and hydrological information for climate-resilient agriculture
11. The country's agricultural potential is depicted by five agro-ecological regions (AERs), which are defined by Vincent and Thomas (1960) according to rainfall, temperatures and soil patterns (Figure 1). Regions 4 and 5 are dominant in the southern provinces of (parts) Manicaland, Masvingo and Matebele land South.
12. The proposed project will predominantly lie in natural areas IV and V. These are described thus<sup>3</sup>:
13. **Natural Region IV** is located in the low-lying areas in the north and south of the country. The characteristics of the region are: annual rainfall of 450-650 mm, severe dry spells during the rainy season, and frequent seasonal droughts. Although NR IV is considered unsuitable for dryland cropping, smallholder farmers grow drought-tolerant varieties of maize, sorghum, pearl millet (mhunga) and finger millet (rapoko). NR IV is ideally suitable for cattle production under extensive production systems and for wildlife production.
14. **Natural Region V** covers the lowland areas below 900 m above sea level in both the north and south of the country. The rainfall is less than 650 mm/year and highly erratic. Although NR V receives reasonable rainfall in the northern part of Zimbabwe along the Zambezi River, its uneven topography and poor soils make it unsuitable for crop production. Generally, NR V is suitable for extensive cattle production and game-ranching.
15. Although these regions are too dry for crop production, households on the communal lands in these regions grow grain crops (maize and millet) for their food security and some cash crops such as cotton. Crop yields are extremely low and the risk of crop failure is high in one out of three years. Cattle and goat production are major sources of cash income.<sup>4</sup>
16. The south and south-west regions (AERs IV and V) have the lowest LGP (Length of Growing Period), which is the number of days where agricultural conditions (heat and water) are suitable for growing crops in a season, in the country at 100-135 days
17. AERs IV and V are characterized by low rainfall and significant exposure to climate risks, as depicted in past, current and predicted scenarios. These regions suffer from persistent high food deficits, the highest number of drought-related livestock deaths, high food prices in lean seasons and, in specific areas, a high

<sup>3</sup> <http://www.fao.org/docrep/009/a0395e/a0395e06.htm>

<sup>4</sup> VUNA (2017) Agricultural Value Chain Identification and Analysis



risk of climate-induced flooding. The selected project area is predicted to suffer increased inter-annual variability in water availability. Thirty percent of the country's 13.6 million people and 45% of its rural population reside in the southern Zimbabwe region. The proposed project will target smallholders in rain-fed and irrigated farming, who are financially poor and majority women.

18. The proposed project will be implemented in southern Zimbabwe in the semi-arid Agro-Ecological Regions (AERs) IV and V of the provinces of Manicaland, Masvingo and Matebeleland South. The project will be implemented in 15 Districts and 137 Wards are: *in Manicaland province*, Buhera (13 wards), Chimanimani (7 wards), Chipinge (15 wards); *in Masvingo Province*, Masvingo (9 wards), Bikita (4 wards), Zaka (4 wards) Chivi (9), Chiredzi (8 wards) Mwenezi (5 wards); and *in Matebeleland South Province*, Beitbridge (5 wards), Gwanda (13 wards), Matobo (16 wards), Insiza (16 wards), Umzingwane (7 wards), Mangwe (6 wards).

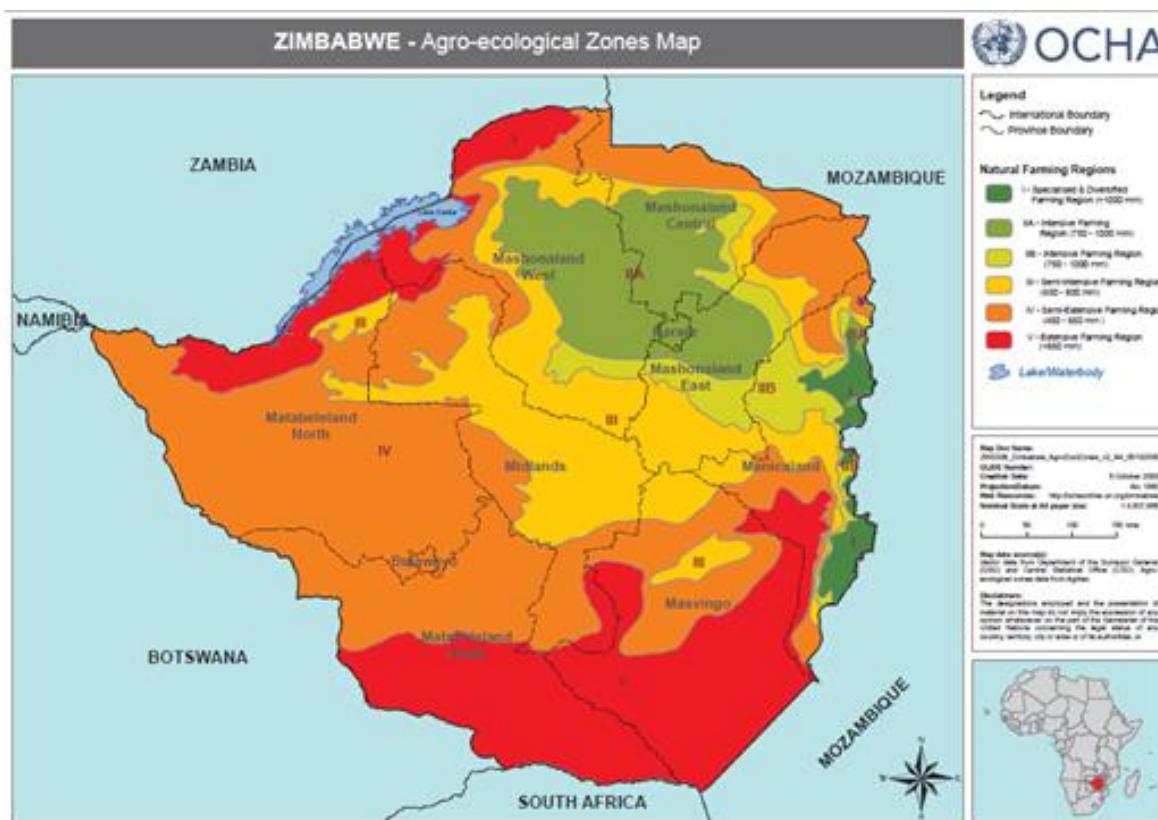


Figure 1 Spatial distribution of AERs based on the 1960 classification. Target areas lie within AERs IV and V

19. The project is expected to benefit an estimated 2,302,120 people (approximately 543,619 direct and 1,758,502 indirect beneficiaries). It is estimated that the majority of the 386 wards across the 15 districts will benefit from the Output on climate information services (Output 3). Of the total number of wards (386), 137 priority climate-vulnerable wards have been proposed for implementation of CSA packages (Output 2). The project will carry out Farmer Field Schools, engaging lead farmers and directly benefiting 6,900 lead farmers and their households (with an average size of five persons. Lead farmers will then extend their new knowledge and skills to the wider community, estimated at approximately 10 additional farmers per lead farmer.
20. The project will also invest in revitalization and climate-proofing of 21 community-level irrigation schemes. Smallholders in each irrigation scheme will improve their technical and organizational capacities to plan, manage and operate their schemes in light of evolving climate risks through more effective Irrigation Management Committees (IMCs).
21. As a result of institutional capacity building, it is expected that AGRITEX will scale out successful CSA practices to other wards and communities throughout the southern provinces as these become mainstreamed into general extension service practice.

### 1.2.1 Summary of Activities

22. The three inter-related Outputs and their corresponding indicative inputs are described below:
23. Output 1: Increased access to water for agriculture through climate-resilient irrigation systems and water resource management
24. This output focuses on enabling vulnerable smallholder farmers, particularly women, to access sufficient, reliable water resources to address increasing climate risks to agricultural productivity.
25. Activities include rehabilitation and climate-proofing of community-level irrigation schemes, improving smallholder technical and organizational capacities to plan, manage and operate their irrigation schemes, networking Irrigation Management Committees, and strengthening the capacities of vulnerable smallholder farmers on rain fed farmlands to harvest and store rainfall and conserve soil moisture efficiently.
26. Activity 1.1: Climate proofing irrigation infrastructure for enhanced water security in the face of climate change
27. This activity aims at ensuring water availability, increasing water storage capacity, reducing water loss and enhancing water use efficiency through rehabilitation and operation of appropriate irrigation infrastructure and technologies.
28. This activity will provide sustained access to water for 5,899 smallholder farmers by climate-proofing 21 irrigation schemes in 15 districts in the three southern provinces through upgrading of water provision equipment and infrastructure, together with more effective and efficient operations and management. Irrigation Management Committees (IMCs) will build their organizational and management capacities through training in efficient operations and maintenance of irrigation systems as well as establish and strengthen Operations and Maintenance Funds and strategic capitalization plans and O&M protocols. IMCs will be trained to interpret and further disseminate climate, weather and agricultural advisories to minimize and manage climate risk. The project will support operations and maintenance of the irrigation schemes for the first two years after rehabilitation to ensure continued functionality during the process of establishment and initiation of capitalization of the O&M funds, building the capacities of IMCs to administer and manage the funds, as well as the irrigation infrastructure and equipment.
29. The project also invests in establishing a network of IMCs across the three provinces to facilitate exchange visits, dissemination of climate adaptation knowledge and best practice, and scale economies in training and coordination for market, water resource planning at Catchment and Sub-Catchment levels and other activities.
30. The project will use a climate-resilient, rehabilitation design approach to existing irrigation schemes that overcomes challenges faced by previous irrigation investments to sustainably increase volumes and reliability of water supply for smallholders in the face of increasing climate risks. Best practice in designing climate-resilient irrigation will entail the following, as necessary: hydrological assessments, flood forecasting, appropriate irrigation technologies that increase water efficiency, Climate Change Risk Assessment (CCRA)<sup>5</sup>, financial and economic cost benefit analysis<sup>6</sup>, Gender, Equity and Social Inclusion (GESI)<sup>7</sup> assessment, and political economy assessment.
31. This activity includes the following indicative inputs:
  - 1.1.1 Climate-proofing of irrigation infrastructure and equipment in 21 irrigation schemes. Methods of climate proofing infrastructure against floods may include river or watercourse bank reinforcement, bioengineering, gabions, riprap/geotextile, structure anchoring, and above-flood level location of electrical, mechanical, and other equipment.
  - 1.1.2 Training of 21 Irrigation Management Committees (IMCs in climate-adapted O&M and monitoring, and establishment of O&M funds
  - 1.1.3 Technical support by DOI to IMCs to support climate-resilient O&M and operationalization of the O&M funds (years 2 through 4) based on detailed O&M plan

<sup>5</sup> CRIDF. 2016. Climate Change Risk Assessment. Available on: <https://www.cridf.com/ccra> (Accessed 5 May 2017)

<sup>6</sup> CRIDF. 2016. Financial & Economic Appraisal Process. Available on: <https://www.cridf.com/cba> (Accessed 5 May 2017).

<sup>7</sup> CRIDF. 2016. Gender Equality and Social Inclusion. Available on: <https://www.cridf.com/gesi> (Accessed 5 May 2017)

- 1.1.4 Learning and knowledge exchange across IMCs to improve coordination and scaling up of climate resilient irrigation systems
32. Activity 1.2: Strengthen the capacities of farmers on rain fed farmlands to harvest rainfall and conserve soil moisture efficiently:
  33. This activity will decrease the climate vulnerability of smallholders on rain fed lands by training them in Farmer Field Schools (FFS) and on-farm to adopt and implement land use and other practices that harvest rainwater and conserve soil moisture. After completion of FFS training, participating farmers will implement measures on their own plots and extend their knowledge and skills to approximately 10 additional farmers each, under the supervision of AGRITEX extensionists.
  34. The project will promote among other measures to increase farmers' water efficiency and to cushion crops against the impacts of droughts and dry spells.
  35. This Activity includes the following indicative inputs:
    - 1.2.1 Field-based training of 6,900 lead rain fed farmers in 230 Farmer Field Schools in rainwater harvesting, soil moisture management techniques and water efficiency practices;
    - 1.2.2 Procurement of technologies to implement climate-resilient water-resource management in rainfed farmlands;
    - 1.2.3 Rainfed farmer-to-farmer exchange of water management knowledge and skills (under AGRITEX supervision, each lead farmer engages additional 10 farmers each through workshops and on-site assistance)
  36. Output 2: Scaled up climate-resilient agricultural production and diversification through increased access to climate-resilient inputs and practices, as well as stronger market linkages
  37. This output focuses on enabling vulnerable smallholder farmers, particularly women, on both rain fed and irrigated farms, to strengthen their capacities to adopt and implement climate-smart agricultural practices for specific staples and/or high-value crops in the face of increasing climate hazards and to sustain these practices through more effective market linkages and public-private partnerships.
  38. To ensure support for long-term continued application and adaptation of climate-smart production practices, AGRITEX will establish multi-stakeholder Innovation Platforms for specific crops in designated areas – identified during project preparation based on agronomic, economic, climate vulnerability and other criteria - aimed at building and empowering partnerships to increase market access and development of the value chains of the selected climate-resilient crops. Each Platform will include the primary actors in a crop's value chain, from input supply and production to final sale, and will develop a strategy to improve the market linkages in each value chain to enable access by smallholder farmers. Smallholders, particularly women, will receive training in financial management and value addition, marketing and business development. Specific smallholder capacity building activities will be identified as part of each crop-specific strategy that will confirm the final selection of climate-smart agricultural practices to be adopted.
  39. GCF resources, combined with GoZ co-financing, will be invested in strengthening the capacities of AGRITEX, the government agricultural extension agency, to train lead farmers in Farmer Field Schools to analyze the climate vulnerability of their agro-ecosystems and identify measures to enhance their climate resiliency from pre-screened packages of tested CSA practices. In FFS, smallholder lead farmers will improve their technical capacities to implement selected CSA practices aimed at augmenting yields and quality of specific staple and high-value crops on FFS plots as well as their own. Each lead farmer, once capacitated, will train 10 additional farmers in her/his community under the supervision of the ward-level AGRITEX extensionist.
  40. Activity 2.1: Establish transformative multi-stakeholder innovation platforms for diversified climate resilient agriculture and markets
  41. It is expected that increased water security through Activities 1.1 and 1.2, and climate-smart production techniques introduced in Activity 2.2, below, will enable crop diversification and surplus production of staple and non-staple crops. The adoption of climate-smart agricultural practices and technologies at scale is significantly enhanced if farmers are motivated by and assured of climate-resilient value-chains, including reliable markets for their diversified crops. In this sense, the project can sustain transformative changes in production and increase climate resilience of agro-ecosystems by enabling market linkages

that leverage market incentives to motivate farmers to permanently adopt and periodically innovate climate-smart agricultural practices.

42. Establishment of climate-resilient value chains requires the collaboration of all stakeholders in the chain. This project will convene multi-stakeholder Innovation Platforms for specific crops in specific districts, comprised of representatives of smallholder producers, government service providers, key research institutions, water governance authorities, financial services providers, input suppliers, buyers, processors, and other private sector enterprises. Each Innovation Platform will target the development of a specific value chain (horticulture, livestock, small grains, sesame, etc.) relevant to smallholders in specific geographic areas and develop strategies to build the climate-resilience and productivity of the specified value chains. The value chains for these crops were analyzed in detail in the Value Chain Sub-Assessment of the Feasibility Study found in the Annexes to this proposal.
43. Each Innovation Platform will create the partnerships necessary to overcome climate and other barriers to yield stability, productivity and quality for market access of the specific crop or livestock. Each value chain strategy will define the underlying elements and align with the curricula for Farmer Field Schools (FFS) in the farming communities participating in each Innovation Platform. Participating lead smallholder farmers, together with their public and private sector partners on the Innovation Platforms, will identify production and post-production barriers to be addressed through the FFS.
44. This Activity will leverage, among other types of partnership agreements, private sector investments through out-grower schemes, linking farmers with private 'off-takers' through contract farming. This Activity will build on both CRIDF's small-scale infrastructure program and the previous *Seeds and Markets Project* funded by the Swiss Agency for Development and Cooperation (SDC). The project will build on lessons learned and expertise in regard to value chain support in ongoing projects being implemented by OXFAM (funded by UNDP/GEF) for livestock and horticultural produce, SNV for horticultural produce, which have engaged agri-businesses such as Matanuska for bananas and Cairns for tomatoes and beans, CESVI, which has engaged Schweppes, for citrus fruits, and ZRBF consortia partners that have strengthened the sesame value chain, as well as the work of Heifer International for livestock in Chiredzi. A value-chain analysis and a market mapping exercise were undertaken as part of the full feasibility study during proposal development (see the value-chain sub-assessment annexed to the Feasibility Study). During project implementation, user-centric, community-based value-addition, marketing, and financing strategies will be developed as part of each Innovation Platform's work, building on the broader analysis during project design.
45. Inputs to this activity will enable smallholder farmers, particularly women, to build their technical and managerial capacities to increase and diversify their yields and incomes by growing a variety of specific climate-resilient commodities, and entering into partnerships with private sector companies to add value to them, and access the market negotiated contracts or other agreements with market authorities, private sector buyers or institutional clients. Farmers, especially women farmers, will build their capacities through targeted training, improved extension services, enhanced market linkages and public-private partnerships.
46. Seven multi-stakeholder Innovation Platforms - comprising farmers, input suppliers, produce buyers, water governance authorities, government service providers, financial institutions, NGO technical assistance providers and others - will be formed that cover the 15 Districts. Each Innovation Platforms will be coordinated and co-facilitated by assigned AGRITEX and DR&SS staff, with the assistance of key institutions and other entities (NGOs, private sector, international research organization). Innovation Platforms will meet at agreed times during the product cycle based on an agreed plan for strengthening the value chain and achieving market access. Each Innovation Platform will broker partnerships between producers, processors, buyers, input suppliers and others to lower the risk of mismatches between product supply and demand. The Innovation Platforms will broker actual contracts between growers and other partners in regard to financing, purchase, or sale of products. The Innovation Platforms will assist smallholder groups to identify training needs and match them with appropriate training providers.
47. This Activity includes the following indicative inputs:
  - 2.1.1 Establish and operationalize five multi-stakeholder Innovation Platforms (across 15 districts) and one national-level Platform to upscale diversified, climate resilient production and access to markets.
  - 2.1.2 Develop crop-specific production and market strategies involving all relevant value chain actors for climate-smart production and market access

- 2.1.3 Technical assistance and training to smallholder farmers, particularly women (under a ward-based gender equality action learning program and women financial empowerment training programme) and financial intermediaries to enable access to finance for sustained scaling up climate-resilient agriculture
48. Activity 2.2: Strengthen the capacities of smallholders to implement climate-smart agricultural production in the face of increasing climate hazards (rain fed and irrigated farms).
  49. This activity will support government extension services – using a participatory methodology - to refine, adapt and widely disseminate demand-driven, tested, climate-smart agricultural practices for rain fed and irrigated farms in southern Zimbabwe. Smallholder farmers, particularly women, will join 251 Farmer Field Schools across 15 districts and 137 wards to adapt recommended packages of climate-smart practices and technologies to their production of greater and more sustainable yields of staples and high-value crops in the face of increasing climate hazards. Each of the thirty farmers participating in each FFS during two seasons of CSA activities will disseminate lessons and best practice to thirty of their peers with the support of AGRITEX, NGOs and, where applicable, private entrepreneurs. As such, this activity aims at final adoption of CSA packages by approximately 6,900 lead farmers and 69,000 beneficiary farmers – a total of 75,900 smallholder households in the project area. In addition, the CSA packages for irrigated land will reach 5,899 smallholder households. Initial input packages will be provided to beneficiary farmers corresponding to the approved CSA package and skills acquisition in the FFS.
  50. CSA packages include practices such as soil conservation, appropriate tillage techniques, fertilization, incorporation of trees and shrubs into cropping systems, multiple cropping/polycultures, integrated crop-livestock systems, and others. Diversification of crops will also be pursued to reduce and manage climate risk. The CSA packages also include use of drought-tolerant crop varieties that have been tried and tested in southeast Zimbabwe and other dry areas. Irrigation and rain-fed farmers will be encouraged to adopt climate-adaptive practices for livestock rearing, such as raising of drought and heat tolerant livestock breeds, water harvesting, fodder production, and hay or silage making using irrigated crop residue.
  51. This Activity includes the following indicative inputs:
    - 2.2.1 Training of Trainers (provincial, district and ward level AGRITEX staff), particularly women, to conduct Farmer Field Schools in 15 target Districts of southern Zimbabwe
    - 2.2.2 Operationalization of 251 Farmer Field Schools for promotion of climate-resilient agriculture in the 15 Districts
    - 2.2.3 Procurement of inputs and technologies (e.g. seeds, tools, fertilizers) to implement CSA packages on 6900 lead farmer plots
    - 2.2.4 Learning and knowledge exchange to scale up implementation of climate-smart agriculture across all smallholder farmers
  52. Activity 2.3 Enhance institutional coordination and knowledge management capacities for climate-smart agricultural production in the face of increasing climate hazards.
  53. This activity will support the improved coordination and sharing of knowledge regarding climate-resilient agricultural practices, water management, value-chains, marketing and other factors among key government departments; these will include Department of Economics and Markets, AGRITEX and DR&SS in collaboration with Department of Livestock and Veterinary Services and Department of Irrigation within the Ministry of Lands, Rural Resettlement and Agriculture. The focus will be on ensuring that the lessons learned, and best practices identified through FFS, upscaling and Innovation Platforms are shared across departments at the national level in an evidence-based format that facilitates decision making and out-scaling of climate-resilient agricultural practices and water management.
  54. At provincial and district level, the project’s knowledge generation and learning activities will be grounded at the five Innovation Platforms with support from each of three anchoring agricultural training colleges - Masvingo, Mushagashe, and Esigodini– and relevant DR&SS research stations (e.g. Matobo and Chiredzi stations). Together with national level experts, these agricultural training colleges are responsible for the training of AGRITEX field personnel, as well as thematic experts.
  55. This Activity includes the following inputs:
    - 2.3.1 Enhance ICT/GIS data collection/sharing platforms and protocols for knowledge management on climate resilient agricultural systems and livelihoods

- 2.3.2 Generation and codification of knowledge for climate-resilient agriculture across agricultural training colleges and knowledge hubs
- 2.3.3 Impact evaluation and codification of best practices/lessons for systemic, evidence-based learning to scale-up resilient agricultural livelihoods

56.

57. Output 3: Improved access to weather, climate and hydrological information for climate-resilient agriculture.

58. This Output will support the establishment of a comprehensive, functional climate information system to enhance the resilience of agricultural livelihoods, particularly those reliant on growing crops on both irrigated and drylands in southern Zimbabwe. It will enhance existing observational networks (meteorological and hydrological), utilizing a combination of standard and low cost (particularly for O&M) technologies, as well as develop capacities to ensure the generation of timely weather/climate and hydrological forecasts and information for water resource management, irrigation management and dryland cropping.

59. Weather/climate/hydrological information will be appropriately packaged and combined with other sources of information related to household vulnerability/food security by multi-institutional task teams (AGRITEX & MSD), and disseminated through mobile telecommunications and radio programs, with training conducted by both international and local universities. Further support from universities will be provided for water resource capacity development at ZiNWA, with DoI contributing to materials on the use of water/weather forecasts and observations for irrigation scheduling by IMCs

60. This Output includes the following activities:

61. Activity 3.1: Installation and operationalization of weather/climate and hydrological observation networks.

62. This activity addresses existing gaps in weather station coverage by installing 21 automatic weather stations, 12 automatic weather stations, 10 automatic rainfall stations and 10 hydrological gauging stations at proposed irrigation sites that are not currently covered by the existing weather station network, and at catchment locations needed to monitor rainfall, river levels and flow. It builds the capacity of MSD to generate gridded observational datasets based on satellite observations, thus extending observations to areas without weather stations, as well as further developing the ability to generate quantitative downscaled weather forecasts via statistical/dynamical techniques and build the use of simpler decision-centric seasonal forecasts. This activity will also support the quality control of data and its access and storage in databases at ZINWA and MSD, as well as the development of shared weather data for modelling and forecasting. It will further provide training for MSD, ZinWA and other observers (e.g. for schools/communities hosting low-cost stations) on O&M of equipment. Indicative inputs include:

- 3.1.1: Install 12 automatic weather stations to cover key agricultural zones and 10 automatic low-cost rainfall/weather stations to improve rainfall monitoring in the three catchments
- 3.1.2: Install new or rehabilitate 10 water level/gauging stations in the three catchments
- 3.1.3: Strengthen the hydro-meteorological data transmission and processing system to enable localized weather, climate and hydrological model forecast generation
- 3.1.4: Identify and train MSD, ZinWA, DR&SS/AGRITEX officials, community observers (low-cost stations) in collecting data, operating and maintaining equipment.

63. Activity 3.2: Strengthen the capacities of MSD and AGRITEX to develop and disseminate tailored and localized climate, weather and hydrological products.

64. This activity will scale up innovations, developed through the UNDP/GEF supported project, on targeted seasonal forecasts (based on El Nino and the Indian Ocean Dipole) and climate information dissemination (utilising SMS communications) to small holder farmers. It will also develop new tailored products to inform decision making for food security and water resource management under the NEWU, and to be used as part of the information dissemination network to small holder farmers through SMS-based and radio services. These products will be developed through collaborative multi-institutional task teams and incorporate feedback on usability and information content as well as indigenous knowledge, garnered through participatory analysis and discussion.

65. The regular production of these weather information products will be operationalised through the development of operating procedures and associated software/code development. ZiNWA, with support

from University of Zimbabwe (UoZ), will undertake water resource modelling in the three southern catchments, as well as develop procedures (institutional and software/code) to operationally assimilate observations and forecasts from MSD to do forward projections of water resource availability. Informed by the PICSA methodology, these efforts will be scaled up to cover the three catchments and to include the design and formatting of advisories and distribution of messages, based on the sectoral products, to community radio stations and other channels such as mobile phones (SMS messaging), community radio, community meetings and local posters and bulletins.

66. Indicative inputs include:

- 3.2.1: Develop information products to strengthen existing national satellite/observation-based weather, 10-day and seasonal forecasts and advisories targeted to smallholder farmers
- 3.2.2 Training national level ZINWA staff (partnering with UoZ) in the use of water resource models as well as ingesting input data from weather/climate observations and forecasts.
- 3.2.3 Operationalize regular hydrological forecasts, incorporating daily updates of hydromet observations and forecasts;
- 3.2.4: Identify and develop appropriate information dissemination channels such as mobile phones, community radio, community meetings and local posters and bulletins

67. Activity 3.3: Capacity building for farmers and local institutional staff on effective use of weather, climate and hydrological information.

68. This activity supports capacity building of ZinWA, DoI, CMCs, IMCs and smallholder farmers to continuously access climate information services and to apply the knowledge to on-farm water management and crop production. This will involve training ZinWA and DoI at the national level, as well as ZinWA catchment management staff and CMCs at the subnational level, to be able to understand and interpret the modelling and forecast information provided by MSD (weather and seasonal forecasts) and ZinWA (water resource modelling), in terms of potential impacts on dam water levels to aid in managing water releases.

69. It will further work with AGRITEX extension officers, IMCs and lead farmers (ToT) to interpret the forecasts, combine/utilise them with on-farm measured rainfall and temperature, understand risk management options and use them to plan crop/water management decisions and crop irrigation scheduling.

70. This activity will also increase capacity to disseminate weather and climate-related information to communities through DR&SS and AGRITEX district offices and given the increased capabilities of these offices and institutions, dissemination of climate information will go beyond the districts and ward targets by this project. These offices will be provided with printed materials, and officers will attend the training courses so that they can be a first point of call for weather/climate related questions from farmers and communities. Three agricultural training colleges will establish climate knowledge centers where climate information will be codified and communicated in local languages and in accessible formats

71. Indicative inputs include:

- 3.3.1: Provide training to local level DoI, ZINWA and CC staff in data analysis and production of information products (based on observed and forecast water levels and weather/climate forecasts) for water resource management;
- 3.3.2: Provide participatory training to farmers and district and local level intermediaries – including Agriculture Extension, MSD and IMC staff - in interpretation and use of climate and weather information products for crop/water management
- 3.3.3 Set up codification, communication and database systems for climate information management across the climate knowledge centers at three agricultural training colleges - Masvingo, Mushagashe, and Esigodin

### 1.3 ENVIRONMENTAL AND SOCIAL RISK ASSESSMENT

72. As this project is supported by UNDP in its role as a GCF Accredited Entity, the project has been screened against UNDP's Social and Environmental Standards Procedure. The Social and Environmental Screening Template was prepared and the project deemed to be a moderate risk (Category B) project. Discussions on the impact assessment are provided in the Social and Environmental Screening Template,

which provided the rationale for the project being classified as a moderate risk. This ESMF provides further discussion below.

73. An impact risk assessment was undertaken using the UNDP Social and Environmental Screening Procedure to assess the probability (expected, highly likely, moderately likely, not likely) and the impact of the risk (critical, severe, moderate, minor, negligible). From this, a significance value was attributed to the potential impact (negligible, low, medium, high and extreme).

Score	Rating
5	Expected
4	Highly Likely
3	Moderately likely
2	Not Likely
1	Slight

Table ies Ratiing of probability of risk

Score	Rating	Definition
5	Critical	Significant adverse impacts on human populations and/or environment. Adverse impacts high in magnitude and/or spatial extent (e.g. large geographic area, large number of people, transboundary impacts, cumulative impacts) and duration (e.g. long-term, permanent and/or irreversible); areas impacted include areas of high value and sensitivity (e.g. valuable ecosystems, critical habitats); adverse impacts to rights, lands, resources and territories of indigenous peoples; involve significant displacement or resettlement; generates significant quantities of greenhouse gas emissions; impacts may give rise to significant social conflict
4	Severe	Adverse impacts on people and/or environment of medium to large magnitude, spatial extent and duration more limited than critical (e.g. predictable, mostly temporary, reversible). The potential risk impacts of projects that may affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples are to be considered at a minimum potentially severe.
3	Moderate	Impacts of low magnitude, limited in scale (site-specific) and duration (temporary), can be avoided, managed and/or mitigated with relatively uncomplicated accepted measures
2	Minor	Very limited impacts in terms of magnitude (e.g. small affected area, very low number of people affected) and duration (short), may be easily avoided, managed, mitigated
1	Negligible	Negligible or no adverse impacts on communities, individuals, and/or environment

Table 1 Rating of impact risk



<b>Impact</b>	5	High	High	High	High	High
	4	Medium	Medium	High	High	High
	3	Low	Medium	Medium	Medium	Medium
	2	Low	Low	Medium	Medium	Medium
	1	Low	Low	Low	Low	Low
		1	2	3	4	5
	<b>Probability</b>					

Table 2 UNDP Risk matrix

74. When undertaking the risk assessment, all activities were assessed, including, hard/soft infrastructure and livelihood interventions. Specific measures for each matter eg water, erosion, noise etc are discussed, along mitigation measures, later in this ESMF.

Table 3 Risk assessment and proposed mitigations

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
<b>Output 1: Increased access to water for climate-resilient agriculture through climate-resilient irrigation systems and efficient water resource management</b>				
<i>Activity 1.1: Climate proofing irrigation infrastructure for enhanced water security in the face of climate change.</i>	Irrigation can lead to over-extraction of water if water resource not appropriately managed.	Likelihood: 3 Consequence: 3 Risk: Moderate	Improve climate monitoring system (refer Output 3) to enable better forecasting and management of water resources  Undertake hydrological and hydrogeological assessments to determine flow and intra/inter-annual variations of water resources  Upgrade existing schemes to make more water efficient/climate proof	Likelihood: 2 Consequence: 3 Risk: Moderate
	In-stream infrastructure – impacts to flow	Likelihood: 4	Hydrology and hydraulics to be considered in design	Likelihood: 3
	Barrages and weirs can prevent upstream migration of fish	Consequence: 3 Risk: Moderate	Design to allow for fish passage  Include sediment traps / scouring or ability to remove manually	Consequence: 2 Risk: Moderate
	Gauging stations will have short-term impact during installation (vegetation and soil disturbance).	Likelihood: 4 Consequence: 2 Risk: Moderate	Apply ESMF to minimise impacts	Likelihood: 3 Consequence: 2 Risk: Moderate
Health and safety risks eg:	Likelihood: 2	Undertake ‘safety in design’ review to identify potential risks, include gender, equity and social inclusion elements in review.	Likelihood: 1 Consequence: 2	
<ul style="list-style-type: none"> <li>Potential for spread of water-borne diseases.</li> </ul>	Consequence: 4			

Activity	Unmitigated Impacts	Likelihood of Impact Consequence	of and Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
	<ul style="list-style-type: none"> <li>Drowning hazard (water storages)</li> <li>Electrical hazards associated with solar arrays used to power pumps</li> </ul>	Risk: Moderate	<p>Fence water storages where appropriate</p> <p>Solar arrays will be fenced and signed to warn of hazards. Installers and operators to be appropriately trained and qualified. Industry standard electrical safety equipment will be fitted.</p>	Risk: Low
	Lack of O&M can result in failure of schemes	<p>Likelihood: 3</p> <p>Consequence: 3</p> <p>Risk: Moderate</p>	<p>Irrigation management committees (ICMs) to be formed. Build capacity of ICMs. O&amp;M funds to be set up.</p> <p>Designs to consider O&amp;M and seek to minimise cost/requirement.</p>	<p>Likelihood: 2</p> <p>Consequence: 3</p> <p>Risk: Moderate</p>
	Representation of women and other vulnerable groups poor	<p>Likelihood: 3</p> <p>Consequence: 3</p> <p>Risk: Moderate</p>	<p>Gender, Equity and Social Inclusion (GESI) assessment to identify community development issues including employment, the needs of women, girls, children and the vulnerable. Implement Gender Assessment Action Plan.</p>	<p>Likelihood: 2</p> <p>Consequence: 2</p> <p>Risk: Low</p>
	Flood events impact infrastructure	<p>Likelihood: 2</p> <p>Consequence: 4</p> <p>Risk: Moderate</p>	<p>Utilise climate proofing techniques in design and construction to minimise impacts of floods and other extreme events. Methods of climate proofing infrastructure against floods may include river or watercourse bank reinforcement, bioengineering, gabions, riprap/geotextile, structure anchoring, and above-flood level location of electrical, mechanical, and other equipment.</p>	<p>Likelihood: 2</p> <p>Consequence: 3</p> <p>Risk: Moderate</p>

Activity	Unmitigated Impacts	Likelihood of Impact Consequence and	Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
<i>Activity 1.2: Strengthen the capacities of farmers on rain fed farmlands to improve water security through climate-resilient water management practices and technologies</i>	Training does not reach appropriate representative group. Representation of women and other vulnerable groups poor	Likelihood: 2 Consequence: 3 Risk: Moderate	Participatory approach with community input to identification of lead farmers to attend Farmer Field Schools (FFS).  Engage broad group and in sufficient numbers (230 FFS with 30 lead farmers in each proposed)  Implement Gender Assessment Action Plan.	Likelihood: 1 Consequence: 2 Risk: Low
	Lead farmers fail to pass on knowledge or limited thereby jeopardising sustainability	Likelihood: 2 Consequence: 2 Risk: Low	Knowledge transfer facilitated by organisation of two workshops and on-site assistance (at least one visit to each participating farmer in year 2) for lead farmer to engage an additional 10 farmers. FFS provides collaborative learning space for lead farmers. Participatory approach builds ownership and commitment.  Use a participatory action-research approach that builds on discussion and analysis of farmers' priorities and problems to select the appropriate tested techniques or practices to apply.	Likelihood: 1 Consequence: 2 Risk: Low

### Output 2: Scaled up climate-resilient agricultural production and diversification through increased access to climate-resilient inputs, practices, and markets

<i>Activity 2.1: Establish transformative multi-stakeholder innovation</i>	Innovation Platforms not sufficiently inclusive or relevant to stakeholders and therefore not sustainable.	Likelihood: 2 Consequence: 3 Risk: Moderate	Build on previously successful programs. Adopt participatory approach Target women and vulnerable groups – implement Gender Action Plan.	Likelihood: 1 Consequence: 2 Risk: Low
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Activity	Unmitigated Impacts	Likelihood of Impact Consequence and	Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
<i>platforms for diversified climate resilient agriculture and markets</i>	Women, and other vulnerable groups, not sufficiently represented in training			
	Adoption of crop diversification poor	Likelihood: 3 Consequence: 3 Risk: Moderate	Participatory training through FFS and peer to peer training Capacity building in technical and managerial capacities. Provide improved access to finance Identify training needs to facilitate switch to CSA crops	Likelihood: 2 Consequence: 2 Risk: Low
<i>Activity 2.2: Scale up the implementation of climate-smart agricultural production in the face of increasing climate hazards (rain fed and irrigated farms)</i>	Turnover of Agritex staff – potential loss of trained staff and knowledge	Likelihood: 3 Consequence: 3 Risk: Moderate	Train the trainer Consider a mentor/mentee approach Succession planning	Likelihood: 2 Consequence: 3 Risk: Moderate
	Priority climate driven issues not selected/dealt with.	Likelihood: 2 Consequence: 4 Risk: Moderate	Participatory approach to identify farmer needs. Identification and refining of CSA package components to address production problems and implementation on farmer plots and centralized learning locations Agritex to assist in systematic dissemination of CSA best practices – workshops, follow-on visits and peer to peer exchanges.	Likelihood: 1 Consequence: 3 Risk: Low
	CSA packages inappropriate or poorly implemented.			
	Women not appropriately represented in training/beneficiaries	Likelihood: 3 Consequence: 3	Lead farmers - ensure appropriate representation of women.	Likelihood: 2 Consequence: 2

Activity	Unmitigated Impacts	Likelihood of Impact Consequence	of and Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
		Risk: Moderate	Target women, youth and other vulnerable groups.  Implement Gender Action Plan	Risk: Low
<i>Activity 2.3: Enhance institutional coordination and knowledge management capacities for climate-smart agricultural production in the face of increasing climate hazards</i>	Knowledge not effectively shared between departments  ICT/GIS systems not well utilised	Likelihood: 3 Consequence: 3 Risk: Moderate	Knowledge generation and learning activities will be grounded at the five Innovation Platforms.  National Innovation Platform will include national level decision makers.  Organisations will be trained in knowledge management and utilise common ICT and GIS systems.  Training to include appropriate representation of women	Likelihood: 2 Consequence: 2 Risk: Low
<b>Output 3: Improved access to weather, climate and hydrological information for climate-resilient agriculture</b>				
<i>Activity 3.1: Installation and operationalization of weather/climate and hydrological observation networks</i>	Installation of weather stations and gauging stations has environmental impacts.  Weather/hydrological data improperly collected.	Likelihood: 3 Consequence: 2 Risk: Moderate  Likelihood: 3 Consequence: 3 Risk: Moderate	Impacts will be primarily associated with construction and will be temporary. ESMF outlines mitigation measures to minimise impacts.  Identify and train MSD, ZinWA, DR&SS/AGRITEX officials, community observers (low-cost stations) in collecting data, operating and maintaining equipment.	Likelihood: 2 Consequence: 2 Risk: Low  Likelihood: 1 Consequence: 3 Risk: Low

Activity	Unmitigated Impacts	Likelihood of Impact Consequence and	Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
	Weather and gauging stations not appropriately maintained.	Likelihood: 3 Consequence: 3 Risk: Moderate	Ensure clarity of responsibilities for O&M and that budgets are allocated.  Ensure all operators/maintenance personnel appropriately trained  Combination of standard and low-cost technologies reduces O&M costs  Identify opportunities for 'paid-for-service' climate services to provide additional funds	Likelihood: 1 Consequence: 3 Risk: Low
<i>Activity 3.2: Strengthen the capacities of MSD and AGRITEX to develop and disseminate tailored and localised climate, weather and hydrological products</i>	Poor agency cooperation	Likelihood: 3 Consequence: 3 Risk: Moderate	Inter-agency groups set up to enhance communication and cooperation  Implement Gender Action Plan to ensure women represented within agency groups.	Likelihood: 1 Consequence: 3 Risk: Low
	Turnover of staff results in loss of corporate knowledge	Likelihood: 3 Consequence: 3 Risk:	Train sufficient staff to provide succession  Train-the-trainer for knowledge transfer to increase sustainability of training	Likelihood: 2 Consequence: 3 Risk:
	Forecasts not regular or consistent	Likelihood: 2 Consequence: 3 risk: Moderate	Operationalise analysis of data and production of products using standard operating procedures supporting software.	Likelihood: 1 Consequence: 3 Risk: Low
	Farmers don't receive weather information in a timely manner and/or in a form that is not easily understood.	Likelihood: 3 Consequence: 3 risk: Moderate	Feedback on the usefulness of the information to be provided to AGRITEX and DR&SS to enable improved tailoring of products	Likelihood: 1 Consequence: 2 Risk: Low

Activity	Unmitigated Impacts	Likelihood of Impact Consequence	of and Avoidance and Mitigation Measures	Likelihood of Impact Consequence and post mitigation
			Use multiple information dissemination channels, including SMS-based advisories and incorporate indigenous knowledge into formal information products	
<i>Activity 3.3: Capacity building for farmers and local institutional staff on effective use of weather, climate and hydrological information</i>	Poor maintenance of equipment and storage of data can lead to lose of sustainability of initiative.	Likelihood: 3 Consequence: 3 risk: Moderate	Select equipment that is low and or easy to maintain eg low cost total replacement AWS's can save time and money. Utilisation of cloud storage minimises the risk of hardware failure and data loss.	Likelihood: 2 Consequence: 3 risk: Moderate
	Data transmission delays can reduce effectiveness of early warnings.	Likelihood: 3 Consequence: 3 risk: Moderate	Use of email/mobile (for manual stations), GPRS/GSM and Frontline SMS (for automatic stations) can minimise delays. Similarly, cloud storage can make data more accessible by a wider range of users further reducing potential for delays.	Likelihood: 2 Consequence: 2 Risk: Low
	Farmers don't trust weather forecasts or don't understand information/actions required	Likelihood: 3 Consequence: 3 risk: Moderate	DR&SS and AGRITEX officers to be first point of call for weather/climate related questions from farmers and communities. These outreach officers to be supported with training and printed materials.  Incorporate traditional knowledge into products. Conduct on-farm rainfall and temperature measurements to both calibrate/support forecast modelling and demonstrate to farmers the veracity of forecasts.	Likelihood: 1 Consequence: 3 Risk: Low



### 1.3.1 Assumptions Underpinning the Development of the Environmental and Social Management Framework

75. The following assumptions have been made in the preparation of this ESMF:

- none of the interventions will require the displacement of people;
- none of the interventions will be conducted in protected areas or sensitive/critical locations;
- appropriate erosion and sediment control will be undertaken during all stages of the projects; and
- there will be no release of pollution and/or chemicals as a result of the projects.

### 1.3.2 Purpose and Objectives of the Environmental and Social Management Framework

76. An EMSF is a management tool used to assist in minimising the impact to the environment and socially; and reach a set of environmental and social objectives. To ensure the environmental and social objectives of the projects are met, this EMSF will be used by the project implementers to structure and control the environmental management safeguards that are required to avoid or mitigate adverse effects on the environment.

77. The ESMF identifies steps for screening potential social and environmental issues and impacts of particular project activities as their specific locations and details are further defined, and for preparing and approving appropriate action plans for avoiding, and where avoidance is not possible, reducing, mitigating and managing adverse impacts.

78. The environmental and social objectives of the projects are to:

- improve the water supply in the targeted areas and introduce water conservation measures;
- provide locally relevant weather forecasts to farmers so that better use of water resources is made and adequate measures are undertaken prior to any extreme event;
- improve communication and cooperation between various stakeholders
- encourage good management practices through planning, commitment and continuous improvement of environmental practices;
- minimise or prevent the pollution of land, air and water pollution;
- protect native flora, fauna and important ecosystems;
- comply with applicable laws, regulations and standards for the protection of the environment;
- adopt the best practicable means available to prevent or minimise environmental impact;
- describe monitoring procedures required to identify impacts on the environment;
- provide a mechanism for dealing with grievances; and
- provide an overview of the obligations of GoZ, beneficiaries and UNDP staff and contractors in regard to environmental obligations.

79. The EMSF will be updated from time to time by the implementing Project Management Unit (PMU)/contractor in consultation with the UNDP staff and GoZ to incorporate changes in the detailed design phase of the projects.

### 1.3.3 Screening Procedure of the Environmental and Social Management Framework

80. Initial screening was undertaken using UNDPs Social and Environmental Screening Procedure (SESP). Further assessment of the proposed activities was undertaken, and risks and potential mitigations presented (Table 3). The UNDP SES and GCF ESS applies to all phases of the project, therefore, during project implementation, it may be necessary to screen sub-projects and/or sub-activities prior to implementation. Selection of appropriate sub-projects and detailed design of sub-projects will be done in conjunction with local people as part of the early implementation. Screening will be done against the UNDP SESP (Annex 1). MEWC and UNDP are responsible for ensuring that screening of sub-projects and public disclosure occurs. Any sub-projects that meet the criteria of the Exclusion List (below) will not be considered further.

### 1.3.3.1 Exclusion List

81. No activities considered potentially “high-risk” will be permitted
82. In addition, project activities will be screened against the following “negative list” or “exclusion list”. The following sub-projects or activities will be deemed ineligible for the Building climate resilience of vulnerable agricultural livelihoods in southern Zimbabwe project if they:
- Involve significant conversion or degradation of natural habitats and/or may cause measurable adverse impacts to critical natural habitats;
  - Risk the introduction of alien and potentially invasive alien species;
  - May negatively affect endangered species;
  - Involve physical or economic displacement of people;
  - Could result in damage or loss to cultural heritage;
  - Do not meet minimum design standards with poor design or construction quality, particularly if located in vulnerable areas;
  - Require or involve:
    - Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements;
    - Purchase, application or storage of harmful pesticides or hazardous materials;
    - Production or activities involving forced labour / harmful child labour;
    - Production or trade in wood or other forestry products from unmanaged forests;
    - Trade in wildlife or wildlife products regulated under CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora).

### 1.3.3.2 Screening of sub-projects

83. This section sets out a process for screening sub-projects and associated elements during project implementation. Any sub-project and associated elements developed during the Project should be evaluated according to the screening process described below to determine the potential risk of associated environmental and social impacts, and associated mitigation options.
84. The process consists of the following steps:
- Step 1: at the time of preparing Terms of Reference for each sub-project or associated element (TA or services delivery component), each sub-project or associated element shall be screened and categorized, with a decision made to proceed with further project formulation, or to “design out” potential adverse impacts, by modifying the proposal to ensure it remains within Category B or C, and identify relevant safeguards instruments.  
  
Sub-projects will be screened against Zimbabwean Law as part of step 1. Activities will be assessed against MEWC requirements to determine whether an EIA will be required. MEWC is responsible to assess any SEAs or EIAs that may be required as per Zimbabwean law.
  - Step 2: Preparation of required safeguards instruments (EIA &/or ESMP) including stakeholder consultations as necessary
  - Step 3: Review of prepared safeguards instruments as per Zimbabwe and UNDP safeguards policies; additional stakeholder consultations as deemed necessary.
  - Step 4: Disclosure of approved instruments locally and on UNDP’s website. In the case of Category B sub-projects, the EIA and/or ESMP will be disclosed at least 30 days in advance of the approval decision. The safeguard reports will be available in both English and the local language. The reports will be submitted to GCF and made available to GCF via electronic links in both UNDPs and the GCF’s website as well as in locations convenient to affected peoples in consonance with requirements of GCF Information Disclosure Policy and Section 7.1 of (Information Disclosure) of GCF Environmental and Social Policy.

- Step 5: Implementation – monitoring, reporting and remedial measures. Ongoing consultations and community engagement.

### 1.3.4 Land Issues

85. The country has four main systems of land tenure: the freehold land that is private, State land, communal and leasehold resettlement systems. With the exception of the resettlement tenure system, the other three systems are largely part of the country's colonial heritage.<sup>8</sup>
86. The freehold tenure system is prevalent in the commercial farming sector which consists of large scale and small-scale commercial farmers and occupy about 32% of the country's land area of 39 million ha. This sector is characterised by individual land ownership. The registered landowner has exclusive property rights and full control and responsibility over the land and everything attached to it except to the extent that ownership and exclusive control over the land and some natural resources may be limited by statutory provisions. Such limitations relate to changes in land use, controls over public water courses, felling of indigenous timber resources and controls on wildlife.
87. The communal land tenure system is governed by the Communal Lands Act and is applicable to 42% of Zimbabwe's land area, where approximately 66% of the country's population resides. According to the Communal Lands Act, all communal land is vested in the State President who has powers to permit its occupation and utilisation in accordance with the Act. Communal Area inhabitants thus have usufructuary rights over communal land. Rural District Councils, on the other hand, have a dispensation to allocate land to qualified persons on behalf of the State.
88. Resettlement areas cover 10% of the country. They have no title and are a product of the post-independence period which aimed to relieve population pressure in communal areas.<sup>9</sup>
89. Zimbabwe's agricultural land is predominantly under communal ownership, while resettled farmers under the A1 and A2 models own land through permits and 99-year leases respectively. The Zimbabwe Land Commission is reviewing all land tenure systems in the country to ensure they promote investment and security of tenure as reported in the 2016 Zimbabwe Land Commission annual report.<sup>10</sup>
90. Under the *Traditional Leaders Act 1998*, Chiefs, Headmen and Village Heads are appointed as officers. These local officers have a wide range of powers in local administration regarding, among other things, grazing, allocation of communal land and communal land use, irrigation and use of natural resources (24). In 2000, traditional leaders were put on the central government payroll; this has led to them playing an increasingly active role in land administration. However, power and authority for land administration remains vested with the central State, as the owner of all communal and most resettlement land

### 1.3.5 Indigenous Peoples

91. The Government of Zimbabwe does not identify any specific group as indigenous, arguing that all Zimbabweans are indigenous peoples. As stated in the Government of Zimbabwe's Indigenisation and Economic Empowerment Act, (2007, Part 1(2): Interpretation)<sup>11</sup>:
92. "Indigenisation" means a deliberate involvement of indigenous Zimbabweans in the economic activities of the country, to which hitherto they had no access, so as to ensure the equitable ownership of the nation's resources;
93. "Indigenous Zimbabwean" means any person who, before the 18th April, 1980, was disadvantaged by unfair discrimination on the grounds of his or her race, and any descendant of such person, and includes any company, association, syndicate or partnership of which indigenous Zimbabweans form the majority of the members or hold the controlling interest."
94. However, there are two peoples who self-identify as indigenous in Zimbabwe. These are the:
  - Tshwa (Tyua, Cuaa) San, who are found in the Tsholotsho District of Matabeleland North Province and the Bulalima-Mangwe District of Matabeleland South Province in western Zimbabwe

<sup>8</sup> [http://www.fao.org/gender-landrights-database/country-profiles/countries-list/land-tenure-and-related-institutions/en/?country\\_iso3=ZWE](http://www.fao.org/gender-landrights-database/country-profiles/countries-list/land-tenure-and-related-institutions/en/?country_iso3=ZWE)

<sup>9</sup> Shumba, E.M. 2001 A Brief on the Forestry Outlook Study 1. <http://www.fao.org/docrep/004/AC429E/AC429E02.htm>

<sup>10</sup> <http://www.herald.co.zw/land-tenure-systems-under-review/>

<sup>11</sup> Hitchcock, Begbie-Clench & Murwira 2016. IWGIA Report 22 – The San in Zimbabwe – Livelihoods, Land and Human Rights.

- Doma (Wadoma, Vadema) of Chapoto Ward in Guruve District and Mbire District of Mashonaland Central Province and Karoi District of Mashonaland West Province in the Zambezi Valley of northern Zimbabwe.
95. There are approximately 2,600 Tshwa and 1,050 Doma in Zimbabwe, making up 0.03% of the country's population. Approximately 800-1,000 are settled in Bulilima-Mangwe<sup>12</sup>. Tshwa generally live on communal land, which is considered State land.
96. The San, like other people in Zimbabwe, fit the definition of “indigenous Zimbabweans” in that they were disadvantaged by discrimination and had little or no access to the nation's resources at the time of independence in April 1980<sup>13</sup>
97. Sub-sections within the Zimbabwe Constitution of relevance to indigenous peoples include promoting actions to empower “all marginalised persons, groups and communities in Zimbabwe” and the protection of “indigenous knowledge systems, including knowledge of the medicinal and other properties of animal and plant life” (Government of Zimbabwe 2013). The Constitution addresses the elimination of discrimination and promotes investment and basic service provision to marginalised groups and areas. There are also a number of other Zimbabwean legislative instruments relevant to the San. Furthermore, Zimbabwe is also a signatory to various international conventions relevant to indigenous peoples.
98. No San people are known to live in any of the areas where the project will be operating, nor were any specific issues related to the San raised during the consultation during the project proposal development phase. Consultation will be ongoing and will be inclusive. This ESMF outlines the requirements for communication, social inclusion and grievance redress, which apply to all stakeholders, including the Tshwa.
99. No pastoralist groups are present in the areas of project activities, nor will they be adversely impacted by the project.

### 1.4 OVERVIEW OF INSTITUTIONAL ARRANGEMENTS FOR THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK PLAN

100. The EMSF will be assessed for each sub-project by the GoZ and UNDP prior to any works being undertaken. The EMSF identifies potential risks to the environment and social matters from the projects and outlines strategies for managing those risks and minimising undesirable environmental and social impacts. Further, the EMSF provides a Grievance Redress Mechanism for those that may be impacted by the projects that do not consider their views have been heard.
101. The Ministry of Environment Water and Climate will be responsible for the supervision of the EMSF. The UNDP will gain the endorsement of the Ministry of Environment Water and Climate and the Government of Zimbabwe and will ensure the EMSF is adequate and followed. The PMU will ensure timely remedial actions are taken by the contractor where necessary.

#### 1.4.1 Administration

102. The Ministry of Environment Water and Climate will be responsible for the revision or updates of this document during the course of work. It is the responsibility of the person to whom the document is issued to ensure it is updated.
103. The Field Officer will be responsible for daily environmental inspections of the construction site. The Ministry of Environment Water and Climate will cross check these inspections by undertaking monthly audits.
104. The contractor will maintain and keep all administrative and environmental records which would include a log of complaints together with records of any measures taken to mitigate the cause of the complaints.
105. The contractor will be responsible for the day to day compliance of the ESMF.
106. The Ministry of Environment Water and Climate will be the implementing agency and will be responsible for the implementation and compliance with the ESMF via the collaborating partners and contractors. The ESMF will be part of any tender documentation.

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<sup>12</sup> ibid

<sup>13</sup> ibid

107. The Supervising Engineer/Project Manager will supervise the contractor, while the Ministry of Environment Water and Climate will be responsible for environment and social issues.

### 1.4.2 Capacity Building

108. The project includes a number of capacity building activities, both for the private and government sectors. Capacity building will include:

- training trainers to lead Farmer Field Schools
- hands-on farm schools (230), where lead farmers (6900) will be trained so that they can train additional farmers;
- farmer-to-farmer extension workshops for 69,000 farmers
- organisational and management training for Irrigation Management Committees (21), including training in interpretation of climate, weather and agricultural advisories so that they may better disseminate information and implement measures on their irrigation schemes;
- creation of multi-stakeholder Innovation Platforms to improve production and market linkages as well as value chain partnerships for specific crops
- train MSD, ZinWA, DR&SS/AGRITEX officials and community observers in collecting data, along with operating and maintaining automatic weather stations
- training of ZinWA in use of water resource models in partnership with University of Zimbabwe
- providing training to DoI, ZINWA and CMC staff in data analysis, modelling, forecasting and use/production of information products on water allocations and irrigation system design
- providing training to district and local level intermediaries - AGRITEX, MSD and IMC staff - in interpretation and dissemination of climate and weather information products for crop/water management and crop irrigation scheduling.

## 2 LEGAL AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MATTERS

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### 2.1 LEGISLATION, POLICIES AND REGULATIONS

109. The following key legislation is relevant to the project:

- *Agricultural Finance Act 1971* – An Act to provide for a company to make advances to persons engaged in agriculture and to make provision for its functions; to regulate the financial affairs of the Agricultural Finance Corporation; to provide for the establishment of schemes for the assistance of persons engaged in agriculture and for the implementation of such schemes; to set out the terms and conditions of an Agricultural Assistance Scheme providing for assistance as previously afforded by the Agricultural Assistance Board; and to provide for matters incidental to the foregoing.
- *Communal Land Act 2002* - This Act concerns Communal land. Communal land shall consist of land which, immediately before the 1st of February, 1983, was Tribal Trust Land in terms of the Tribal Trust Act, 1979 (Act No. 6 of 1979), subject to any additions thereto or subtractions therefrom made in terms of section 6 of this Act (sect. 3). Communal land shall vest in the President, who shall permit it to be occupied and used in accordance with this Act. Provisions of Part III deal with occupation and use of Communal Land.
- *Co-operative Societies Act 1990* - This Act provides rules relative to the constitution, registration, functioning and winding up of co-operative societies, establishes the National Co-operative Federation and the Central Co-operative Fund and makes provision in general for the development and organization of the cooperative movement in Zimbabwe.
- *Constitution of Zimbabwe 2013* - is officially the supreme law of Zimbabwe.
- *Environmental Management Act 2002* - The Environmental Management Act (EMA) 2002 is a framework legislation that establishes coordinated legal and institutional mechanisms to improve national capacity for management of the environment across sectors<sup>14</sup>. It provides for the Environmental Management Agency to manage all environmental issues in the country, including water quality and monitoring, land degradation and pollution management, which operates at national, provincial and district levels. It includes a provision for the establishment of an Environment Fund, used to provide environmental management services across the country. It stipulates Environmental Impact Assessments (EIA) to be undertaken in certain projects.
- *Farmers Licensing and Levy Act 1971* - This Act provides for the licensing of farmers and for the payment and collection of levies on certain agricultural products.
- *Fencing Act 1976* - An Act to establish fencing courts and to confer on them certain powers and functions; to regulate the alteration, construction, relocation, repair or replacement of dividing fences; to create certain offences in relation to fences; and to provide for matters incidental to or connected with the foregoing.
- *Fertilizers, Farm Feeds and Remedies Act 1952* - An Act to provide for the registration of fertilizers, farm feeds, sterilizing plants and certain remedies; to regulate and restrict the importation and sale of fertilizers, farm feeds and certain remedies, and substances of animal origin intended for the manufacture of fertilizers or farm feeds
- *Food and Food Standards Act 1971* - An Act to provide for the sale, importation and manufacture for sale of food in a pure state; to prohibit the sale, importation and manufacture for sale of food which is falsely described; and to provide for the fixing of standards relating to food
- *Hazardous Substances and Articles (Protective Clothing; Pesticides) Regulations, 1985* - These Regulations prescribe rules for the handling of hazardous pesticides and protective measures that shall be taken in contact with such substances. The rules concern also protection in case of application of pesticides. They also prohibit the handling of pesticides by pregnant women and children under 16 years of age.

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<sup>14</sup> EMA. 2002. Environmental Management Act 13 of 2002. Amended by Act 5/2004. GoZ, Harare.

- *Labour Relations Act 1984* -The Act outlawed discrimination against any employee on grounds of race, tribe, place of origin, political opinion, colour, creed, or sex, in respect of wages, promotion, recruitment, training and retrenchment.
- *Meteorological Services Act 2003* - An Act to provide for the functions, powers and administration of the Meteorological Services Department, and the legal framework for the levying of commercial rates for the Department's services to allow it to operate on a cost recovery basis; and to provide for matters incidental to or connected with the foregoing.
- *Noxious Weeds Act 1996* - An Act to make provision for the eradication of noxious weeds. It shall be the duty of every person responsible under this Act to clear or cause to be cleared any noxious weeds growing or occurring on the land for which they are responsible and to report on such weeds.
- *Pesticides Regulations 2012* - These Regulations provide rules relative to the registration, approval, import and export, labelling and packaging, advertisement and use of pesticides. They also provide for the registration of pest control operators, pesticide retailers and pesticide distributors. Registration shall be done with the registering officer. No pesticide may be sold unless registered in accordance with these Regulations and no pesticide that is registered may be substantially altered.
- *Plant Breeders Rights Act 2002* - to provide for the registration of plant breeders rights in respect of certain varieties of plants and the protection of the rights of persons who are registered as the holders of such rights
- *Plant Pests and Diseases Act 1989* - An Act to provide for the eradication and prevention of the spread of plant pests and diseases in Zimbabwe for the prevention of the introduction into Zimbabwe of plant pests and diseases.
- *Prevention of Discrimination Act 1998* - An Act to prohibit discrimination on the ground of race, tribe, place of origin, national or ethnic origin, political opinions, colour, creed or gender and to provide a remedy for persons injured by such discrimination; to prohibit the promotion of such discrimination.
- *Public Health Act 2002* - The Act creates the legal framework for the protection of public health in Zimbabwe for this purpose provides for powers of the administration to regulate and control slaughter of animals, food production and handling, food and water supply, animal diseases, etc.
- *Rural District Councils Act 1988* - An Act to provide for the declaration of districts and the establishment of rural district councils; to confer and impose functions upon rural district councils and provide for the administration of their areas
- *Rural Land Act 2002* - An Act to provide for the acquisition of State land and the disposal of State land; to provide for the control of the subdivision and lease of land for farming or other purposes; to provide for limiting of the number of pieces of land that may be owned by any person and the sizes of such land, and for prohibiting or restricting the rights of non-residents to own, lease or occupy land in Zimbabwe, and to provide for other matters incidental to and connected with the foregoing.
- *Rural Land (Farm Sizes) Regulations, 1999* - These Regulations place size limits on rural land in ownership. Rural land is basically land other than urban land, communal land or land owned by the State, a statutory body or a local authority. For the purposes of these Regulations, Zimbabwe shall be divided into classes of Natural Regions, depending upon the average rainfall during a year and the rainy season. Size limits for farms are specified for each class of Natural Region.
- *Rural Land Occupiers (Protection from Eviction) Act, 2001* - An Act to protect certain occupiers of rural land from eviction.
- *Seeds Act 1965* - An Act to provide for the registration of sellers of seed and seed testing laboratories; to regulate the importation, exportation and sale of seed; to provide for the testing, certification and inspection of seed
- *Traditional Leaders Act 1998* - This Act concerns the appointment of traditional leaders and local government in Zimbabwe, in particular with regard to land and water.
- *Urban Councils Act 1995* - to provide for the establishment of municipalities and towns and the administration of municipalities and towns by local boards, municipal and town councils; to provide for the conferring of town and city status on growth points, municipalities and towns; to provide for the declaration of local government areas and the administration of local government areas by local boards; to confer functions and powers and impose duties upon municipal and town councils and

local boards; to provide for the establishment of the Local Government Board and to provide for the functions thereof.

- *Water Act 1998* - An Act to provide for the development and utilisation of water resources of Zimbabwe; to provide for the establishment, powers and procedures of catchment councils and sub-catchment councils; to provide for the grant of permits for the use of water; to provide for the control of the use of water when water is in short supply; to provide for the acquisition of servitudes in respect of water; to provide for the protection of the environment and the prevention and control of water pollution; to provide for the approval of combined water schemes; to provide for matters relating to dam works. It includes a statutory instrument that decentralises the allocation of surface water and groundwater to the seven Catchment Councils (one per river basins).
- *Water (Combined Irrigation Schemes) Regulations 1962* - whenever two or more owners of land desire that in respect of a certain area a combined scheme of irrigation be authorized, a petition in terms of section 59 of the (Water) Act shall be submitted to the Minister in accordance with form "A" (sect. 3).
- *Zimbabwe National Water Authority Act 1998* - The ZINWA Act establishes the Zimbabwe National Water Authority and a Water Fund, financed by water user levy proceeds and an allocation from Parliament, to manage and develop water resources

110. During the implementation of the project and the updating of ESMF, a review of potentially relevant legislation shall be undertaken to determine any additional legislation and required permits that may be relevant.

## 2.2 ENVIRONMENTAL IMPACT ASSESSMENT IN ZIMBABWE

111. Zimbabwe initiated the process of environmental impact assessment (EIA) policy formulation in response to the Rio Local Agenda 21 Declaration (1992) resulting in the policy being codified in 1994. In 1997, EIA Guidelines were published and operationalised to guide EIA practitioners and stakeholders in the process of carrying out EIA studies. Although it was not law then, the EIA policy set out the parameters that needed to be followed by those who opted to subject their development initiatives to the EIA policy.

112. In 2003, the EIA policy was incorporated into law within the Environmental Management Act (Chapter 20:27) thereby giving the regulating authority more powers to regulate the application of the EIA system. Zimbabwe is one of the countries with well documented step-by-step guidelines for carrying out EIA studies and implementing environmental management plans.

113. In short, the EIA Guidelines require that a study of a project's anticipated impacts be done. Thereafter, mitigation measures are formulated to reduce or avoid the anticipated impacts. The result of the study is an EIA report which is submitted to the relevant authority for approval/acceptance. The proponent (or developer) has the responsibility to conduct an EIA study.

### 2.2.1 EIA process

114. The EIA process can be split into pre-certification and post-certification stages. The main steps of the EIA

115. Guidelines are:

- Screening – to determine if a full EIA study is required;
  - Prospectus – a document produced by the proponent informing the regulatory authority about the main environmental issues of the project which need to be considered during the EIA Study;
  - Terms of Reference (TOR) and Scoping – specify how the EIA study is to be conducted;
- (1) EIA Study – a scientific process of studying the baseline, the impacts and formulating the mitigation measures which culminates in the EIA report which contains the environmental management plan (EMP);
  - (2) EIA Report Review – decision point by the regulatory authority whether to allow the project to be implemented or not (acceptance);
  - (3) Terms and Conditions – if project is given acceptance, additional conditions can be included for implementation by the proponent; and,



- (4) EMP implementation and Monitoring and Auditing – execution of the mitigation measure including monitoring to ensure that the EMP is being implemented according plan and that any emergent impacts/ issues are addressed.

116. Therefore, the EIA Guidelines stipulate the content which is required in each of the sections of the EIA Report.

### 2.3 MULTILATERAL AGREEMENTS AND BIODIVERSITY PROTOCOLS

117. Zimbabwe is a signatory to a number of international and regional agreements and conventions, which are related to the environment. They include:

- 1945 Constitution Of The Food And Agriculture Organization Of The United Nations
- 1949 Convention on Road Traffic
- 1949 International Convention For The Permanent Control Of Outbreak Areas Of The Red Locust
- 1951 International Plant Protection Convention
- 1954 Phytosanitary Convention For Africa South Of The Sahara
- 1961 International Agreement For The Creation Of An International Office For Dealing With Contagious Diseases Of Animals
- 1971 Convention on Wetlands of International Importance especially as Waterfowl Habitat
- 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage
- 1973 Convention On International Trade In Endangered Species Of Wild Fauna And Flora
- 1979 Convention On The Conservation Of Migratory Species Of Wild Animals
- 1984 Third ACP-CEE Convention
- 1985 Vienna Convention for the Protection of the Ozone Layer
- 1986 Agreement relative to the establishment of the Limpopo Basin Permanent Technical Committee
- 1987 The Montreal Protocol on Substances that deplete the Ozone Layer
- 1987 Agreement On The Action Plan For The Environmentally Sound Management Of The Common Zambezi River System
- 1989 Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal
- 1989 Fourth ACP-EEC Convention
- 1990 Convention concerning Safety in the use of Chemicals at Work
- 1991 Convention On The Ban Of The Import Into Africa And The Control Of Transboundary Movement And Management Of Hazardous Wastes Within Africa
- 1991 Agreement For The Establishment Of Southern African Centre For Ivory Marketing
- 1992 United Nations Framework Convention on Climate Change
- 1992 Convention on Biological Diversity
- 1993 Convention Concerning The Prevention Of Major Industrial Accidents
- 1994 Agreement Establishing The World Trade Organization
- 1994 World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures
- 1994 United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification particularly in Africa
- 1995 Agreement On The Conservation Of African-Eurasian Migratory Waterbirds

- 1995 Protocol On Shared Watercourse Systems To The Treaty Of The Southern African Development Community
- 1996 Protocol On Energy To The Treaty Of The Southern African Development Community
- 1997 International Plant Protection Convention
- 1998 Convention On The Prior Informed Consent Procedure For Certain Hazardous Chemicals And Pesticides In International Trade
- 1999 Protocol On Wildlife Conservation And Law Enforcement To The Treaty Of The Southern African Development Community
- 2000 Cartagena Protocol on Biosafety on the Convention on Biological Diversity
- 2001 Convention of the African Energy Commission
- 2001 International Treaty on Plant Genetic Resources for Food and Agriculture
- 2001 Stockholm Convention on Persistent Organic Pollutants
- 2002 Protocol On Forestry To The Treaty Of The Southern African Development Community
- 2002 Treaty on the establishment of the Great Limpopo Transfrontier Park
- 2003 World Health Organization Framework Convention On Tobacco Control
- 2003 African Convention On The Conservation Of Nature And Natural Resources
- 2003 Agreement on the Establishment of the Limpopo Watercourse Commission
- 2004 Agreement on the Establishment of the Zambezi Watercourse Commission
- 2009 Statute of the International Renewable Energy Agency (IRENA)
- 2012 Agreement For The Establishment Of The African Risk Capacity (ARC) Agency
- 2013 Minamata Convention on Mercury
- 2015 Paris Agreement under the United Nations Framework Convention on Climate Change

## 2.4 CONTRIBUTION TO THE REGULATORY FRAMEWORK AND POLICIES

118. The proposed project is strongly aligned to Zimbabwe's economic development blueprint, ZIMASSET, which emphasises the need to address climate change in all sectors, in particular through the Food and Nutrition Security Cluster. The National Climate Change Response Strategy's priority pillars are adaptation in the water and agriculture sectors aimed at securing resilient livelihoods and food security of the rural poor. Through the improved land use management activities in the catchment, the project will also contribute to the implementation of the Environmental Management Act and Policy.
119. Local level environment management committees provided for in the EMA will be reactivated. Local level by-laws for sustainable land use activities will be strengthened, and traditional authorities' roles and influence will also be strengthened in the process.
120. Zimbabwe is developing a National Water Resources Master Plan. This project will build evidence that will inform the nature of strategies for agricultural water management. The project is also expected to influence the revision of the Zimbabwe Agriculture Extension Strategy and the support implementation of the Irrigation Master Plan so that climate change adaptation is formally incorporated in extension service provision to irrigation design and management and rain fed systems.

### 2.4.1 Alignment of National Policies and Laws with GCF Safeguard Standards

121. The project is designed to conform with GCF environmental and social policies and standards as outlined in the Environmental and Social Policy, Indigenous Peoples Policy and the specific Performance Standards. This section shows how Zimbabwe's National Policies and Laws are aligned to the specific Performance Standards. This will ensure that all GCF-financed activities will avoid adverse impacts on indigenous peoples, and when avoidance is not possible, will minimize, mitigate and/or compensate

appropriately and equitably for such impacts, in a consistent way and improve outcomes over time; promote benefits and opportunities; and respect and preserve indigenous culture, including the indigenous peoples' rights to lands, territories, resources, knowledge systems, and traditional livelihoods and practices. The project recognises that, as per the GCF Indigenous Peoples Policy, "indigenous peoples often have identities and aspirations that are distinct from mainstream groups in national societies and are disadvantaged by traditional models of mitigation, adaptation and development. In many instances, they are among the most economically marginalized and vulnerable segments of the population. The economic, social and legal status of indigenous peoples frequently limit their capacity to defend their rights to, and interests in, land, territories and natural and cultural resources, and may restrict their ability to participate in and benefit from development initiatives and climate change actions."

122. Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
123. Zimbabwe's National Environmental Policy (2003) defines the environmental and social objectives and principles that guide the project to achieve sound environmental and social performance; while the Environmental Management (Act 2002) sets a process for identifying the environmental and social risks and impacts of the project;
124. The ESMF incorporates as appropriate what is required by the GCF's ESMS that include: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.
125. Performance Standard 2: Labor and Working Conditions
126. Zimbabwe's Labor Relations Act 1984 protects the rights of contract employees and contains similar provisions of PS2 of GCF safeguard standard. The Act's provisions such as the obligations of employers to respect human dignity of employees, to take measures for occupational health and safety and has clear provisions that stipulate the obligations of the employee and the employer. It is unlawful to discriminate against female workers in matters of remuneration on the grounds of their sex; discriminate between workers on the basis of nationality, sex, religion, political outlook or any other condition. Project implementers need to ensure that these national laws and GCF performance standard are implemented at all project sites. While the PS2 recommends not to employ children under 18 years, in terms of the Labour Act, the minimum age for a person to sign a work contract is 15 years. The minimum age for a person to sign a contract of apprenticeship is 13 years (however, such persons would still be subject to parental or guardian authority). The law also prohibits employing persons below 18 years in work that may jeopardise their health, safety and/or morals.
127. In cases where there are misalignments between the national and international requirements, it is advisable to adopt the more stringent standard.
128. Performance Standard 3: Resource Efficiency and Pollution Prevention
129. Zimbabwe's *Environmental Management Act 2002* includes standards and penalties for waste management and disposal, and it can be concluded that the provisions of the proclamation align well with the GCF performance standard.
130. Performance Standard 4: Community Health, Safety, and Security
131. The Constitution of Zimbabwe, Public Health Act, Environmental Management Act, and the Hazardous Substances and Articles (Protective Clothing; Pesticides) Regulations include provisions that are relevant to the project, including civil security and citizen rights, control of slaughter of animals, food handling and production, public health system, prevention of pollution, safety in farming operations.
132. Performance Standard 5: Land Acquisition and Involuntary Resettlement
133. Land has been a source of political conflict in Zimbabwe since colonization. Redistribution of land under the 1992, the Land Acquisition Act and then subsequent "fast track" resettlement program in July 2000 led to unrest and violence. The new President of Zimbabwe, Emmerson Mnangagwa, has made a commitment to compensate farmers who were forced off their land during the fast track land reform programme of the 2000s.
134. The Constitution, Rural Land Act, The Rural Land Occupiers (Protection from Eviction) Act 2001, Communal Land Act 2002 contain provisions that cover in GCF PS5.
135. No land acquisition or resettlement is proposed as part of this project.

136. Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
137. Zimbabwe is a signatory to various multi-lateral agreements that look to protect and conserve biodiversity (refer Section 2.3). Additionally, the Environmental Management Act, Parks and Wildlife Act, and Plant Pests and Diseases Act all contain relevant provisions.
138. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) is a Zimbabwean community-based natural resource management programme. It is one of the first programs to consider wildlife as renewable natural resources, while addressing the allocation of its ownership to indigenous peoples in and around conservation protected areas
139. Performance Standard 7: Indigenous Peoples
140. There is no specific national legislation on this aspect as the Zimbabwean population is indigenous (noting the self-declared Tshwa San and Doma). In the Zimbabwean context this may not be relevant, but the provisions are relevant to any rural community in the selected project areas.
141. The provisions of PS 7 will be addressed through the appropriate implementation of this ESMF and Stakeholder Engagement Plan.
142. Performance Standard 8: Cultural Heritage
143. Zimbabwe's National Museums and Monuments Act 1972 recognises two types of heritage: monuments and relics – for relics, the date of 1890 is the definitive date. The Act established a Board of Trustees to provide “for the establishment and administration of museums” and “for the preservation of ancient historical and natural monuments, relics and other objects of historical or scientific value or interest.” Zimbabwean legislation does not recognise explicitly intangible heritage.
144. The project does not propose to undertake any activities in areas declared as monuments or relics. Further, close consultation will occur with local communities and landholders before any activities are undertaken, this will help to ensure that heritage values, particularly any intangible heritage, are not compromised.

### 3 IMPLEMENTATION AND OPERATION

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#### 3.1 GENERAL MANAGEMENT STRUCTURE AND RESPONSIBILITIES

145. The project will be implemented following UNDP's National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Zimbabwe, the Country Programme Document (CPD), and as policies and procedures outlined in the UNDP Programme and Operations Policies and Procedures.
146. The Implementing Partner for this project is the Ministry of Environment, Water and Climate (MEWC). MEWC is accountable to UNDP for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. UNDP, in agreement with the Government of Zimbabwe, will provide implementation support (support to NIM) and oversight through the UNDP Country Office in Zimbabwe.
147. The following parties have entered into agreements with MEWC to assist in successfully delivering project outcomes and are directly accountable to MEWC as outlined in the terms of their agreement: AGRITEX, Department of Irrigation (DOI), Department of Research and Specialist Services and Department of Economics and Markets under Ministry of Lands, Agriculture and Rural Resettlement (MLARR) as well as Meteorological Services Department (MSD) and Zimbabwe National Water Authority (ZinWA) under MEWC will serve as the Responsible Parties for the execution of the CSA, climate information and irrigation related activities of the project respectively. Their responsibilities will be broadly assigned as follows:
- DOI will be responsible for the implementation of activities under Output 1 including climate proofing of irrigation infrastructure and equipment in 20 irrigation schemes; training of 20 IMCs, support to O&M and networking of IMCs for learning.
  - AGRITEX will be responsible for the implementation of activities under Output 1 and 2, with the support of the DR&SS including training of farmers in CSA and water conservation techniques through Farmer Field Schools, support to farmer to farmer peer learning and extension, training in business development and farming as a business.
  - DR&SS will be responsible for the implementation of activities under Output 2 related to innovation platforms, with the support of AGRITEX. Activities include the setup of 7 multi-stakeholder innovation platforms, development of crop and livestock specific strategies for production and market linkages and facilitation of partnerships with private sector.
  - MSD and ZINWA will be jointly responsible for output 3 with participation from AGRITEX and DR&SS related to capacity building of MSD, ZINWA, DR&SS and AGRITEX on collecting data and maintaining equipment; analysis of weather information and development of climate information products targeted small holder farmers, engagement with private sector on services and business models for climate information services and enhance and develop existing DR&SS and AGRITEX knowledge centres.
  - MSD will take responsibility for the installation and maintenance of weather stations, ZINWA for hydrological stations and together ZINWA and MSD will be responsible for strengthening the hydro-meteorological data transmission and processing system to enable localized weather, climate and hydrological model forecast generation.
  - The Climate Change Management Department (MEWC) and the Department of Markets and Economics (MLARR) will mainly take up a coordinating role and work closely with the PMU to manage the project.
148. The project proposed here will be established and delivered using the structure of the current UNDP Zimbabwe Resilience Building Fund (ZRBF). The ZRBF was established in May 2015 through an agreement between UNDP and the MLARR to implement the Zimbabwe Resilience Building Fund. Currently three donors - DFID, EU and SIDA - have contributed to the ZRBF.
149. The ZRBF is guided by a Steering Committee which is co-chaired by government (MLARR) and donors (EU, DFID and SIDA). UNDP is part of the quorum of the Steering Committee. The ZRBF Steering Committee, on a consensus basis, makes key policy decisions, and guides the implementing partners and responsible parties in the execution of the projects. The ZRBF Steering Committee is supported by

the ZRBF Secretariat and Project Management Unit (PMU) which manages and oversees the day-to-day work of the ZRBF and prepares technical inputs for consideration of the ZRBF Steering Committee.

150. Day-to-day management of the GCF project is to follow a similar structure i.e. a UNDP assisted NIM arrangement with its ‘steering’ committee. Under this second NIM being proposed, the Government of Zimbabwe will be represented by the Ministry of Environment Water and Climate (MEWC). The current proposal will be delivered using the structure of the current UNDP Zimbabwe Resilience Building Fund in order to maximize on technical synergies e.g. by building on expertise and experience of ZRBF consortia in CSA and complementary investments between the current proposed GCF project and the work of the ZRBF to build climate resilience.
151. A high-level project management structure is shown in *Figure 2 Project organisation structure*. The existing NIM arrangement of the ZRBF will remain unchanged to ensure continued effective management of that programme, including the ZRBF call-for-proposal mechanism. It is proposed, however, that ZRBF and GCF project boards include the same stakeholders and that board meetings are held consecutively.
152. The ZRBF Programme Management Unit (PMU) (currently fully funded through a separate EU grant) is the anchor point for programme and operational support to the ZRBF and will be joined with the PMU to the GCF. Based on an analysis of the workload and staffing needs, the proposed project has budgeted with a fully staffed GCF PMU, as it was not possible to cost share staff with the ZRBF PMU that is already at 100% workload. However, rather than duplicating leadership capacity, operational synergies will be leveraged by drawing on the leadership structures of the ZRBF PMU in establishing the GCF PMU. The proposed management structure will reduce transaction costs for partners (both national and development), and hence further operational synergies will be realized.

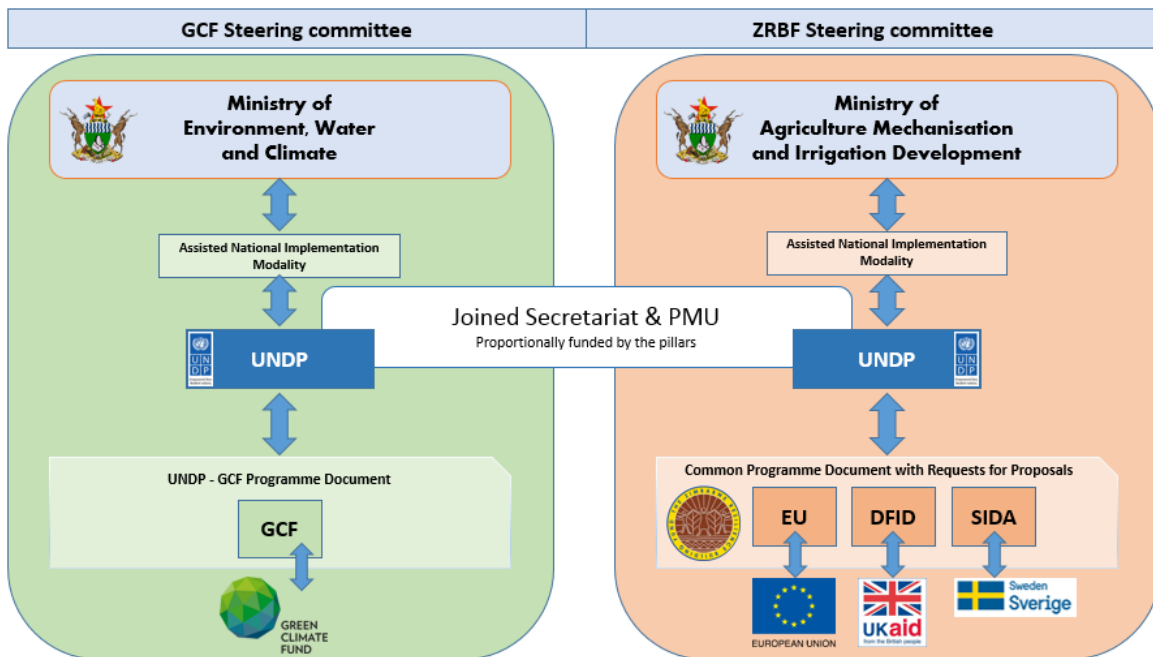


Figure 2 Project organisation structure

## 3.2 PROJECT DELIVERY AND ADMINISTRATION

### 3.2.1 Project Delivery

153. The project will be delivered on the ground via the MEWC, the Department of Agricultural Extension (AGRITEX), Department of Irrigation, Zimbabwe National Water Authority (ZINWA), Meteorological Services Department (MSD), and ICRISAT through the Department of Research and Specialist Services (DR&SS) as described above. In addition, collaboration with local government, existing NGOs and local communities is expected.

### 3.2.2 Administration of EMSF

154. As the implementing agency, MEWC will be responsible for responsible for the implementation of the EMSF via the delivery organisations.
155. The EMSF will be part of any tender documentation. The MEWC will be responsible for the revision or updates of this document during the course of work. It is the responsibility of the person to whom the document is issued to ensure it is the most up to date version.
156. The UNDP and MEWC are accountable for the provision of specialist advice on environmental and social issues to the delivery organisations (eg contractors and/or NGOs) and for environmental and social monitoring and reporting. The MEWC or its delegate will assess the environmental and social performance of the delivery organisations (eg contractors) in charge of delivering each component throughout the project and ensure compliance with the EMSF. During operations the delivery organisations will be accountable for implementation of the EMSF. Personnel working on the projects have accountability for preventing or minimising environmental and social impacts.
157. The Field Officer will be responsible for daily environmental inspections of the project/construction site. The MEWC or its delegate will cross check these inspections by undertaking monthly audits.
158. The delivery organisation eg contractor will maintain and keep all administrative and environmental records, which would include a log of complaints together with records of any measures taken to mitigate the cause of the complaints. Copies of records will regularly provided to MEWC and UNDP for inclusion in annual performance reports to GCF
159. The delivery organisation will be responsible for the day to day compliance of the EMSF

### 3.2.3 ESMPs, Environmental procedures, site and activity-specific work plans/instructions

160. The ESMF provides overarching objectives for environmental and social thematic areas. Based on sub-project risk screening, site specific EMSPs (or or activity specific environmental procedures or work plans) may be required. Environmental procedures provide a written method describing how the management objectives for a particular environmental element are to be obtained. They contain the necessary detail to be site or activity-specific and are required to be followed for all construction works. Site and activity-specific work plans and instructions are to be issued and will follow the previously successful work undertaking similar projects by the UNDP, DFID, EU and SIDA.
161. The need for ESMPs and/or environmental procedures should be based on the outcomes of screening of sub-projects and stakeholder engagement (appropriate stakeholder is central to the identification of potential risks and development of suitable mitigation measures). An indicative outline for an ESMP is provided in Annex 2. ESMPs may draw on the issues/actions already outlined in the ESMF, adding to them to make them site or activity specific.
162. Environmental procedures, site and activity specific work plans can be prepared by MEWC or its delegate (including the contractor) but must be approved by MEWC prior to site work commencing.

### 3.2.4 Environmental incident reporting

163. Any incidents, including non-conformances to the procedures of the EMSF are to be recorded using an Incident Record and the details entered into a register. For any incident that causes or has the potential to cause material or serious environmental harm, the field officer shall notify the Project Manager as soon as possible. The delivery organisation/contractor must cease work until remediation has been completed as per the approval of MEWC.

### 3.2.5 Daily and weekly environmental inspection checklists

164. A daily environmental checklist is to be completed at each work site by the field officer and maintained within a register. A weekly environmental checklist is to be completed and will include reference to any issues identified in the daily checklists completed by the field officers. The completed checklist is to be forwarded to MEWC for review and follow-up if any issues are identified.

### 3.2.6 Corrective Actions

165. Any non-conformances to the EMSF are to be noted in weekly environmental inspections and logged into the register. Depending on the severity of the non- conformance, the field officer may specify a corrective

action on the weekly site inspection report. The progress of all corrective actions will be tracked using the register. Any non-conformances and the issue of corrective actions are to be advised to MEWC.

### 3.2.7 Review and auditing

166. The EMSF and its procedures are to be reviewed at least every two months by UNDP staff and MEWC. The objective of the review is to update the document to reflect knowledge gained during the course of project delivery/construction and to reflect new knowledge and changed community standards (values).

167. The EMSF will be reviewed and amendments made if:

- There are relevant changes to environmental conditions or generally accepted environmental practices; or
- New or previously unidentified environmental risks are identified; or
- Information from the project monitoring and surveillance methods indicate that current control measures require amendment to be effective; or
- There are changes to environmental legislation that are relevant to the project; or
- There is a request made by a relevant regulatory authority; or
- Any changes are to be developed and implemented in consultation with UNDP Staff and MEWC. When an update is made, all site personnel are to be made aware of the revision as soon as possible eg through a toolbox meeting or written notification.

### 3.2.8 Monitoring, evaluation and reporting

168. As previously noted, MEWC is responsible for the monitoring and evaluation of the performance of the ESMF. Field Officers and/or contractors will be responsible for daily checks and reporting any environmental incidents to MEWC.

169. MEWC or its delegate will undertake monthly audits. The ESMF and associated documents will be reviewed every two months by UNDP and MEWC to ensure that they remain appropriate to the projects needs.

170. In addition, separate monitoring and evaluation assessments may be undertaken as required eg mid-term and terminal evaluations. Such evaluations should provide evidence of positive and negative performance and summarise lessons learnt and/or make recommendations for improvement that can be incorporated into the ESMF.

171. MEWC will collate all monitoring and evaluation data and present summary reports at Steering Committee meetings. The reports will provide the basis for the annual environmental and social performance report by UNDP, as the Accredited Entity, to GCF.

## 3.3 TRAINING

172. Delivery organisations have the responsibility for ensuring systems are in place so that relevant employees, contractors and other workers are aware of the environmental and social requirements for construction, including the EMSF.

173. All project personnel will attend an induction that covers health, safety, environment and cultural requirements.

174. All workers engaged in any activity with the potential to cause serious environmental harm (e.g. handling of hazardous materials) will receive task specific environmental training.



## 4 COMMUNICATION

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### 4.1 PUBLIC CONSULTATION AND ENVIRONMENTAL AND SOCIAL DISCLOSURE

175. The EMSF includes public consultation as part of the stakeholder engagement plan. The project was discussed with a wide range of stakeholders including relevant government departments, industry groups, NGOs, and individual community members and approved by Government. Extensive on-ground consultation has been undertaken during the design of the project (as well as during the earlier projects that this project is aiming to upscale) and it is expected that consultation with any affected communities will continue. Appendix 3 contains a summary of the consultation undertaken and outlines the stakeholder engagement planned during the following phases of the project. It is anticipated that based on the communities' needs, the projects will be fully accepted.
176. The UNDP and MEWC will develop and release updates on the project on a regular basis to provide interested stakeholders with information on project status. Updates may be via a range of media eg print, radio, social media or formal reports. A publicized telephone number will be maintained throughout the project to serve as a point of contact for enquiries, concerns and complaints. All enquiries, concerns and complaints will be recorded on a register and the appropriate manager will be informed. All material must be published in English, Shona, Ndebele, and Tshwa as appropriate.
177. Where there is a community issue raised, the following information will be recorded:
- time, date and nature of enquiry, complaint or concern;
  - type of communication (e.g. telephone, letter, personal contact);
  - name, contact address and contact number;
  - response and investigation undertaken as a result of the enquiry, complaint or concern; and
  - actions taken and name of the person taking action.
178. Some enquiries, complaints and concerns may require an extended period to address. The complainant(s) will be kept informed of progress towards rectifying the concern. All enquiries, complaints and concerns will be investigated, and a response given to the complainant in a timely manner. A grievance redress mechanism has been included in the ESMF to address any complaints that may not be able to be resolved quickly.
179. Nominated PMU/contractor staff will be responsible for undertaking a review of all enquiries, complaints and concerns and ensuring progress toward resolution of each matter.

### 4.2 COMPLAINTS REGISTER AND GRIEVANCE REDRESS MECHANISM

180. During the construction and implementation phases of any project, a person or group of people can be adversely affected, directly or indirectly due to the project activities. The grievances that may arise can be related to social issues such as eligibility criteria and entitlements, disruption of services, temporary or permanent loss of livelihoods and other social and cultural issues. Grievances may also be related to environmental issues such as excessive dust generation, damages to infrastructure due to construction related vibrations or transportation of raw material, noise, traffic congestions, decrease in quality or quantity of private/ public surface/ ground water resources during irrigation rehabilitation, damage to home gardens and agricultural lands etc.
181. Should such a situation arise, there must be a mechanism through which affected parties can resolve such issues in a cordial manner with the project personnel in an efficient, unbiased, transparent, timely and cost-effective manner. To achieve this objective, a grievance redress mechanism has been included in EMSF for this project.
182. The project allows those that have a complaint or that feel aggrieved by the project to be able to communicate their concerns and/or grievances through an appropriate process. The Complaints Register and Grievance Redress Mechanism set out in this EMSF are to be used as part of the project and will provide an accessible, rapid, fair and effective response to concerned stakeholders, especially any vulnerable group who often lack access to formal legal regimes.

183. While recognising that many complaints may be resolved immediately, the Complaints Register and Grievance Redress Mechanism set out in this EMSF encourages mutually acceptable resolution of issues as they arise. The Complaints Register and Grievance Redress Mechanism set out in this EMSF has been designed to:

- be a legitimate process that allows for trust to be built between stakeholder groups and assures stakeholders that their concerns will be assessed in a fair and transparent manner;
- allow simple and streamlined access to the Complaints Register and Grievance Redress Mechanism for all stakeholders and provide adequate assistance for those that may have faced barriers in the past to be able to raise their concerns;
- provide clear and known procedures for each stage of the Grievance Redress Mechanism process, and provides clarity on the types of outcomes available to individuals and groups;
- ensure equitable treatment to all concerned and aggrieved individuals and groups through a consistent, formal approach that, is fair, informed and respectful to a complaint and/or concern;
- to provide a transparent approach, by keeping any aggrieved individual/group informed of the progress of their complaint, the information that was used when assessing their complaint and information about the mechanisms that will be used to address it; and
- enable continuous learning and improvements to the Grievance Redress Mechanism. Through continued assessment, the learnings may reduce potential complaints and grievances.

184. Eligibility criteria for the Grievance Redress Mechanism include:

- Perceived negative economic, social or environmental impact on an individual and/or group, or concern about the potential to cause an impact;
- clearly specified kind of impact that has occurred or has the potential to occur; and explanation of how the project caused or may cause such impact; and
- individual and/or group filing of a complaint and/or grievance is impacted, or at risk of being impacted; or the individual and/or group filing a complaint and/or grievance demonstrates that it has authority from an individual and or group that have been or may potentially be impacted on to represent their interest.

185. Local communities and other interested stakeholders may raise a grievance/complaint at all times to the MEWC. Affected local communities should be informed about the EMSF provisions, including its grievance mechanism and how to make a complaint.

### 4.2.1 Complaints register

186. Where there is a community issue raised, the following information will be recorded:

187. A complaints register will be established as part of the project to record any concerns raised by the community during construction. Any complaint will be advised to the UNDP and MEWC within 24 hours of receiving the complaint. The complaint will be screened. Following the screening, complaints regarding corrupt practices will be referred to the UNDP for commentary and/or advice along with the MEWC.

188. Wherever possible, the project team will seek to resolve the complaint as soon as possible, and thus avoid escalation of issues. However, where a complaint cannot be readily resolved, then it must be escalated.

189. A summary list of complaints received, and their disposition must be published in a report produced every six months.

### 4.2.2 Grievance mechanism

190. The Grievance Redress Mechanism has been designed to be problem-solving mechanism with voluntary good-faith efforts. The Grievance Redress Mechanism is not a substitute for the legal process. The Grievance Redress Mechanism will as far as practicable, try to resolve complaints and/or grievances on terms that are mutually acceptable to all parties. When making a complaint and/or grievance, all parties must act at all times, in good faith and should not attempt to delay and or hinder any mutually acceptable resolution.

191. In order to ensure smooth implementation of the Project and timely and effectively addressing of problems that may be encountered during implementation, a robust Grievance Redress Mechanism, which will enable to the Project Authorities to address the grievances of the stakeholders of the Project has been established.
192. All complaints regarding social and environmental issues can be received either orally (to the field staff), by phone, in complaints box or in writing to the UNDP, MEWC or the Contractor. A key part of the grievance redress mechanism is the requirement for the project proponent and construction contractor to maintain a register of complaints received at the respective project site offices. All complainants shall be treated respectfully, politely and with sensitivity. Every possible effort should be made by the project proponent and construction contractor to resolve the issues referred to in the complaint within their purview. However, there may be certain problems that are more complex and cannot be solved through project-level mechanisms. Such grievances will be referred to the Grievance Redress Committee. It would be responsibility of the MEWC to solve these issues through a sound / robust process.
193. The Grievance Redress Mechanism has been designed to ensure that an individual and/or group are not financially impacted by the process of making a complaint. The Grievance Redress Mechanism will cover any reasonable costs in engaging a suitably qualified person to assist in the preparation of a legitimate complaint and/or grievance. Where a complaint and/or grievance is seen to be ineligible, the Grievance Redress Mechanism will not cover these costs.
194. Information about the Grievance Redress Mechanism and how to make a complaint must be placed at prominent places for the information of the key stakeholders.
195. The Safeguards officer in the PMU will be designated as the key officer in charge of the Grievance Redress Mechanism. The Terms of Reference for these positions (as amended from time to time) will have the following key responsibilities:
- a. coordinate formation of Grievance Redress Committees before the commencement of constructions to resolve issues;
  - b. act as the focal point at the PMU on Grievance Redress issues and facilitate the resolution of issues within the PMU;
  - c. create awareness of the Grievance Redress Mechanism amongst all the stakeholders through public awareness campaigns;
  - d. assist in redress of all grievances by coordinating with the concerned parties;
  - e. maintain information on grievances and redress;
  - f. monitor the activities of MEWC on grievances issues; and
  - g. prepare the progress for monthly/quarterly reports.
196. A two-tier Grievance Redress Mechanism structure has been developed to address all complaints in the project. The first trier redress mechanism involves the receipt of a complaint at the Ward and/or District level. The stakeholders are informed of various points of making complaints (if any) and the PMU collect the complaints from these points on a regular basis and record them. This is followed by coordinating with the concerned people to redress the Grievances. The Safeguards Officer of the PMU will coordinate the activities at the respective District level to address the grievances and would act as the focal point in this regard. The office responsible for redress at District level is the District Administrator and at ward level it would be the traditional leader and/or the Councillor, who would coordinate with the Safeguards and Gender Manager of the PMU and MEWC in redressing the grievances. The designated officer of the Local Authorities is provided with sufficient training in the procedure of redress to continue such systems in future.
197. The complaints can be made orally (to the field staff), by phone, in complaints box or in writing to the UNDP, MEWC or the Contractor. Complainants may specifically contact the Safeguards Officer and request confidentiality if they have concerns about retaliation. In cases where confidentiality is requested (i.e. not revealing the complainant's identity to UNDP, MEWC and/or the Construction Contractor). In these cases, the Safeguards Officer will review the complaint, discuss it with the complainant, and determine how best to engage project executing entities while preserving confidentiality for the complainant.

198. As soon as a complaint is received, the Safeguards Officer would issue an acknowledgement. The District Administrator upon receiving the complaint should try to obtain relevant basic information regarding the grievance and the complainant and will immediately inform the Safeguards Officer in the PMU.
199. The PMU will maintain a Complaint / Grievance Redress register at the District Level. Keeping records collected from relevant bodies is the responsibility of PMU.
200. After registering the complaint, the Safeguards Officer will study the complaint made in detail and forward the complaint to the concerned officer with specific dates for replying and redressing the same. The Safeguards Officer will hold meetings with the affected persons / complainant and then attempt to find a solution to the complaint received. If necessary, meetings will be held with the concerned affected persons / complainant and the concerned officer to find a solution to the problem and develop plans to redress the grievance. The deliberations of the meetings and decisions taken are recorded. All meetings in connection with the Grievance Redress Mechanism, including the meetings of the Grievance Redress Committee, must be recorded. The Safeguards Officer for the Grievances Redress Mechanism will be actively involved in all activities.
201. A Community Project Implementation Committee would be formed to oversee the first tier of the Grievance Redress Mechanism. The Community Project Implementation Committee would include:
- Representatives from relevant community groups
  - Safeguards Officer PMU (may be a dual role for a member of the PMU).
202. The resolution at the first tier will be normally be completed within 15 working days and the complaint will be notified of the proposed response through a disclosure form. The resolution process should comply with the requirements of the Grievance Redress Mechanism in that it should, as far as practicable, be informal with all parties acting in good faith. Further, the Grievance Redress Mechanism should, as far as practicable, achieve mutually acceptable outcomes for all parties.
203. Should the grievance be not resolved within this period to the satisfaction of the complainant, the grievance will be referred to the next level of Grievance Redress Mechanism. If the social safeguard and gender officer feels that adequate solutions can be established within the next five working days, the officer can decide on retaining the issue at the first level by informing the complainant accordingly. However, if the complainant requests for an immediate transfer to the next level, the matter must be referred to the next tier. In any case, where the issue is not addressed within 20 working days, the matter is referred to the next level.
204. Any grievance related to corruption or any unethical practice should be referred immediately to the Zimbabwe Office of the Attorney General and the Office of Audit and Investigation within the UNDP in New York.
205. The Grievance Redress Committee formed at every Province level would address the grievance in the second tier. A Grievance Redress Committee will be constituted for every Province.
206. The Safeguard Officer from the PMU will coordinate with the respective Commissioner of Local Government in getting these Committees constituted for each Province and get the necessary circulars issued in this regard so that they can be convened whenever required.
207. The Terms of Reference for the Grievance Redress Committee are:
- providing support to the affected persons in solving their problems;
  - prioritize grievances and resolve them at the earliest;
  - provide information to the PMU and MEWC on serious cases at the earliest opportunity;
  - Coordinate with the aggrieved person/group and obtain proper and timely information on the solution worked out for his/her grievance; and
  - study the normally occurring grievances and advise PMU, National and District Steering Committee on remedial actions to avoid further occurrences.
208. The Grievance Redress Committee will hold the necessary meetings with the aggrieved party/complainant and the concerned officer and attempt to find a solution acceptable at all levels. The Grievance Redress Committee would record the minutes of the meeting.

209. Grievance Redress Committee will communicate proposed responses to the complainant formally. If the proposed response satisfies the complainant, the response will be implemented, and the complaint closed. In cases where a proposed response is unsatisfactory to the complainant, the Grievance Redress Committee may choose to revise the proposed response to meet the complainant's remaining concerns, or to indicate to the complainant that no other response appears feasible to the Grievance Redress Committee. The complainant may decide to take a legal or any other recourse if s/he is not satisfied with the resolutions due to the deliberations of the three tiers of the grievance redress mechanism.
210. In addition to the project-level and national grievance redress mechanisms, complainants have the option to access UNDP's Accountability Mechanism, with both compliance and grievance functions. The Social and Environmental Compliance Unit investigates allegations that UNDP's Standards, screening procedure or other UNDP social and environmental commitments are not being implemented adequately, and that harm may result to people or the environment. The Social and Environmental Compliance Unit is housed in the Office of Audit and Investigations and managed by a Lead Compliance Officer. A compliance review is available to any community or individual with concerns about the impacts of a UNDP programme or project. The Social and Environmental Compliance Unit is mandated to independently and impartially investigate valid requests from locally impacted people, and to report its findings and recommendations publicly.
211. The Stakeholder Response Mechanism offers locally affected people an opportunity to work with other stakeholders to resolve concerns about the social and environmental impacts of a UNDP project. Stakeholder Response Mechanism is intended to supplement the proactive stakeholder engagement that is required of UNDP and its Implementing Partners throughout the project cycle. Communities and individuals may request a Stakeholder Response Mechanism process when they have used standard channels for project management and quality assurance and are not satisfied with the response (in this case the project level grievance redress mechanism). When a valid Stakeholder Response Mechanism request is submitted, UNDP focal points at country, regional and headquarters levels will work with concerned stakeholders and Implementing Partners to address and resolve the concerns. Visit [www.undp.org/secu-srm](http://www.undp.org/secu-srm) for more details. The relevant form is attached at the end of the EMSF (Appendix 4).

## 5 KEY ENVIRONMENTAL AND SOCIAL INDICATORS

212. This section identifies the key environmental and social indicators identified for the project and outlines respective management objectives, potential impacts, control activities and the environmental performance criteria against which these indicators will be judged (i.e. audited).
213. This section further addresses the need for monitoring and reporting of environmental performance with the aim of communicating the success and failures of control procedures, distinguish issues that require rectification and identify measures that will allow continuous improvement in the processes by which the projects are managed.

### 5.1 CLIMATE

214. As a tropical country Zimbabwe experiences high temperatures, but because of its high altitude, most of the country experiences sub-tropical rather than tropical climatic conditions. Mean monthly temperatures range from 15°C in the cool season to 24°C in the hot season.
215. Approximately 20 percent of Zimbabwe’s landscape is above 1,200m above sea level, while 60 percent is between 600m and 1,200m. Altitude ranges from 500m in the Lowveld, which lies mainly in the south, west and north-west, to 2,400m in the Highveld (average 1,200-1,700m). The Highveld stretches from the central northern areas to the Eastern Highlands, and here frost is occasionally experienced in isolated locations during winter.
216. Zimbabwe is generally a semi-arid country with mean annual precipitation ranging from 337mm in the South to 1,110 mm per annum in the Eastern Highlands. The average annual precipitation is cited to be between 652 and 674.5mm.

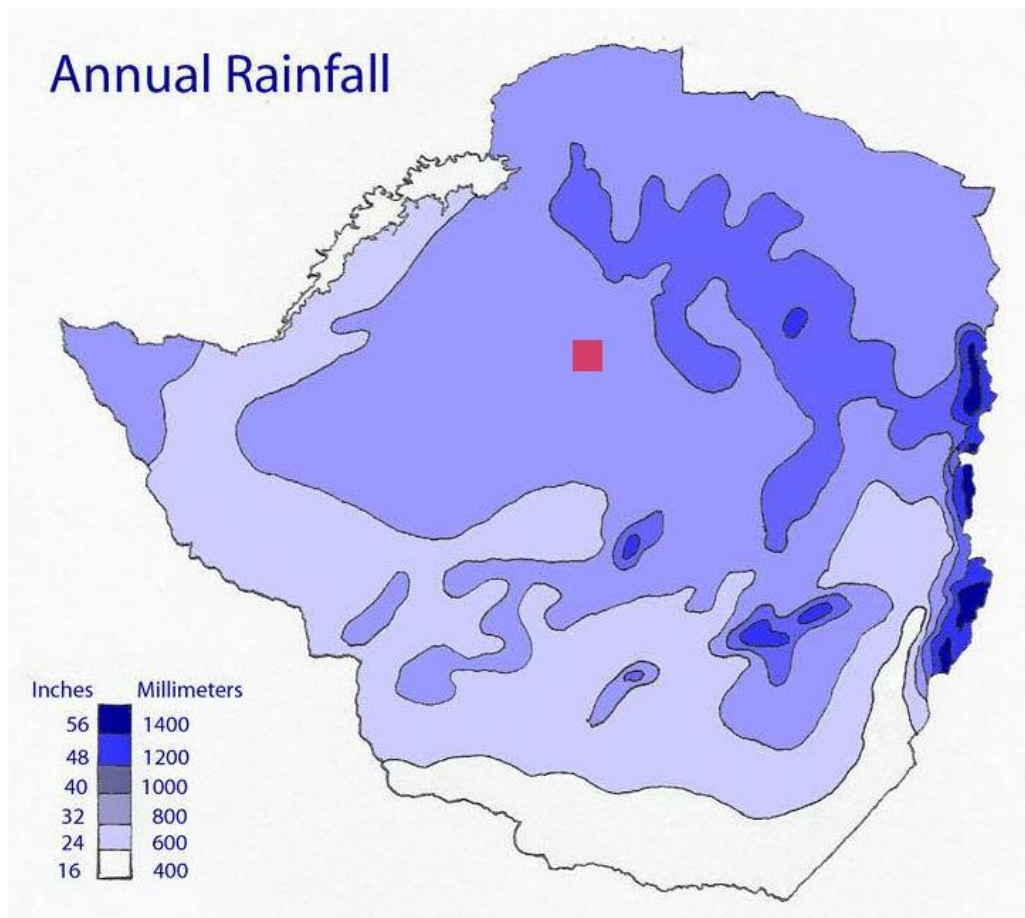


Figure 3 Annual rainfall patterns in Zimbabwe<sup>15</sup>.

<sup>15</sup> Original source: FAO (<http://runyamhere.blogspot.com.au/2011/06/glimpse-at-zimbabwe-rainfall-vegetation.html>)

217. The country experiences four seasons; cool season from mid-May to August, hot season from September to mid-November, the main rainy season from mid-November to mid-March, and the post rainy and warm season of mid-March to mid-May (Figure 4).

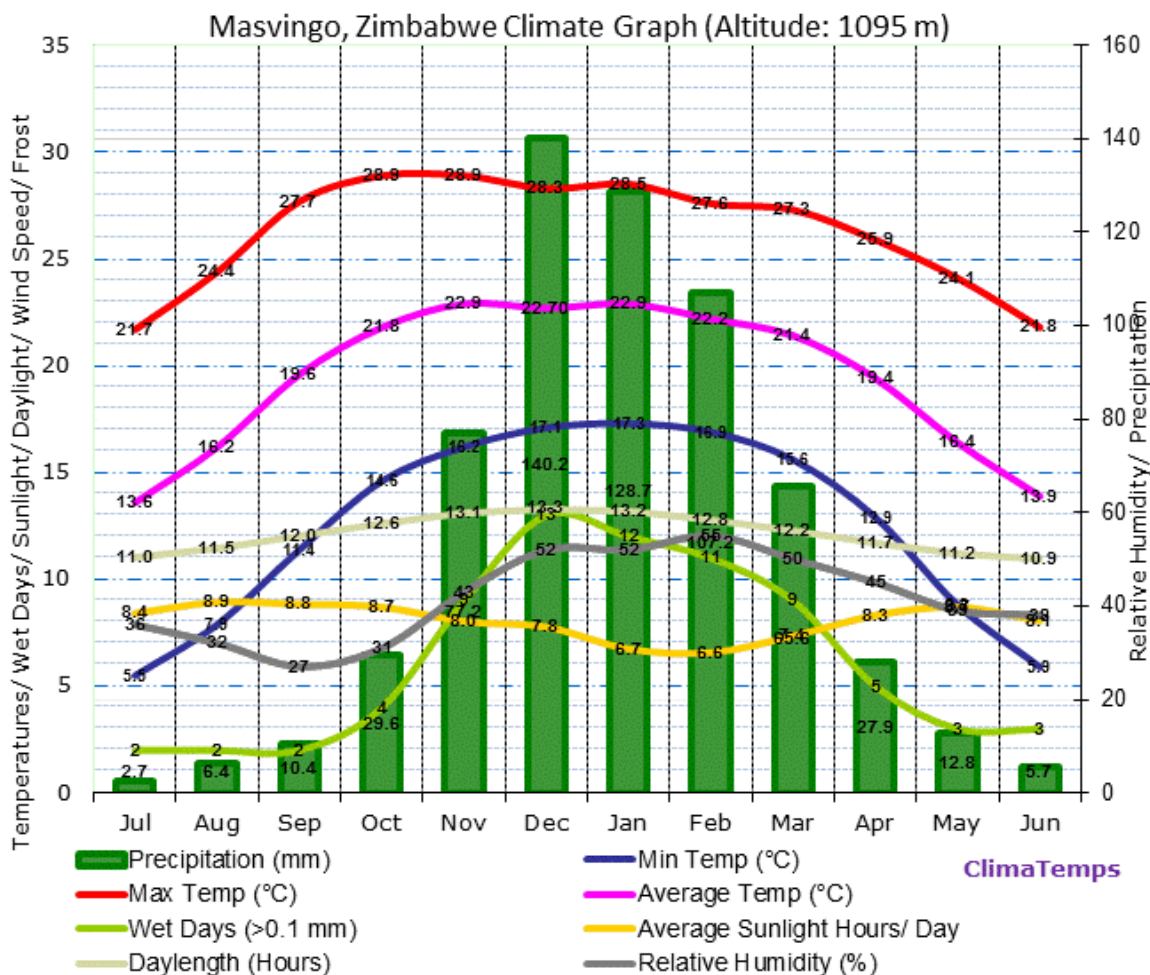


Figure 4 Average climatic conditions in Masvingo.<sup>16</sup>

218. A distinct feature of the country’s climate is a prolonged dry season of 7-8 months (April to October) and a short rainy season of 4 months (mid-November to mid-March)<sup>17,18</sup>. Zimbabwe’s planting season accordingly begins in October/November, and the harvest season starts from around March/April. The heaviest rains usually fall in December, often with short, sharp storms and mid-season droughts experienced in January, and drizzly rain (perfect for crops) in February, before the dry season starts again (April to October; Zimbabwe’s winter and spring).

<sup>16</sup> <http://www.masvingo.climatemps.com/graph.php>

<sup>17</sup> UNDP. 2014. Scaling Up Adaptation: Project Document. UNDP Environmental Finance Services.

<sup>18</sup> Kuri, F. et al. 2014. Predicting maize yield in Zimbabwe using dry dekads derived from remotely sensed Vegetation Condition Index. International Journal of Applied Earth Observation and Geoinformation. 33, pp.39-46.

## 5.2 ECOLOGY

### 5.2.1 Background

219. Zimbabwe has many variations of tropical climate ranging from heat and aridity to cool temperature and high rainfall especially in the highland areas. The Highland area is home to tropical evergreen and hardwood forest, while Miombo woodland dominates the lowlands. There are over 350 species of mammals, 500 species of birds, snakes and lizards found in Zimbabwe.<sup>19</sup>

220. The following are the ecological regions of Zimbabwe:

- Kalahari Acacia-Baikiaea Woodlands (terrestrial)
- Southern Africa Bushveld (terrestrial)
- Southern Miombo Woodlands (terrestrial)
- Zambezian Baikiaea Woodlands (terrestrial)
- Zambezian Mopane Woodlands (terrestrial)
- Eastern Zimbabwe Montane Forest-Grassland Mosaic (terrestrial)
- Zambezi River-Lowveld (freshwater)
- Zambezi River-Mulanje (freshwater)
- Zambezi River-Eastern Zimbabwe Highlands (freshwater)
- Zambezi River-Zambezian Plateau Highveld (freshwater)
- Zambezi River-Middle Zambezi Luangwa (freshwater)

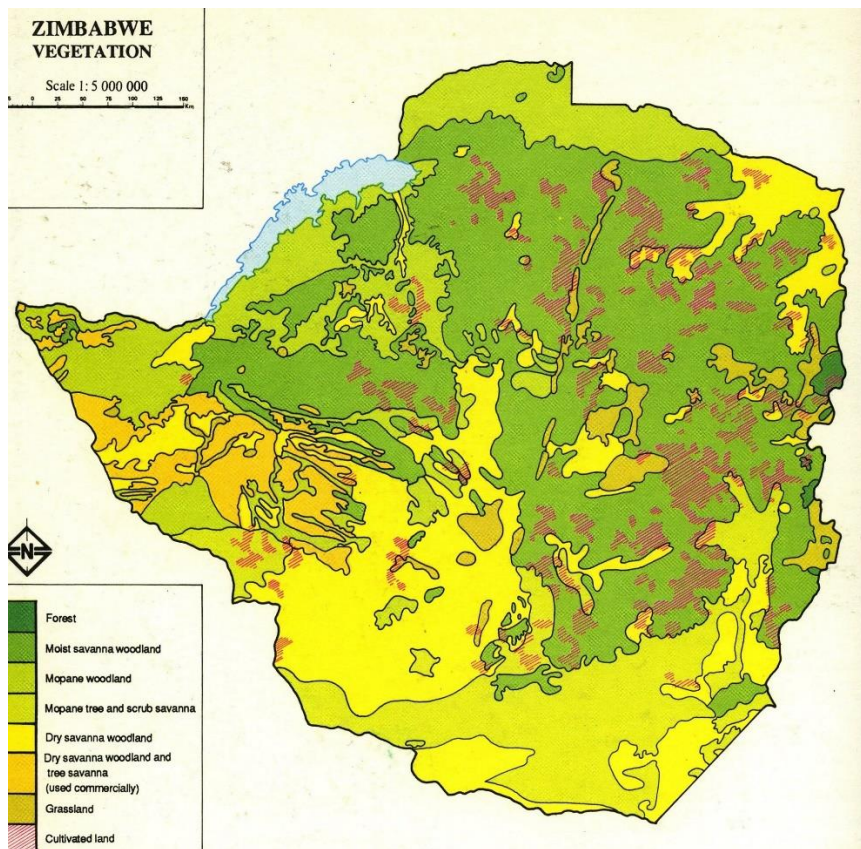


Figure 5 Natural vegetation types in Zimbabwe<sup>20</sup>

<sup>19</sup> <http://www.worldatlas.com/articles/ecological-regions-of-zimbabwe.html>

<sup>20</sup> <http://exploringafrica.matrix.msu.edu/module-thirty-activity-one/>



221. The vegetation type is relatively uniform across large areas in Zimbabwe. Bushveld or thorny acacia savanna and miombo or dry open woodland dominate the central and western plateau. In the south and southeast, which are dry lowlands, thorny scrub and baobabs are extensive.
222. The wildlife of Zimbabwe is mostly located in remote or rugged terrain in the national parks and private wildlife ranches; it is spread over the landscapes of miombo woodlands and thorny acacia or kopje. Zimbabwe's parks are home to the African 'big five' (lions, leopards, elephants, buffalo and rhino), as well as a range of other predators such as the serval, civet, jackal and hyena. The country also has a variety of hoofed animals, such as species of kudu, antelope, duiker, impala and bush buck.
223. The ecological regions of Zimbabwe are rapidly transforming due to the influences of such human activities as overgrazing their livestock, expansion of settlements, crop cultivation, and poaching. Figure 6 provides an example of the intensity of cropping across the country. As a result, the climatic stability of these ecological regions and the ability to support its native inhabitants is reducing

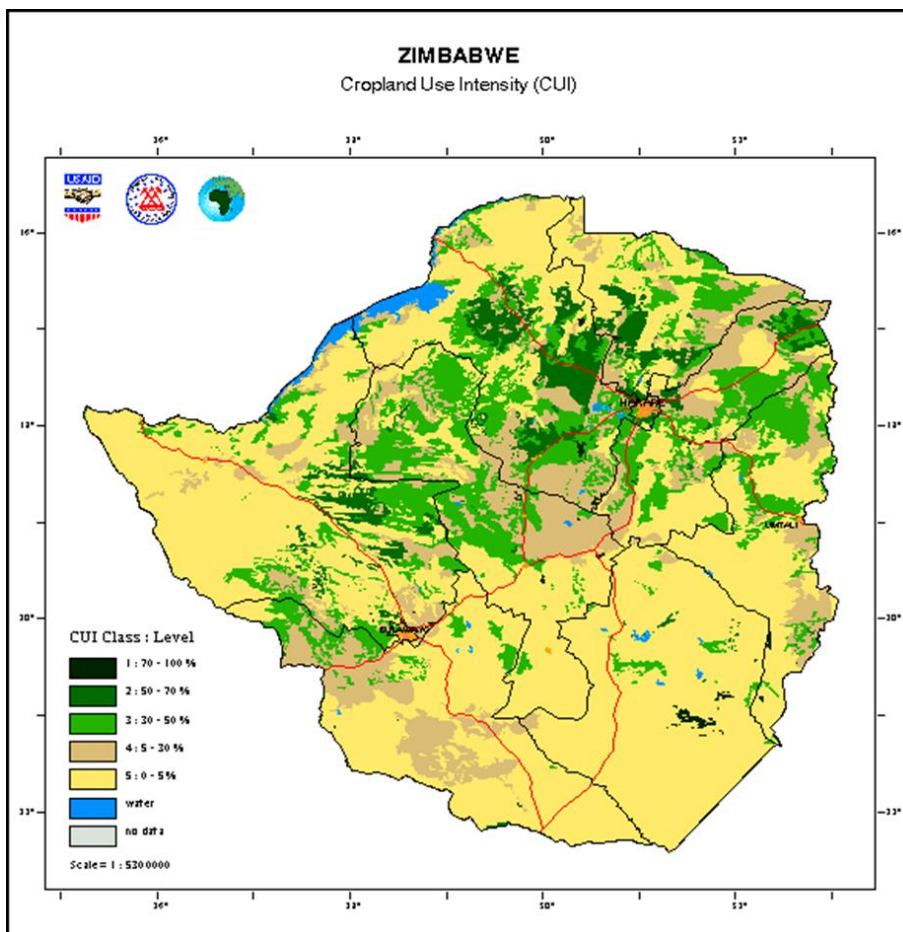


Figure 6 Cropland use intensity.<sup>21</sup>

#### 5.2.1.1 Invasive Species:

224. Invasive alien species are plants, animals, pathogens (agents that cause disease) and other organisms that are non-native to an ecosystem, which may cause economic or environmental harm or adversely affect human health. They impact adversely on biodiversity, resulting in the decline or elimination of native species — through competition, destruction, or transmission of pathogens — and the disruption of local ecosystems and ecosystem functions.

<sup>21</sup> <http://hdimagegallery.net/zimbabwe+climate+map?image=1277907715>

225. The following plant species are specified as invasive alien species in Zimbabwe:

- Aquatic Species
  - Water hyacinth (*Eichhornia crassipes*)
  - Kariba weed (*Salvinia molesta*)
  - Water lettuce (*Pistia stratiotes*)
  - Water fern (*Azolla filiculoides*)
  - Eared water moss (*Salvinia auriculata*)
- Terrestrial Species
  - Jointed cactus (*Opuntia aurantiaca*)
  - Moonflower cactus (*Harrisia martinii*)
  - Cactus rosea (*Opuntia fulgida*)
  - Wild oats (*Avena fatua*)
  - Dodder (*Cuscuta* spp.)
  - Cherry pie (*Lantana camara*)

226. Figure 7 shows the distribution of two of the terrestrial species – *L. camara* and *Opuntia* spp., which are known to cause direct harm to humans or domestic animals.

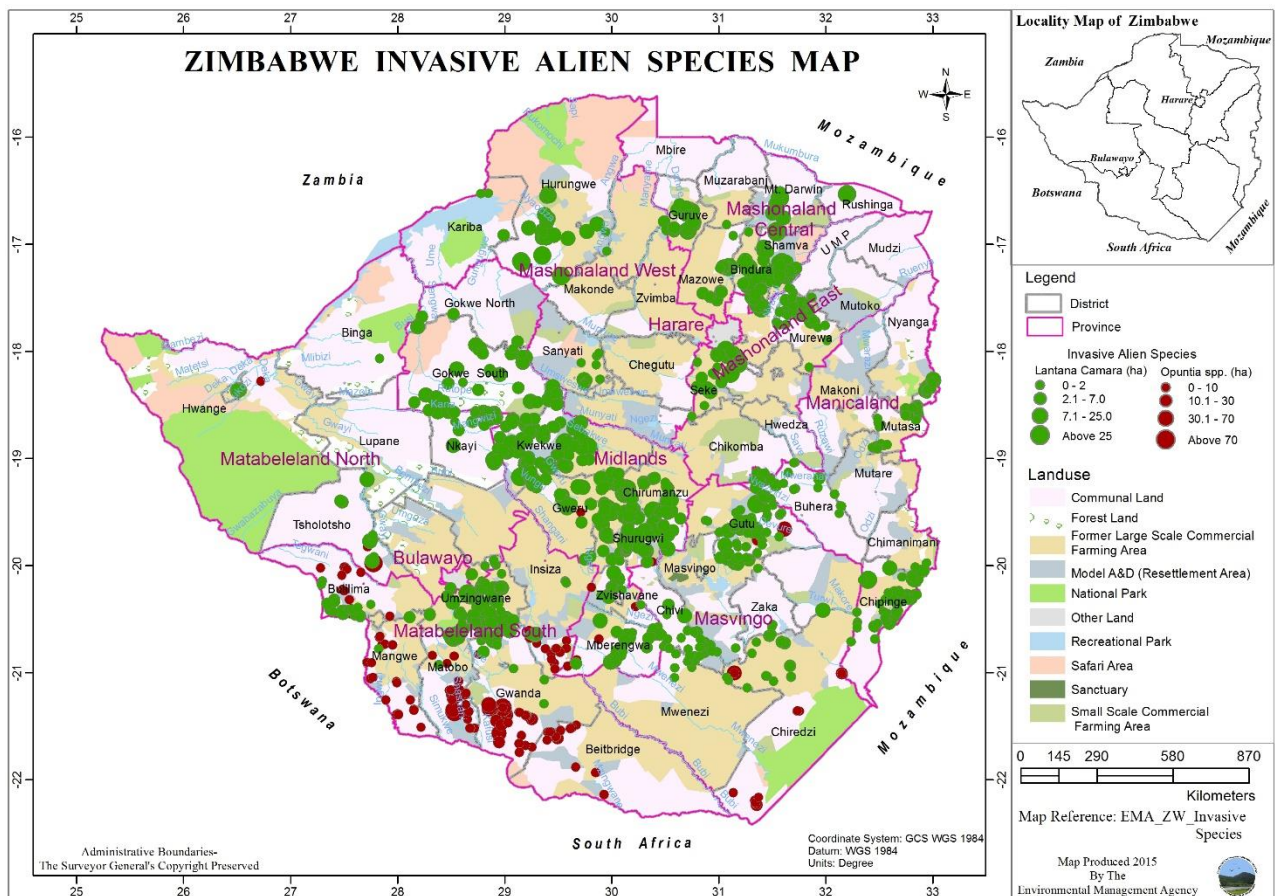


Figure 7 Map of density of cover of two invasive species: *L.camara* and *Opuntia* spp

227. The simplest and most important way to fight invasive species is to prevent their introduction and establishment. Invasive organisms can easily be transported on living plants or fresh products such as fruit. Many pests can be found in recently killed plant material including firewood, lumber, and wooden

packing material. Avoiding the long-range movement of these materials is a simple way to slow the spread of pests.

### 5.2.2 Performance Criteria

228. The following performance criteria are set for the construction of the projects:

- no clearance of vegetation outside of the designated clearing boundaries;
- no death to native fauna as a result of clearing activities;
- no deleterious impacts on aquatic environments and terrestrial habitats;
- no introduction of new weed species as a result of construction activities; and
- no increase in existing weed proliferation within or outside of any project footprint as a result of construction activities.

### 5.2.3 Monitoring

229. A flora and fauna monitoring program will be implemented (Table 4).

230. Weed monitoring will be undertaken and appropriate action taken in the event of alien or noxious species being identified.

231. The delivery organisation will when undertaking works, will compile a weekly report to MEWC outlining:

- any non-conformances to this EMSF;
- the areas that have been rehabilitated during the preceding week; and
- details of the corrective action undertaken.

### 5.2.4 Reporting

232. All flora and fauna monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC and EMA must be notified in the event of any suspected instances of death to native fauna and where vegetation is detrimentally impacted.

Table 4 Flora and Fauna Management Measures

Issue	Control Activity (and Source)	Action Timing	Responsibility	Monitoring and Reporting
FF1. Habitat loss and disturbance of fauna	FF1.1 Limit vegetation clearing and minimise habitat disturbance through adequate protection and management of retained vegetation.	During construction	Field officer	Daily and maintain records
	FF1.2: Minimise noise levels and lighting intrusion throughout construction and operation in the vicinity of any sensitive locations.	During construction	Field officer	Daily and maintain records
	FF1.3: Ensure that all site personnel are made aware of sensitive fauna/habitat areas and the requirements for the protection of these areas.	During construction	Contractor	Daily and maintain records
	FF1.4 Minimise disturbance to on-site fauna and recover and rescue any injured or orphaned fauna during construction and operation.	During construction	Contractor	Daily and maintain records, report
FF2. Introduced flora and weed species	FF2.1: Implement an ESCP to reduce the spread of weeds through erosion and sediment entering any waterways and therefore spreading.	Pre and during construction	Contractor	Maintain records
	FF2.2: Revegetate disturbed areas using native and locally endemic species that have high habitat value.	During construction	Contractor / Farmers	As required and maintain records
	FF2.3: Minimise disturbance to mature remnant vegetation, particularly canopy trees.	During construction	Field officer	Daily and maintain records
	FF2.4: Seed is to be weed free	Operation	Field Officer	Maintain records
	FF2.5: Prevent streambank cultivation which results in fertilisers being washed into water bodies, increasing nutrient load with resultant weed (eg water hyacinth) blooms.	Design and operation	Field officer / Farmers	Maintain records

Issue	Control Activity (and Source)	Action Timing	Responsibility	Monitoring and Reporting
FF2. Introduced flora and weed species	FF2.6: Environmental weeds and noxious weeds within the project footprints shall be controlled.	During and post construction	Field officer	Weekly and maintain records
FF3 Biosecurity	FF3.1 Seed to confirm to Zimbabwean biosecurity requirements	Operation	IMC/AGRITEX	Maintain records
	FF3.2 No GMO to be used as part of the project	Operation	IMC	Maintain records

## 5.3 GROUNDWATER

### 5.3.1 Background

#### 5.3.1.1 Geology and Topography

233. Figure 8 shows an overview of the geology of Zimbabwe. Key geological environments within the project region are described in Table 5.

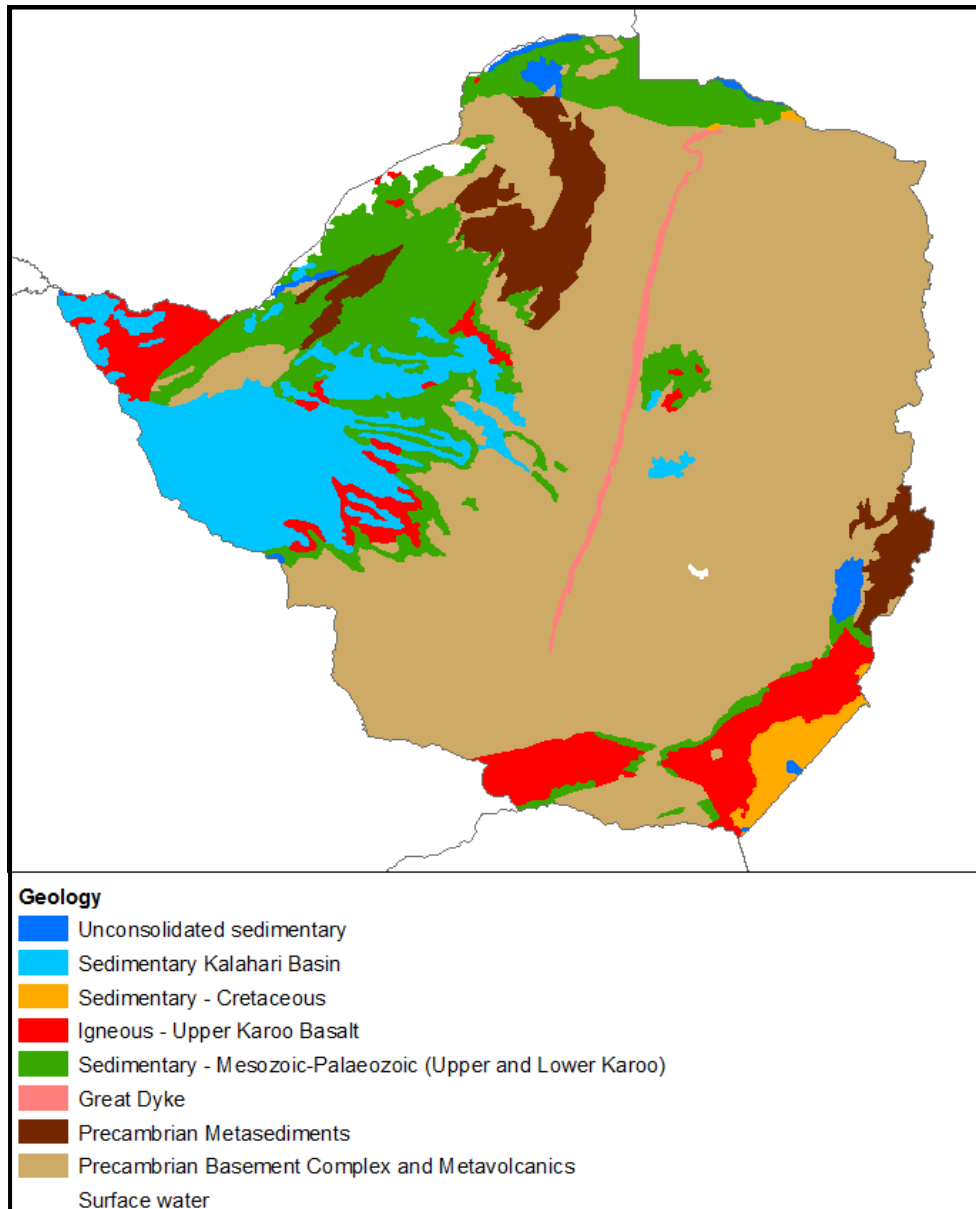


Figure 8 A simplified overview of the geology at a national scale. Source: British Geological Survey<sup>22</sup>

<sup>22</sup> [http://earthwise.bgs.ac.uk/images/d/d5/Zimbabwe\\_Geology2.png](http://earthwise.bgs.ac.uk/images/d/d5/Zimbabwe_Geology2.png)

Table 5 Key geological environments within the project region<sup>23</sup>

Key Formations	Period	Lithology	Structure
<b>Unconsolidated sedimentary</b>			
	Quaternary (Pleistocene to Recent)	Unconsolidated sedimentary sequences of alluvial clay, sand and gravel of varying thickness in the river valleys.	There are reported alluvium thicknesses of up to 70-80m in Sabi Valley, and 45 m in the Zambezi Valley. Elsewhere, the unconsolidated deposits are generally less than 25m thick.
<b>Sedimentary – Cretaceous-Tertiary</b>			
	Cretaceous sedimentary	Mudstones, fine grained arkose, grit-conglomerate and sandstone bands	
<b>Igneous - Upper Karoo Basalt</b>			
Upper Karoo Basalts	Batoka	Triassic	The Batoka basalts comprise amygdaloidal lava flows with interbedded tufa horizons.
<b>Sedimentary – Mesozoic-Palaeozoic (Upper and Lower Karoo)</b>			
Upper and Lower Karoo	Carboniferous to Permian		These arenaceous and argillaceous sequences are conventionally subdivided into the Upper and Lower Karoo. The Upper Karoo comprises the Forest Sandstone and the Escarpment Grit. The Lower Karoo consists of the Madumabisa Mudstone and the Upper and Lower Wankie Hwange Sandstone. This thick series of alternating sandstones, siltstones and mudstone is overlain by the Upper Karoo Batoka basalts
<b>Precambrian Metasediments</b>			
Umkondo Group; Deweras, Lomagundi and Piriwiri formations (all part of the Magondi orogenic belt); Sijarira and Tengwe River groups.	Mid to Late Precambrian (Proterozoic)		These Precambrian metasedimentary rocks include shales, phyllites, quartzites, sandstones, siltstones, conglomerates, limestones and dolomites as well as minor basic metavolcanics. The Deweras, Lomagundi and Piriwiri formations are all part of the Magondi orogenic belt. The Piriwiri Formation comprises phyllites with subordinate quartzites. The Lomagundi Formation comprises slates and shales with minor quartzites. The Tengwe River Group comprises shales. The Sijarira Group comprises shales, siltstones and fine-grained sandstones.

<sup>23</sup> [http://earthwise.bgs.ac.uk/index.php/Hydrogeology\\_of\\_Zimbabwe](http://earthwise.bgs.ac.uk/index.php/Hydrogeology_of_Zimbabwe)

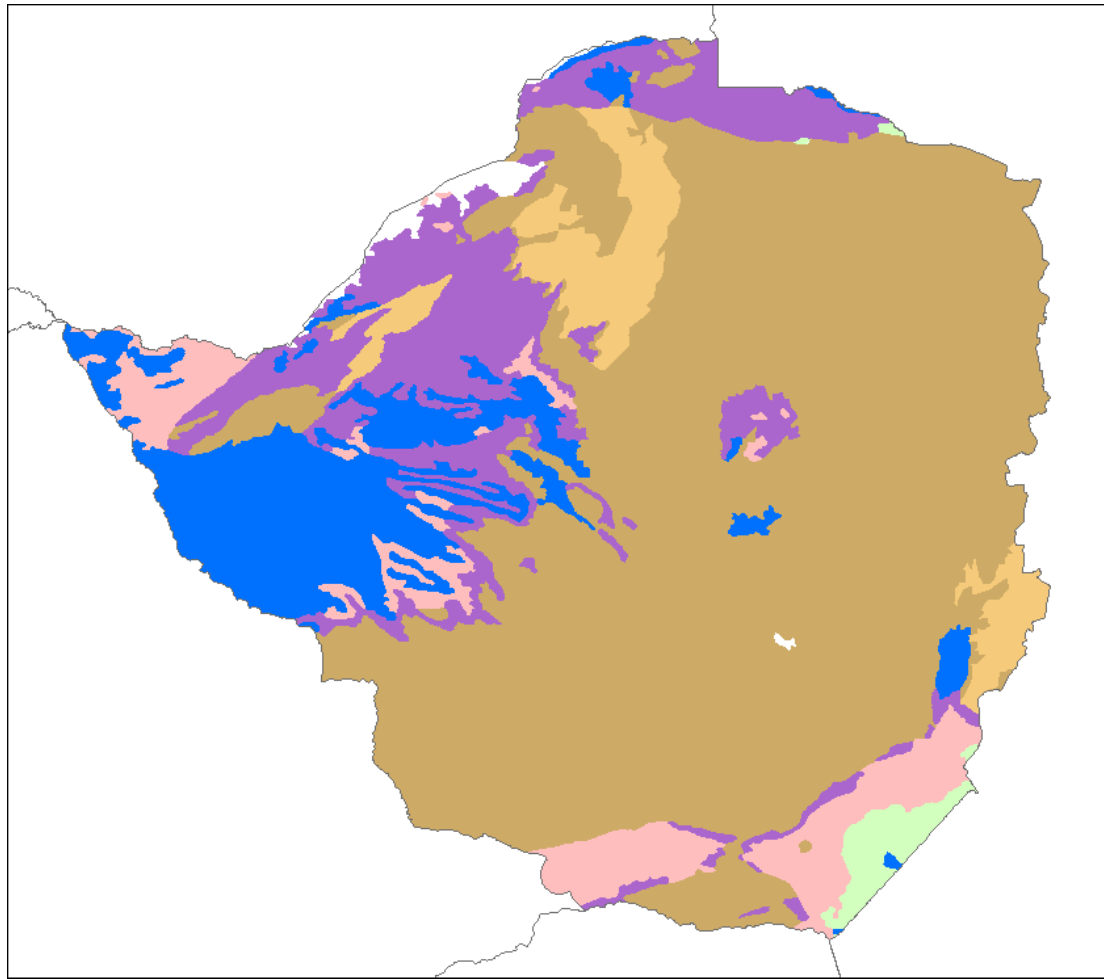
**Precambrian Basement Complex and Metavolcanics**

<p>Precambrian Basement Complex with belts of metavolcanics and greenstones, including the Sebakwean, Belingwean, Bulawayan and Shamvaian supergroups</p>	<p>Early Precambrian / Archaean</p>	<p>The Basement Complex covers at least 60% of the country area, including a large portion of central Zimbabwe. It is characterised by vast areas of gneissose rocks into which younger granite bodies of various sizes have been intruded, including Proterozoic granites, and granodiorites, adamellites and tonalites of the Younger Intrusive Granites.</p> <p>The Basement Complex contains irregularly shaped bodies of greenstone material, making up mineralised greenstone/gold belts, which also contain metavolcanics and minor metasediments. Other linear belts are formed by dolerites and sheets of dolerite composition trending in various directions across the Basement Complex area.</p> <p>The Limpopo and Zambezi Mobile Belts are zones of deformed and metamorphosed rocks with a SSW-NNE trend in the south of the country, and a NW-SE trend across the north of Zimbabwe and into Zambia. They comprise paragneisses and anorthosite gneisses.</p>	<p>Different weathering thicknesses occurs in the Basement Complex, distinguished by different erosional surfaces. Weathering thicknesses range from greater than 30 to 35m on the African erosional surface, to shallow, less than 30m on the Post African and Pliocene/Quaternary surfaces. Moderate to deep weathering occurs within the Greenstone Belts.</p>
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**5.3.1.2 Groundwater**

- 234. Zimbabwe has limited groundwater resources due to weathered and fractured crystalline rock formations of the basement complex that underlies more than 60% of the country. Groundwater is estimated to be in the region of 6 km<sup>3</sup>/per year. Groundwater is used for public and private drinking water supply, agricultural and industrial purposes, maintenance of flow and water levels in rivers, lakes and wetlands, particularly during times of low rainfall.
- 235. Groundwater is the main source for domestic use and livestock watering in rural areas. It is also a crucial source of water for small-scale irrigation in rural areas (where the majority of the country's population is found).
- 236. Groundwater is often used for small-scale irrigation. The project has two sites where groundwater could potentially be used. Project specific groundwater studies have not been undertaken, however there have been a number of studies done and earlier pilot programmes that provide insight into groundwater conditions. Testing of groundwater resources would be undertaken prior to it being used.





**Aquifer Type and Groundwater Potential**







	Unconsolidated - High
	Sedimentary Intergranular - Low
	Sedimentary Intergranular/Fracture - High
	Igneous Volcanic - High
	Metasedimentary Fracture - Moderate to High
	Basement - Low

Figure 9: A simplified overview of the type and productivity of the main aquifers at a national scale. Source: British Geological Society<sup>24</sup>

237. Davies & Burgess (2013) provide the following information on borehole development in Zimbabwe: "groundwater development continued to a point when the resource became stressed. Borehole drilling increased progressively with time in Zimbabwe peaking in the late 1990s. By 2003, there were 28,515 operating and 8,668 non-functional hand pumped boreholes. Of the 17,233 listed in the ZINWA database some 14,577 records include location, date drilled, borehole depth, yield and lithological data. These data indicate that most boreholes drilled during 1976-1996 were into Basement Complex aquifers. However, availability of hydraulic data for Basement Complex aquifers remains poor."
238. Groundwater recharge and fluctuation is a sensitive function of the climatic factors, local geology, topography and land use. As evaporation greatly exceeds rainfall, recharge to the near surface weathered basement aquifer is intermittent to non-existent. Evaporation removes surface moisture causing decline in water levels in years of low rainfall or drought (Davies & Burgess 2013)<sup>25</sup>.

<sup>24</sup> : [http://earthwise.bgs.ac.uk/index.php/Hydrogeology\\_of\\_Zimbabwe](http://earthwise.bgs.ac.uk/index.php/Hydrogeology_of_Zimbabwe)

<sup>25</sup> Davies, J. and Burgess, W.G. 2013. Can groundwater sustain the future development of rural Zimbabwe?

239. Groundwater resources and their long-term replenishment are controlled by long-term climate conditions; therefore, climate change will have a negative impact on groundwater resources in Zimbabwe.<sup>26</sup>
240. Inefficient irrigation and drainage systems are a major cause of excess leakage and increase the risk of salinity and waterlogging in irrigation areas. When irrigation is done regularly with excessive water, groundwater level comes up and quantity of solvent salts increases. Due to evaporation, salts from saline groundwater collect on the surface of the soil.
241. The project is proposing climate-smart irrigation, ie very water efficient systems that utilise technology such as drip irrigation etc. This means that the likelihood of over irrigation is greatly reduced.

### 5.3.1 Performance Criteria

242. The following performance criteria are set for the project:
- no significant decrease in the quality and quantity of groundwater as a result of construction and operational activities in proximity to the projects;
  - effective implementation of site-specific EDSCPs and other measures to protect groundwater.
243. By following the management measures set out in the EMSF the project will not have a significant impact on water quality across the broader area.

### 5.3.2 Monitoring

244. Refer to Table 6 for the monitoring requirements for groundwater.
245. During the project groundwater quality should be assessed initially and then at regular intervals. Initial assessment should cover a wide range of parameters (eg depth to water, pH, DO, conductivity, nitrates, phosphates, faecal coliforms, heavy metals, turbidity, hydrocarbons) to provide a baseline and to confirm suitability for intended use. Subsequent monitoring parameters will be determined on need.
246. Ongoing monitoring should form part of the operation of the boreholes.

### 5.3.3 Reporting

247. All water quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded.

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<sup>26</sup> Chikodzi D (2013) Groundwater Resources of Zimbabwe: An Assessment of Fluctuations. 2: 629 doi:10.4172/scientificreports.629

Table 6 Groundwater management measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
GW 1: Increase of gross pollutants, hydrocarbons, metals and other chemical pollutants into the groundwater and/or surface water environment.	GW1.1: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted, including assessing the changes to groundwater quality.	Construction and operation phase	Field officer	Weekly and as required with reporting to MEWC and UNDP
	GW1.2: Prevent contaminated surface water from entering aquifers via boreholes and wells - protect from runoff and flooding and keep surrounds clean.	All phases	All Personnel	Weekly
	GW1.3: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	All Personnel	Weekly with reporting to MEWC and UNDP
	GW1.4: Check all vehicles, equipment and material storage areas daily for possible fuel, oil and chemical leaks. Undertake refuelling at designated places away from water systems.	All phases	All Personnel	Daily and maintain records
	GW 1.5: Minimise the use of herbicides and use only biodegradable herbicides that have minimal impact on water quality and fauna. Use only as per directions	All phases	All Personnel	Weekly reporting to MEWC and UNDP
	GW 1.6: Ensure that over irrigation does not occur. Monitor weather forecasts and soil moisture levels. Irrigate only when required and to appropriate soil/plant carrying capacity.	Operation	IMCs	Daily. Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring reporting &
GW2: Impacts to groundwater levels	GW 2.1: Excessive irrigation can raise shallow groundwater table. Avoid excessive irrigation through monitoring of soil moisture. Refer GW1.6	Operation	IMCs	Daily.
	GW 2.2: If groundwater used, ensure that excessive groundwater pumping does not occur. Pump tests to determine sustainable volumes. Monitor/record extraction volumes.	Operation	IMCs	As appropriate

## 5.4 SURFACE WATER

### 5.4.1 Background

248. Zimbabwe mostly relies on surface water for important socio-economic activities. Wetlands, groundwater and wastewater are the other sources of water that are used to lessening degrees. The country is estimated to have total renewable surface water resources in the region of 20 km<sup>3</sup>/year, while internally produced water resources account for 12.26 km<sup>3</sup>/yr. Potential yield is estimated to be 8.5 km<sup>3</sup>/yr, of which 56% is already committed with the balance of 3.7 km<sup>3</sup> / yr available for irrigation and other uses. Irrigation uses 82% of the developed water resources, mining 3%, urban and industry supply 1.4% and conservation, mining and hydropower generation 1%.
249. The country shares nine transboundary river basins with its neighbours. Water distribution varies between the country's seven catchments: Gwayi, Manyame, Mazowe, Mzingwane, Runde Sanyati, and Save (Figure 10).
250. There has been extensive dam construction in the country. The country boasts of 8,000 large, medium- and small dams that were constructed for urban, agriculture, mining and industrial uses. There are also many small dams in the rural areas many of which were built by Government and Non-Governmental Organizations (NGOs) under the one dam per district campaign in the 1990s as a response to droughts. While these are an important source of water for domestic use, livestock watering and for small-scale irrigation, they tend to be poorly managed, and have either been silted up or are in danger of doing so.

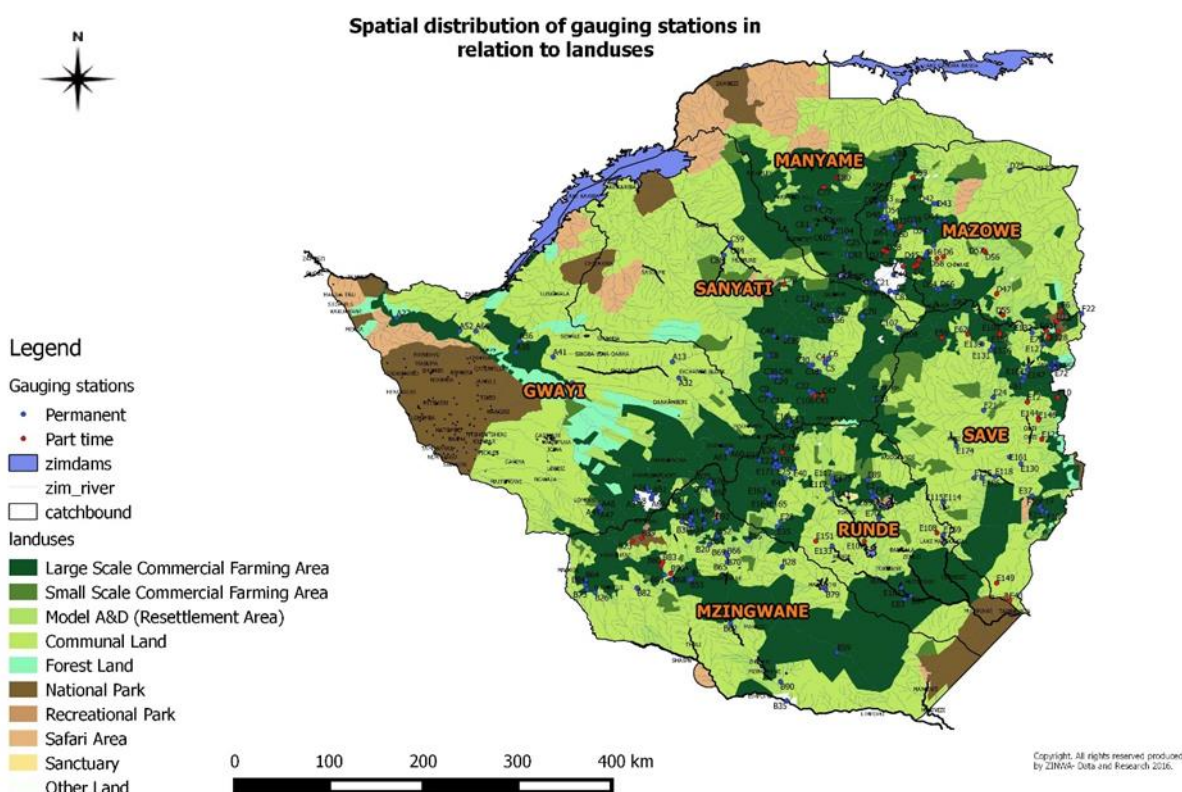


Figure 10 Land use, surface water and gauging stations.<sup>27</sup>

251. Wetlands are another important source of water and are commonly refer to *dambos* (seasonally waterlogged headwater wetlands that are common in southern Africa. It is estimated that wetlands cover about 1.28 million hectares of which 25% are found in communal areas where they are used for vegetable and field crop production on some 20,000 hectares and contribute greatly to food security

<sup>27</sup> Water Resources Overview - GCF Feasibility Study

252. The country shares nine transboundary river basins with its neighbours and has seven river catchments inside its borders: Gwayi, Manyame, Mazowe, Mzingwane, Runde, Sanyati and Save. Recognising the importance of water to economic development and poverty reduction, GoZ has invested in thousands of large, medium and small dams for urban and rural supply and sanitation and irrigation, although many are not suitable for small scale irrigation in the rural setting. The country ranks second to South Africa within SADC with respect to per capita water storage, despite a severe lack of water availability in rural areas, particularly in the semi-arid southern areas<sup>28</sup>.
253. Flooding occurs in Zimbabwe during the summer months (December to March) when the country receives its rains. The most severe floods tend to be experienced in the southern and northern low-lying areas of the country (Figure 9)<sup>29</sup>.

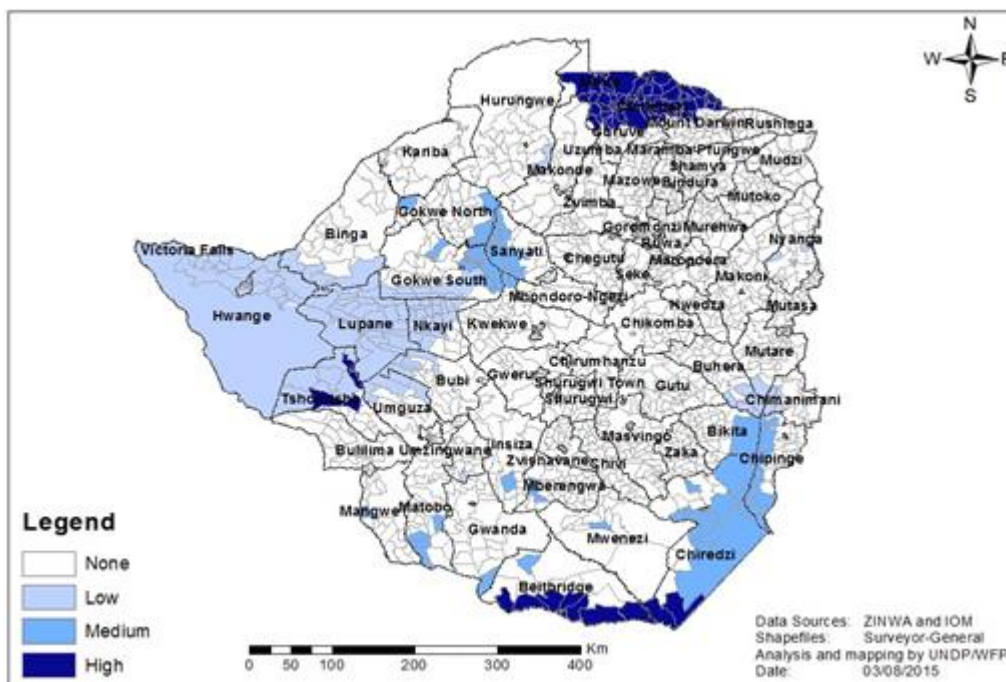


Figure 11 Flood map of Zimbabwe (source ZRBF)

### 5.4.2 Performance Criteria

254. The following performance criteria are set for the construction of the projects:

- no significant decrease in water quality as a result of construction and operational activities;
- water quality shall conform to any approval conditions stipulated by UNDP, MEWC and/or other government departments, or in the absence of such conditions follow a 'no worsening' methodology; and
- effective implementation of site-specific EDSCPs.

### 5.4.3 Monitoring

255. Having water of a quality that is fit for purpose is important. Water quality can affect plant growth, livestock health, soil quality, farm equipment and domestic use. The quality of a water source is also variable depending upon weather and external inputs.

256. Evaporation increases the concentrations of salts while a flush of water dilutes salts but may increase sediment and fertilisers, and manure or nutrient runoff. Monitoring should be done regularly and more frequently in summer or in periods of prolonged moisture stress.

257. Table 7 outlines the monitoring required.

<sup>28</sup> Manzungu, E. 2011. Reviving irrigation development and management. Thematic Paper 3 Background paper on Water resources development and management for the Zimbabwe National Water Policy, Harare, Zimbabwe.

<sup>29</sup> UNDP and ZRBF. 2016. Mapping of Selected Hazards Affecting Rural Livelihoods in Zimbabwe: A District and Ward Analysis. ZRBF, Harare.

### 5.4.4 Reporting

258. All water quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded.

Table 7 Water Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
W1: Elevated suspended solids and other contaminants in surface water systems.	W1.1: Develop and implement a site-specific Erosion, Drainage and Sediment Control Plan (EDSCP) to address drainage control, sediment and erosion controls and stockpiling of materials including soil during construction of all components of the projects. EDSCP measures to be inspected regularly to ensure all devices are functioning effectively.	Pre-Earthworks	Field officer	Initial set up and then as required with reporting to MEWC and UNDP
	W1.2: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	All Personnel	Weekly with reporting to MEWC and UNDP
	W1.3: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted including assessing the changes to groundwater quality.	Entire construction and operation phase	Field officer	Weekly and as required with reporting to MEWC and UNDP
	W1.4: Schedule works in stages to ensure that disturbed areas are revegetated and stabilised progressively and as soon as practicable after completion of works.	Avoid undertaking bulk earthworks during wet season	Field officer and MEWC	Maintain records
	W1.5: Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted	Entire construction and operation phase	Field officer	Maintain records daily



### 5.5 NOISE AND VIBRATION

#### 5.5.1 Background

259. Areas of intervention are generally rural in nature due to the limited urban development and heavy industry, environmental noise is relatively low. Sources of noise include passing traffic, generators, pumps and machinery eg tractors.
260. All construction and operation activities have the potential to cause noise nuisance. Vibration disturbance to nearby residents and sensitive habitats is likely to be caused through the use of vibrating equipment. Blasting is not required to be undertaken as part of this project.
261. The use of machinery or introduction of noise generating facilities could have an adverse effect on the environment and residents if not appropriately managed.
262. Contractors involved in construction activities should be familiar with methods of controlling noisy machines and alternative construction procedures as contained within specific Zimbabwe legislation or in its absence, international good practice may be used if the legislation has not been enacted.
263. Potential noise sources during construction and operation may include:
- heavy construction machinery;
  - power tools and compressors;
  - delivery vehicles;
  - pumps;
  - farm equipment.

#### 5.5.2 Performance Criteria

264. The following performance criteria are set for the construction of the projects:
- noise from construction and operational activities must not cause an environmental nuisance at any noise sensitive place;
  - undertake measures at all times to assist in minimising the noise associated with construction activities;
  - no damage to off-site property caused by vibration from construction and operation activities; and
  - corrective action to respond to complaints is to occur within 48 hours.

#### 5.5.3 Monitoring

265. A standardised noise monitoring program has been developed for the projects (*Table 8*). The program is subject to review and update at least every two months from the date of issue. Importantly, the field officer will:
- ensure equipment and machinery is regularly maintained and appropriately operated; and
  - carry out potentially noisy construction activities during ‘daytime’ hours only.

#### 5.5.4 Reporting

266. All noise monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to noise is exceeded

Table 8 Noise and Vibration Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
N1: Increased noise levels	N1.1: Select plant and equipment and specific design work practices to ensure that noise emissions are minimised during construction and operation including all pumping equipment.	All phases	Contractor	Maintain records
	N1.2: Specific noise reduction devices such as silencers and mufflers shall be installed as appropriate to site plant and equipment.	Pre and during construction	Contractor	Maintain records
	N1.3 Minimise the need for and limit the emissions as far as practicable if noise generating construction works are to be carried out outside of the hours: 7am-5.30pm	Construction phase	All Personnel	Daily and maintain records
	N1.4: Consultation with nearby residents in advance of construction activities particularly if noise generating construction activities are to be carried out outside of 'daytime' hours: 7am-5.30pm.	Construction phase	All Personnel	Daily and maintain records
	N1.5 The use of substitution control strategies shall be implemented, whereby excessive noise generating equipment items onsite are replaced with other alternatives.	Construction phase	All Personnel	Daily and maintain records
	N1.6 Provide temporary construction noise barriers in the form of solid hoardings where there may be an impact on specific residents.	Construction phase	Field officer	Daily and maintain records
	N1.7 All incidents complaints and non-compliances related to noise shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	Field officer	Maintain records
	N1.8 The contractor should conduct employee and operator training to improve awareness of the need to minimise excessive noise in work practices through implementation of measures.	Pre and during construction	Contractor	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
N2. Vibration due to construction	N2.1: Identify properties, structures and habitat locations that will be sensitive to vibration impacts resulting from construction and operation of the project.	Pre and during construction	Contractor	Maintain records
	N2.2: Design to give due regard to temporary and permanent mitigation measures for noise and vibration from construction and operational vibration impacts.	Pre-construction	Contractor	Maintain records
	N2.3: All incidents, complaints and non-compliances related to vibration shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	Field officer	Maintain records
	N2.4: During construction, standard measure shall be taken to locate and protect underground services from construction and operational vibration impacts.	Construction phase	Field officer	Maintain records

### 5.6 EROSION, DRAINAGE AND SEDIMENT CONTROL

#### 5.6.1 Background

The sites vary topographically and in soil types. The project is focussed on CSA farming, including better use of water and soil resource, therefore management of drainage and erosion is important. Interventions need to consider both short and long-term impacts, as well as natural events such as flooding that are beyond the project control.

#### 5.6.2 Soils

Soils are largely controlled by the underlying or surrounding geology. For information on geology of Zimbabwe refer to Section 5.3.1.1.

267. About 70% of the country's soils are derived from granite and are often sandy, light textured and of limited inherent agricultural potential. There is, however, a significant development of soils with a heavier clay content in various parts of the country. The extreme west of the country has large tracts of deep Kalahari sandy soils which have very low agricultural potential<sup>30</sup>.

268. Figure 12 provides a map of soil types across Zimbabwe. The primary types of soil found in southern Zimbabwe are:

- Luvisols - The mixed mineralogy, high nutrient content, and good drainage of these soils make them suitable for a wide range of agriculture.
- Ferric luvisols;
- Calcic luvisols
- Chromic luvisols
- Ferric Arenosols;
- Pellic vertisols; and
- Lithosols.

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<sup>30</sup> <http://www.fao.org/docrep/004/AC429E/AC429E02.htm>

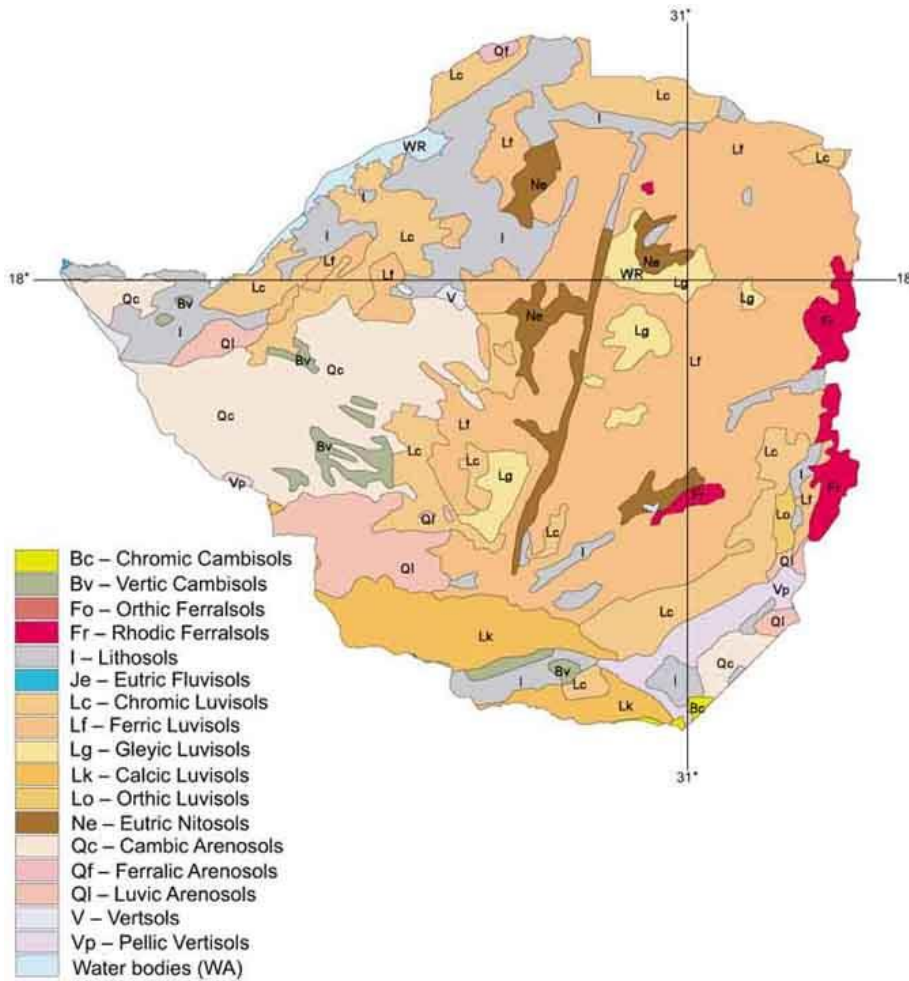


Figure 12 Dominant soils of Zimbabwe<sup>31</sup>. Original scale: 1:5 million.

269. Soil erosion depends on several parameters such as type of soil, slope, vegetation, the nature of topography and rainfall intensity. The loss of soil stability and soil erosion can take place due to the removal of vegetation cover, and numerous construction activities. It can cause the loss of soil fertility and induce slope instability. Land preparation for the project could result in blockage or alteration of natural flow paths causing changes in the drainage patterns in the area. Effective and efficient mitigation measures can not only reduce but could improve the conditions over the existing conditions.

270. Rainfall can have a significant impact on the ability to manage environmental impacts, particularly in terms of managing drainage, erosion and sedimentation. Therefore, activities which involve significant disturbance of soil or operating with drainage lines and waterways should be planned to be undertaken during the driest months. It is also important to ensure that all required erosion and sediment control mechanisms are in place before the onset of the wet season.

271. Activities that have the potential to cause erosion should be undertaken with the likely weather conditions in mind.

### 5.6.3 Performance Criteria

272. The following performance criteria are set for the projects:

- no build-up of sediment in the aquatic environments and/or surface and/or groundwater as a result of construction and operation activities;
- no degradation of water quality on or off site of all projects;

<sup>31</sup> Source: DSMW-FAO-UNESCO. <http://www.fao.org/docrep/009/a0395e/a0395e06.htm>

- all water exiting the project site and/or into groundwater systems is to have passed through best practice erosion, drainage and sediment controls; and
- effective implementation of site-specific EDSCP.

273. By following the management measures set out in the EMSF, construction and operation activities of the projects will not have a significant impact as a result of sedimentation across the broader area.

### 5.6.4 Monitoring

274. A standardised sediment control monitoring program has been developed for the projects (Table 9). The program is subject to review and update at least every two months from the date of issue. The field officer will be required to:

- conduct site inspections on a weekly basis or after rainfall events exceeding 20mm in a 24-hour period;
- develop a site-specific checklist to document non-conformances to this EMSF or any applicable EDSCPs; and
- communicate the results of inspections and/or water quality testing and ensure that any issues associated with control failures are rapidly rectified and processes are put in place to ensure that similar failures are not repeated.

### 5.6.5 Reporting

275. All sediment and erosion control monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to erosion and sediment control is exceeded.

Table 9 Erosion, Drainage and Sediment Control Measures

<b>Issue</b>	<b>Control activity (and source)</b>	<b>Action timing</b>	<b>Responsibility</b>	<b>Monitoring &amp; reporting</b>
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.1: Develop and implement an EDSCP for any surface works, embankments and excavation work, water crossings and stormwater pathways.	Construction phase	All Personnel	Maintain records
	E1.2: Ensure that erosion and sediment control devices are installed, inspected and maintained as required.	Construction phase	All Personnel	Maintain records
	E1.3: Schedule/stage works to minimise cleared areas and exposed soils at all times.	Pre and during construction	Field officer	Maintain records
	E1.4: Incorporate the design and location of temporary and permanent EDSC measures for all exposed areas and drainage lines. These shall be implemented prior to pre-construction activities and shall remain onsite during work	Pre and during construction	Field officer	Maintain records
	E1.5: Schedule/stage proposed works to ensure that major vegetation disturbance and earthworks are carried out during periods of lower rainfall and wind speeds.	Pre and during construction	Field officer	Maintain records
	E1.6: Strip and stockpile topsoil for use during revegetation and/or place removed soils back on to agricultural lands.	Pre and during construction	Field officer	Maintain records
	E1.7: Schedule/stage works to minimise the duration of stockpiling topsoil material. Vegetate stockpiles if storage required for long periods.	During construction	All Personnel	Maintain records
	E1.8: Locate stockpile areas away from drainage pathways, waterways and sensitive locations.	Pre and during construction	Field officer	Maintain records

<b>Issue</b>	<b>Control activity (and source)</b>	<b>Action timing</b>	<b>Responsibility</b>	<b>Monitoring &amp; reporting</b>
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.9: Design stormwater management measures to reduce flow velocities and avoid concentrating runoff.	Pre and during construction	Field officer	Maintain records
	E1.10: Include check dams in drainage lines where necessary to reduce flow velocities and provide some filtration of sediment. Regularly inspect and maintain check dams.	Pre and during construction	Field officer	Maintain records
	E1.11: Mulching shall be used as a form of erosion and sediment control and where used on any slopes (dependent on-site selection), include extra sediment fencing during high rainfall.	During construction	All Personnel	Maintain records
	E1.12: Bunding shall be used either within watercourses or around sensitive/dangerous goods as necessary.	During construction	All Personnel	Maintain records
	E1.13: Grassed buffer strips shall be incorporated where necessary during construction to reduce water velocity.	During construction	Field officer	Maintain records
	E1.14: Silt fences or similar structures to be installed to protect from increased sediment loads.	During construction	Contractors	Maintain records
	E1.15: Excess sediment in all erosion and sediment control structures (eg. sediment basins, check dams) shall be removed when necessary to allow for adequate holding capacity.	During construction	Contractors	Maintain records
E2: Soil Contamination	E2.1: Although not anticipated, if contamination is uncovered or suspected, undertake a Stage 1 preliminary site contamination investigation. The contractor should cease work if previously unidentified contamination is encountered and activate management procedures and obtain advice/permits/approval (as required).	Construction phase	All Personnel	Daily and maintain records



Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E2: Soil Contamination	E2.2: Adherence to best practice for the removal and disposal of contaminated soil/ material from site (if required), including contaminated soil within the project footprints.	Construction phase	All Personnel	Daily and maintain records
	E2.3: Drainage control measures to ensure runoff does not contact contaminated areas (including contaminated material within the project footprints) and is directed/diverted to stable areas for release.	Construction phase	All Personnel	Daily and maintain records
	E2.4: Avoid importing fill that may result in site contamination and lacks accompanying certification/documentation. Where fill is not available through on site cut, it must be tested in accordance with geotechnical specifications.	Construction phase	All Personnel	Daily and maintain records
E3: Disposal of excess soil/silt	E3.4: Silt removed from dams/canals/weirs during rehabilitation / maintenance is to be beneficially reused eg composted, returned to farmland, brick making etc. Silt should be tested to confirm suitability for proposed use	Construction and operation phases	MEWC	Maintain records

### 5.7 WASTE MANAGEMENT

#### 5.7.1 Background

276. As the implementing agency, the MEWC advocate good waste management practice. The preferred waste management hierarchy and principles for achieving good waste management is as follows:

- waste avoidance (avoid using unnecessary material on the projects);
- waste re-use (re-use material and reduce disposing);
- waste recycling (recycle material such as cans, bottles, etc.); and
- waste disposal (all petruscible and/or contaminated waste to be dumped at approved landfills).

277. The key waste streams generated during construction are likely to include residual sediment and construction wastes such as:

- the excavation wastes unsuitable for reuse during earthworks;
- wastes from construction and drilling equipment maintenance. Various heavy vehicles and construction equipment will be utilised for the duration of the construction and drilling phase. Liquid hazardous wastes from cleaning, repairing and maintenance of this equipment may be generated. Likewise, leakage or spillage of fuels/oils within the site needs to be managed and disposed of appropriately;
- non-hazardous liquid wastes will be generated through the use of workers' facilities such as toilets; and
- general wastes including scrap materials and biodegradable wastes.

278. Key waste streams generated during operations are likely to include:

- Organic farm waste
- excavated sediment, which can be spread on suitable areas;
- waste irrigation hardware – pipe and fittings;
- packaging (including seed bags, pesticide/herbicide containers etc); and
- used oil and machinery parts.

279. Workers involved in construction and operational activities should be familiar with methods minimising the impacts of clearing vegetation to minimise the footprint to that essential for the works and rehabilitate disturbed areas, along with recycling where possible. By doing these activities, the projects should minimise the impact of waste generated by the project.

#### 5.7.2 Performance Criteria

280. The following performance criteria are set for the construction of the projects:

- waste generation is minimised through the implementation of the waste hierarchy (avoidance, reduce, reuse, recycle);
- no litter will be observed within the project area or surrounds as a result of activities by site personnel;
- no complaints received regarding waste generation and management;
- no chemicals as a result of farm activities detected in waterways or groundwater; and
- waste oils will be collected and disposed or recycled off-site, local oil companies or shipped for recycling.

#### 5.7.3 Monitoring

281. A waste management program has been developed for the projects (Table 10). The program is subject to review and update at least every two months from the date of issue.

### 5.7.4 Reporting

282. The MEWC as implementing agency must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to waste is exceeded.

Table 10 Waste Management Measures

<b>Issue</b>	<b>Control activity (and source)</b>	<b>Action timing</b>	<b>Responsibility</b>	<b>Monitoring &amp; reporting</b>
WT1: Production of wastes and excessive use of resources	WT1.1: Preference shall be given to materials that can be used to construct the project that would reduce the direct and indirect waste generated.	Pre- and during construction	Contractor	Maintain records
	WT1.2: Daily waste practices shall be carried out unless these are delegated to the activities of external waste management bodies.	During construction	Field officer	Daily and maintain records
	WT1.3: The use of construction materials shall be optimised and where possible a recycling policy adopted.	During construction	Field officer	Weekly and maintain records
	WT1.4: Separate waste streams shall be maintained at all times i.e. general domestic waste, construction and contaminated waste. Specific areas on site shall be designated for the temporary management of the various waste streams.	During construction	Field officer	Weekly and maintain records
	WT1.5: Any contaminated waste shall be disposed of at an approved facility.	During construction	Field officer	Weekly and maintain records
	WT1.6: Recyclable waste (including oil and some construction waste) shall be collected separately and disposed of correctly.	During construction	Field officer	Weekly and maintain records
	WT1.7: Waste sites shall be sufficiently covered to ensure that wildlife does not have access.	During construction	Field officer	Daily
	WT1.8: Disposal of waste shall be carried out in accordance with the Government of ZIMBABWE requirements.	During construction	Field officer	Weekly and maintain records
	WT1.9: Fuel and lubricant leakages from vehicles and plant shall be immediately rectified once observed.	During construction	Field officer	Daily and maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
WT1: Production of wastes and excessive use of resources	WT1.10: Major maintenance and repairs shall be carried out off-site whenever practicable.	During construction	Field officer	Weekly and maintain records
	WT1.11: Where possible, fuel and chemical storage and handling shall be undertaken at central fuel and chemical storage facilities, such as petrol stations.	During Construction	Field officer	Daily and maintain records
	WT1.12: On-site storage of fuel and chemicals shall be kept to a minimum.	During Construction	Contractor	Daily, maintain records and report any incidents
	WT1.13: Any waste oils and lubricants are to be collected and transported to recyclers or designated disposal sites as soon as possible.	During Construction	Field officer	Daily and maintain records
	WT1.14: Any dangerous goods stored on site shall be stored in accordance with Zimbabwe regulations.	During Construction	Contractor	Daily and maintain records

### 5.8 AIR QUALITY

#### 5.8.1 Background

283. There are natural as well as anthropogenic (i.e. human-induced) sources of air pollution. The major human activities that generate the bulk of air pollutants are transportation, industrial processes, industrial and non-industrial fugitive processes, the energy production, waste management and agricultural activities. Non-industrial fugitive emissions are caused by traffic entrainment of dust from public paved and unpaved roads, agricultural operations, construction and fires. The impact of fugitive dust emission is limited because the emissions are mostly large particles that settle a short distance from the source and fugitive dust sources are mostly in rural areas.
284. The project areas are predominantly village or rural in character. Existing air quality reflects those environments, with dust being the main air quality nuisance. No project specific air studies have been undertaken.
285. All construction activities have the potential to cause air quality nuisance, however construction impacts are generally of short-duration and impacts can be mitigated through management measures. Primary construction impacts are related to dust generation as a result of earthworks and engine emissions from machinery and vehicles.
286. Agriculture is a key sector of the economy of Zimbabwe and emissions of pollutants occur from several sources. Burning of crop residue, is a major source of hydrocarbons and particulate matter. Livestock emit methane and ammonia. Savanna burning emits large amounts of carbon monoxide (CO) and substantial amounts of nitrogen oxides (NO<sub>x</sub>) and methane (CH<sub>4</sub>). Manure management and enteric fermentation emit methane. The spraying of the fields with pesticides, use of herbicides and dusting also contribute small amounts of pollutants.
287. Agricultural activities often generate dust, however irrigation will generally result in high soil moisture levels and therefore dust generation overall should be reduced compared to dryland farming. Dust generation is also a source of soil loss, which is undesirable. Soil conservation measures are part of the proposed project and dust generation will be minimised through the implementation of such measures.
288. Workers involved in construction and operation activities should be familiar with methods minimising the impacts of deleterious air quality and alternative construction procedures as contained in Zimbabwe legislation or international good practice.
289. Air pollution is regulated under the Environmental Management Act of 2002 and the Atmospheric Pollution Prevention Act of 1971.

#### 5.8.2 Performance Criteria

290. The following performance criteria are set for the construction of the projects:
- release of dust/particle matter must not cause an environmental nuisance;
  - undertake measures at all times to assist in minimising the air quality impacts associated with construction and operation activities; and
  - corrective action to respond to complaints is to occur within 48 hours.

#### 5.8.3 Monitoring

291. Table 11 includes suggested monitoring frequency, this should be reviewed at least every two months and updated if required to ensure that monitoring is appropriate. Importantly:
- the requirement for dust suppression will be visually observed by site personnel daily and by MEWC and UNDP staff when undertaking routine site inspections; and
  - Vehicles and machinery emissions – visual monitoring and measured when deemed excessive.

#### 5.8.4 Reporting

292. All air quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The MEWC must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to air quality is exceeded.

Table 11 Air Quality Management Measures

<b>Issue</b>	<b>Control activity (and source)</b>	<b>Action timing</b>	<b>Responsibility</b>	<b>Monitoring &amp; reporting</b>
A.1 Increase in dust levels at sensitive receptors	A1.1: Implement effective dust management measures in all areas during design, construction and operation.	Pre- and during construction	All Personnel	Daily and maintain records
	A1.2: Restrict speeds on roads and access tracks.	During construction	Field officer	Daily. Report incidents
	A1.3: Manage dust/particulate matter generating activities to ensure that emissions do not cause an environmental nuisance at any sensitive locations	Construction and operation	Contractor/Farmer	Daily and maintain records
	A1.4: Construction activities should minimise risks associated with climatic events (check forecasts and avoid very dry and windy weather periods).	During construction	Contractor	Daily and maintain records
	A1.5: Implement scheduling/staging of proposed works to ensure major vegetation disturbance and earthworks are minimised.	During construction	Contractor	Daily and maintain records
	A1.6: Locate material stockpile areas as far as practicable from sensitive receptors. Cover if appropriate.	During construction	Contractor	Daily and maintain records
	A1.7: Source sufficient water of a suitable quality for dust suppression activities complying with any water restrictions.	During construction	Contractor	Daily and maintain records
	A1.8: Schedule revegetation activities to ensure optimum survival of vegetation species.	During construction	Field officer	Maintain records
	A1.9: Rubbish receptacles should be covered and located as far as practicable from sensitive locations	During construction	Field officer	Maintain records
	A1.10 Burning of crop residues should be avoided	Operation	Farmers	Seasonally

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
A2. Increase in vehicle / machinery emissions	A2.1 Ensure vehicles/machines are switched off when not in use.	During construction	Field officer	Daily and maintain records
	A2.2 Ensure only vehicles required to undertake works are operated onsite.	During construction	Field officer	Daily and maintain records
	A2.3 Ensure all construction vehicles, plant and machinery are maintained and operated in accordance with design standards and specifications.	During construction	Field officer	Daily and maintain records
	A2.4 Develop and implement an induction program for all site personnel, which includes as a minimum an outline of the minimum requirements for environmental management relating to the site.	Pre- and during construction	Contractor	Daily and maintain records
	A2.5 Locate construction vehicle/plant/equipment storage areas as far as practicable from sensitive locations.	During construction	Field officer	Daily and maintain records
	A2.6 Direct exhaust emissions of mobile plant away from the ground.	During construction	Field officer	Daily and maintain records



## 5.9 SOCIAL MANAGEMENT

### 5.9.1 Background

293. According to 2012 Census report, 99.7% of the population is of African origin. Zimbabwe has 16 official languages: Chewa, Tonga, Chibarwe, English, Kalanga, Koisan, Nambya, Ndau, Ndebele, Shangani, Shona, sign language, Sotho, Tonga, Tswana, Venda, Xhosa. Of the two major ethnolinguistic groups, Shona speakers form about 70% and occupied the eastern two-thirds of Zimbabwe, Ndebele speakers constitute about 20%, English is spoken by about 2.5% and other indigenous ethnic groups make up the rest. African speakers of non-indigenous languages include migrant workers from Malawi, Zambia, and Mozambique.

294. Zimbabwe has a young population (Figure 13), around 40% are youths under 15 years old and approximately 57% between 15 and 65 years old.

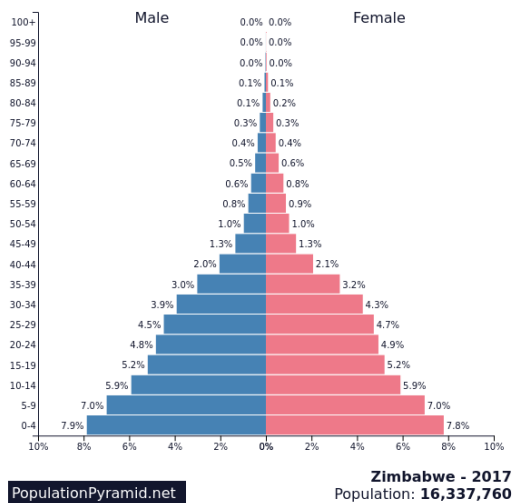


Figure 13 Population Pyramid<sup>32</sup>

295. Eighty five percent of Zimbabweans are Christian, and of that number, approximately 60% regularly attend Christian churches<sup>33</sup>. However, like most former European colonies, Christianity is often mixed with enduring traditional beliefs. Besides Christianity, ancestral worship (Amadlozi) is the most practised non-Christian religion which involves ancestor worship and spiritual intercession. Under 1% of the population is Muslim, although many Zimbabweans are influenced by Islamic food laws.

296. Zimbabwe is a low-income country, with an estimated 72% of the population living in chronic poverty.<sup>34</sup> Poverty is higher in women-headed households (72%), in comparison to male-headed households (58%).<sup>35</sup>

297. Zimbabwe has a life expectancy of 52 (females) and 48 (males). The top ten causes of death in Zimbabwe are: HIV and AIDS (26.8%); lower respiratory infections (8.3%), pre-term birth complications (4.6%); diarrhoeal diseases (4.6%); birth asphyxia and birth trauma (3.9%); stroke (3.4%); tuberculosis (2.8%); neonatal sepsis and infections (2.1%); ischaemic heart disease (2.0%) and congenital anomalies (1.7%).<sup>36</sup>

298. In 1980, soon after gaining independence, Zimbabwe adopted a policy of free primary education for all by abolishing school fees, leading to an exponential increase of enrolments.<sup>37</sup>The country is on course to achieving gender parity in primary and secondary education while lagging behind in the tertiary sectors.

<sup>32</sup> <https://www.populationpyramid.net/zimbabwe/2017/>

<sup>33</sup> [https://en.wikipedia.org/wiki/Demographics\\_of\\_Zimbabwe](https://en.wikipedia.org/wiki/Demographics_of_Zimbabwe) accessed on 8/12/17

<sup>34</sup> UN (2016). Zimbabwe Humanitarian Needs Overview 2016. [www.unocha.org/zimbabwe](http://www.unocha.org/zimbabwe)

<sup>35</sup> Government of Zimbabwe (2012). Combined Report of the Republic of Zimbabwe in Terms of CEDAW.

<sup>36</sup> World Health Organisation (2015) Zimbabwe WHO statistical profile.

<sup>37</sup> Dube, T (2015). Gender Disparities in Educational Enrolment and Attainment in Sub-Saharan Africa. Department of Development Studies, Lupane State University, Bulawayo in "Journal of Educational and Social Research MCSER Publishing, Rome Italy Vol 5 No. 3

299. Communities in AERs IV and V live predominantly on communal lands<sup>3839</sup>. Settlements are mainly concentrated near rivers and in scattered villages inland where some water is available from natural pools and springs<sup>40</sup>. Across this area, smallholders practice a diverse range of crop and livestock combinations and strategies, comprising of rain-fed crop production systems, livestock production systems and mixed crop-livestock production systems
300. Women constitute the majority of the rural smallholder farming population and are disproportionately affected by climate change impacts given their role in ensuring food production and security and because they have less access to productive assets and resources relative to their male counterparts.
301. It is estimated that 70 percent of smallholder farmers are women. A survey indicated that irrigation in smallholder schemes is also dominated by women, although only few are represented in their Irrigation Management Committees (IMCs) constituted by 80% men and 20% women. Women, who largely provide labour in the surveyed irrigation schemes, also look after children as well as other vulnerable groups, such as orphans and chronically ill persons. The fact that nationally 38% of the rural households include one member of these vulnerable groups has therefore a negative impact on the viability of these irrigation schemes<sup>41</sup>
302. The project has been designed with the assistance of stakeholders and aims to provide benefits to the broader community. Notwithstanding, as with any project that involves construction and modifying land use or farming practices, some dissatisfaction can occur, and conflicts may arise. It is important that potential areas of tension are recognised early and appropriate actions taken to avoid or minimise conflict.
303. The project does not require involuntary resettlement or acquisition of land although there may be some temporary impacts on land during construction activities.

### 5.9.2 Gender

304. Mainstream gender equality principles throughout the project. This entails that gender analysis is taken into account in the design of activities.
305. Develop specific strategies to include and target female farmers, in both male and female-headed households for interventions to ensure gender equal participation. This may include review of Constitution and By-Laws for irrigated lands to enhance women's access to land rights and productive resources
306. Enhance capacities of both male and female farmers to understand climate change information and use this to inform farming practices and crop/livestock choices
307. Build capacities of both male and female farmers in climate smart agriculture production, with a particular focus on providing extension services to both husband and wife, taking into account women's daily routines and promoting both genders participation in agricultural decision making
308. Build capacity of male and female farmers in farming as a business and value addition for irrigation schemes as well as dry land farming. Develop strategies to build capacities of female farmers in particular in leadership and marketing skills
309. Monitor gaps in gender equality throughout the project using sex-disaggregated data to support the project to apply strategies to close those gaps
310. Advocacy and awareness should be adjusted to most effectively reflect gender-specific differences. Communication strategies used in the project are then tailored, taking into account such differences

### 5.9.3 Performance Criteria

311. The following performance criteria are set for the project:
- the community has been consulted and project elements have been designed with their informed consultation and participation throughout the project;

<sup>38</sup> 74% of communal land in the country falls in AERs IV and V. *Source*: UNDP. 2014. Scaling Up Adaptation. Project Document. UNDP Environmental Unit.

<sup>39</sup> Communal lands are defined as land in rural areas owned on a usufruct basis based on customs, conventions and norms of a particular ethnic group. Each household has the right to a piece of farmland, a residential plot and access to common grazing land. *Source*: Holleman, J.F. 1952. Shona Customary Law: With Reference to Kinship, Marriage, the Family and the Estate (Manchester University Press). *In*: CESVI. 2017. Country Case Study: Zimbabwe. CESVI.

<sup>40</sup> CESVI. 2017. Country Case Study: Zimbabwe. CESVI.

<sup>41</sup> Mutambara et al., 2014. From [http://www.fao.org/nr/water/aquastat/countries\\_regions/ZWE/index.stm](http://www.fao.org/nr/water/aquastat/countries_regions/ZWE/index.stm)

- all stakeholders are appropriately represented;
- avoid adverse impacts to local community during construction and operations and where not possible, minimise, restore or compensate for these impacts;
- cultural heritage is not adversely impacted;
- community health and safety is protected and overall well-being benefits derived from the project;
- complaint and grievance mechanisms are put in place and proactively managed; and
- long-term social benefits are achieved.

312. Local stakeholders and community members have a key role to play in the implementation and monitoring of the project.

313. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any issues as they arise.

314. MEWC will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of programme activities.

### 5.9.4 Reporting

315. Records of all consultations are to be kept and reported on monthly basis.

316. The MEWC must be notified in the event of any individual or community complaint or dissatisfaction and ensure the Grievance Redress Mechanism is complied with.

Table 12: Social Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring reporting	&
SM1: Consultation	SM 1.1: Carry out community consultation on the purpose and benefits of making changes to land use	Pre-construction	MEWC	Maintain records	
	SM 1.2: Get community buy-in on any change of land use	Pre-construction	MEWC	Maintain records	
	SM 1.3: Ensure compliance with the Grievance Redress Mechanism process	Construction and operation	MEWC	Maintain records	
SM2: Gender Equity	SM2.1 Implement Gender Action Plan	All phases	All personnel	Maintain records	
SM3: Public nuisance caused by construction/operation activities (eg noise, dust etc)	SM 3.1: Carry out community consultation prior to undertaking activities	Pre-construction	MEWC	Maintain records	
	SM 3.2: Implement appropriate management plans (refer to Noise, Air, ESCP, and Waste sections of the ESMF)	Construction and operation	Field Officer and MEWC	Daily and maintain records	
	SM 3.3: Ensure compliance with the Grievance Redress Mechanism process	All phases	MEWC	Maintain records	

### 5.10 ARCHAEOLOGICAL AND CULTURAL HERITAGE

#### 5.10.1 Background

295. Zimbabwe is very rich in rock art. In the Rock Art Section of the Department of Stone Age Archaeology in Harare, there is an official listing of over 2000 painted caves and sites.

296. The Great Zimbabwe Monument is within the project area but will not be affected by the project.

297. No archaeological or cultural heritage issues have been raised during the project development phase. None the less, the project team needs to be cognizant of the potential for heritage finds and aware of what to do in such an event.

317. The following performance criteria are set for cultural heritage issues related to the project:

- There will be no impact on any important Archaeological, Indigenous and/or Cultural Heritage sites;
- Manage any specific sites of important Archaeological, Indigenous and/or Cultural significance (significant sites);

318. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any issues as they arise.

319. MEWC will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of programme activities.

#### 5.10.2 Reporting

320. Records of all consultations are to be kept and reported on monthly basis.

Table 13: Archaeological and Cultural Heritage

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring reporting &
<p>CH1: Damage or disturbance to significant important Archaeological, Indigenous and/or Cultural Heritage during the earth disturbances and land clearing activities</p>	<p>CH1.1: Should any important Archaeological, Indigenous and/or Cultural Heritage sites, immediately cease work within the area that the site has been observed and consult with the relevant Museum/traditional owner groups, UNDP, MEWC and archaeologist available for implementation during construction.</p>	<p>Pre- and during construction</p>	<p>Contractor</p>	<p>Daily, maintain records and immediately notify UNDP and MEWC of any find</p>

### 5.11 EMERGENCY MANAGEMENT MEASURES

321. In the event of actions occurring, which may result in serious health, safety and environmental (catastrophic) damage, emergency response or contingency actions will be implemented as soon as possible to limit the extent of environmental damage.
322. The delivery organisation will need to incorporate emergency responses into the project complying with the requirements under the Occupational, Health and Safety Policy of the delivery organisation and the relevant Zimbabwe legislation.

#### 5.11.1 Performance Criteria

323. The following performance criteria are set for the construction of the projects:

- no incident of fire outbreak;
- no failure of water retaining structures;
- no major chemical or fuel spills;
- no preventable industrial or work-related accidents;
- provide an immediate and effective response to incidents that represent a risk to public health, safety or the environment; and
- minimise environmental harm due to unforeseen incidents.

#### 5.11.2 Monitoring

324. An emergency response monitoring program has been developed for the projects (Table 14). The program is subject to review and update at least every two months from the date of issue. Importantly, visual inspections will be conducted by field officer daily with reporting to MEWC and UNDP staff on a weekly basis (minimum) noting any non-conformances to this EMSF.

#### 5.11.3 Reporting

325. The MEWC and UNDP staff must be notified immediately in the event of any emergency, including fire or health related matter including those that have resulted in serious environmental harm.

Table 14 Emergency Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1. Fire and Emergency management and prevention strategies implemented	E1.1: Flammable and combustible liquids bunding/storage areas to be designed in accordance with appropriate international standards	Pre- and during construction	Contractor	Daily and maintain records
	E1.2: Fire extinguishers/firefighting equipment to be available on site	During construction and operation	Contractor	As specified by manufacturer, maintain records
	E1.3: No open fires are permitted within the project area	During construction	Field officer	Daily and maintain records
	E1.4: Communication equipment and emergency protocols to be established prior to commencement of construction activities.	Construction operation and	Contractor Operator	/ Quarterly test and annual drill recommended
	E1.5: Train all staff in emergency preparedness and response (cover health and safety at the work site). Coordinate with NDMO.	Construction operation and	Contractor Operator	/ Maintain records
	E1.6: Check and replenish First Aid Kits	Construction operation and	Contractor Operator	/ At least quarterly Maintain records
	E1.7: Use of Personal Protection Equipment	Construction operation and	All Personnel	Daily and maintain records



## 6 BUDGET FOR ESMF IMPLEMENTATION

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326. A budget estimate has been prepared for the implementation of the ESMF as follows:

<b>Item</b>	<b>Budget</b>
ESMF Updating and Auditing	\$10,000
General ESMF Expenses	\$20,000
Groundwater testing	\$50,000
Ecological Monitoring (aquatic) - annually	\$120,000
Water Quality Monitoring (monitoring to be undertaken over five years)	\$200,000
Soil Field Testing – initial baseline + monitoring	\$100,000
Erosion, Drainage and Sediment Control	\$150,000
Training and PPE	\$100,000
Stakeholder Engagement Workshops	\$100,000
Grievance Redress Mechanism	\$50,000
<b>Total</b>	<b>\$900,000</b>



## Annex VI (b) – Environmental and Social Management Framework

Green Climate Fund Funding Proposal

### 7 APPENDICES

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## APPENDIX 1: UNDP SESP

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the Social and Environmental Screening Procedure and Toolkit for guidance on how to answer the 6 questions.

### Project Information

<b>Project Information</b>	
1. Project Title	
2. Project Number	
3. Location (Global/Region/Country)	

### Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

<b>QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?</b>
<i>Briefly describe in the space below how the Project mainstreams the human-rights based approach</i>
<i>Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment</i>
<i>Briefly describe in the space below how the Project mainstreams environmental sustainability</i>

**Part B. Identifying and Managing Social and Environmental Risks**

<b>QUESTION 2: What are the Potential Social and Environmental Risks?</b>  <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i>		<b>QUESTION 3: What is the level of significance of the potential social and environmental risks?</b>  <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i>		<b>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</b>
<b>Risk Description</b>	<b>Impact and Probability (1-5)</b>	<b>Significance (Low, Moderate, High)</b>	<b>Comments</b>	<b>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</b>
Risk 1: ....	I = P =			
Risk 2 ....	I = P =			
Risk 3: ....	I = P =			

Risk 4: ....	I =			
	P =			
[add additional rows as needed]				
	<b>QUESTION 4: What is the overall Project risk categorization?</b>			
	<b>Select one (see <u>SESP</u> for guidance)</b>		<b>Comments</b>	
	<i>Low Risk</i>	<input type="checkbox"/>		
	<i>Moderate Risk</i>	<input type="checkbox"/>		
	<i>High Risk</i>	<input type="checkbox"/>		
	<b>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?</b>			
	Check all that apply		<b>Comments</b>	
	<i>Principle 1: Human Rights</i>	<input type="checkbox"/>		
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input type="checkbox"/>		
	<i>Principle 3: Environmental Sustainability</i>	<input type="checkbox"/>		
	<i>1. Biodiversity Conservation and Natural Resource Management</i>	<input type="checkbox"/>		
	<i>2. Climate Change Mitigation and Adaptation</i>	<input type="checkbox"/>		

	<b>3. Community Health, Safety and Working Conditions</b>	<input type="checkbox"/>	
	<b>4. Cultural Heritage</b>	<input type="checkbox"/>	
	<b>5. Displacement and Resettlement</b>	<input type="checkbox"/>	
	<b>6. Indigenous Peoples</b>	<input type="checkbox"/>	
	<b>7. Pollution Prevention and Resource Efficiency</b>	<input type="checkbox"/>	

### Final Sign Off

<b>Signature</b>	<b>Date</b>	<b>Description</b>
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

**SESP Attachment 1. Social and Environmental Risk Screening Checklist**

<b>Checklist Potential Social and Environmental Risks</b>	
<b>Principles 1: Human Rights</b>	<b>Answer (Yes/No)</b>
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? <sup>42</sup>	
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	
5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	
6. Is there a risk that rights-holders do not have the capacity to claim their rights?	
7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	
8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	
<b>Principle 2: Gender Equality and Women’s Empowerment</b>	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	
3. Have women’s groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	
4. Would the Project potentially limit women’s ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?  <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	

<sup>42</sup> Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to “women and men” or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

<p><b>Principle 3: Environmental Sustainability:</b> Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below</p>	
<p><b>Standard 1: Biodiversity Conservation and Sustainable <u>Natural</u> Resource Management</b></p>	
<p>1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?</p> <p><i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i></p>	
<p>1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?</p>	
<p>1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)</p>	
<p>1.4 Would Project activities pose risks to endangered species?</p>	
<p>1.5 Would the Project pose a risk of introducing invasive alien species?</p>	
<p>1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?</p>	
<p>1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?</p>	
<p>1.8 Does the Project involve significant extraction, diversion or containment of surface or ground water?</p> <p><i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i></p>	
<p>1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)</p>	
<p>1.10 Would the Project generate potential adverse transboundary or global environmental concerns?</p>	
<p>1.11 Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area?</p> <p><i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i></p>	



<b>Standard 2: Climate Change Mitigation and Adaptation</b>	
2.1 Will the proposed Project result in significant <sup>43</sup> greenhouse gas emissions or may exacerbate climate change?	
2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	
2.3 Is the proposed Project likely to directly or indirectly increase social and environmental <u>vulnerability to climate change</u> now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	
<b>Standard 3: Community Health, Safety and Working Conditions</b>	
3.1 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	
3.2 Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	
3.3 Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	
3.4 Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	
3.5 Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	
3.6 Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	
3.7 Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	
3.8 Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	
3.9 Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	
<b>Standard 4: Cultural Heritage</b>	

<sup>43</sup> In regards to CO<sub>2</sub>, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

<p>4.1 Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect, and conserve Cultural Heritage may also have inadvertent adverse impacts)</p>	
<p>4.2 Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?</p>	
<p><b>Standard 5: Displacement and Resettlement</b></p>	
<p>5.1 Would the Project potentially involve temporary or permanent and full or partial physical displacement?</p>	
<p>5.2 Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?</p>	
<p>5.3 Is there a risk that the Project would lead to forced evictions?<sup>44</sup></p>	
<p>5.4 Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?</p>	
<p><b>Standard 6: Indigenous Peoples</b></p>	
<p>6.1 Are indigenous peoples present in the Project area (including Project area of influence)?</p>	
<p>6.2 Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?</p>	
<p>6.3 Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?</p> <p><i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i></p>	
<p>6.4 Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?</p>	
<p>6.5 Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?</p>	

<sup>44</sup> Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.6 Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	
6.7 Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	
6.8 Would the Project potentially affect the physical and cultural survival of indigenous peoples?	
6.9 Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	
<b>Standard 7: Pollution Prevention and Resource Efficiency</b>	
7.1 Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or <u>transboundary impacts</u> ?	
7.2 Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	
7.3 Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs?  <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	
7.4 Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	
7.5 Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	

### APPENDIX 2: INDICATIVE OUTLINE OF AN ESMP

An ESMP may be prepared as part of the Environmental and Social Impact Assessment (ESIA) or as a stand-alone document.<sup>45</sup> The content of the ESMP should address the following sections:

(1) **Mitigation:** Identifies measures and actions in accordance with the mitigation hierarchy that avoid, or if avoidance not possible, reduce potentially significant adverse social and environmental impacts to acceptable levels. Specifically, the ESMP: (a) identifies and summarizes all anticipated significant adverse social and environmental impacts; (b) describes – with technical details – each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; (c) estimates any potential social and environmental impacts of these measures and any residual impacts following mitigation; and (d) takes into account, and is consistent with, other required mitigation plans (e.g. for displacement, indigenous peoples).

(2) **Monitoring:** Identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

(3) **Capacity development and training:** To support timely and effective implementation of social and environmental project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level. Specifically, the ESMP provides a description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g. for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). Where support for strengthening social and environmental management capability is identified, ESMP recommends the establishment or expansion of the parties responsible, the training of staff and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.

(4) **Stakeholder Engagement:** Outlines plan to engage in meaningful, effective and informed consultations with affected stakeholders. Includes information on (a) means used to inform and involve affected people in the assessment process; (b) summary of stakeholder engagement plan for meaningful, effective consultations during project implementation, including identification of milestones for consultations, information disclosure, and periodic reporting on progress on project implementation; and (c) description of effective processes for receiving and addressing stakeholder concerns and grievances regarding the project's social and environmental performance.

(5) **Implementation action plan (schedule and cost estimates):** For all four above aspects (mitigation, monitoring, capacity development, and stakeholder engagement), ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables. Each of the measures and actions to be implemented will be clearly specified and the costs of so doing will be integrated into the project's overall planning, design, budget, and implementation.

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<sup>45</sup> This may be particularly relevant where contractors are being engaged to carry out the project, or parts thereof, and the ESMP sets out the requirements to be followed by contractors. In this case the ESMP should be incorporated as part of the contract with the contractor, together with appropriate monitoring and enforcement provisions.



## **Annex VI (b) – Environmental and Social Management Framework**

Green Climate Fund Funding Proposal

### APPENDIX 3: STAKEHOLDER ENGAGEMENT PLAN

The proposed project has been developed based on multi-stakeholder discussions and participation of a wide range of stakeholder groups throughout the project design and feasibility study. Under the leadership of the Government of Zimbabwe, primarily the Ministry of Lands, Agriculture, Climate, Water and Rural Resettlement (MLACWRR), the project team analyzed the climate change risks affecting Zimbabwe and identified high impact interventions to adapt to and build resilience to climate change for the vulnerable rural population. Throughout the process, the project consulted with a GoZ Think Tank comprised of participants from relevant ministries, parastatals and NGOs for discussion, feedback and endorsement of the project targets, theory of change and prioritized interventions. Relevant stakeholders to be involved in project implementation, M&E and post project O&M were also consulted during the process and have taken part in the feasibility study field visits and data collection. Key stakeholders in project implementation include the Ministry of Lands, Agriculture, Climate, Water and Rural Resettlement (MLACWRR), primarily the Departments of Economics and Markets, Irrigation, Agricultural Extension Service and Research and Specialist Services (E&M, DoI, AGRITEX, DR&SS); and the Ministry of Environment, Water and Climate, primarily the department of Climate Change Management and Meteorological Services (CCMD, MSD), as well as the parastatal Zimbabwe National Water Authority (ZINWA). WFP will take the role of service provider in rolling out the PICSA activities.

The targeted communities have been engaged through the feasibility study processes, and their needs and views are reflected in the proposed interventions. Civil society organizations, non-governmental organizations and private sector players have been engaged in the process, providing technical advice and expressing interest in the proposed project. (please see the Stakeholder Consultations Report, Annex XIII (d1) for details).

Stakeholder engagement in project implementation will start with inception workshops to kick off the project.

- A national level inception workshop, led by the MLACWRR will present the project to national level stakeholders to confirm a shared understanding of project objectives, go through the project theory of change and implementation plan, discuss and agree roles and responsibilities, get stakeholder feedback and recommendations for project implementation and introduce the project support team to stakeholders. The inception workshop will also provide a detailed overview of UNDP-GCF reporting and M&E requirements and procedures for oversight.
- Similarly, three provincial inception workshops will be held with relevant provincial and district level stakeholders to kick start and support implementation at the provincial and district level.

In addition to this, informal stakeholder engagement will also take place. The project intends to emphasize regular review and learning events to support adaptive management and learning across the responsible partners and the project implementation areas. The project PMU is shared with the Zimbabwe Resilience Building Fund, facilitating a larger knowledge and evidence base to draw from and a wide range of stakeholders to learn with. This will support the project in drawing on and promoting best practice across the country. The regular monitoring, learning and review events will also allow for stakeholders to raise issues of concern and grievances to be addressed.

Each project output will be delivered in close collaboration with key stakeholders:

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**Output 1:** Ministry of Lands, Agriculture, Climate, Water and Rural Resettlement (MLACWRR), namely the Department of Irrigation and AGRITEX will support the project team in implementing this output. Following capacity building, the Department of Irrigation will play a lead role in rolling out climate resilient irrigation infrastructure. The DFID supported *Climate Resilient*

*Infrastructure Development Facility* may provide technical advice in the process of climate proofing irrigation schemes. As the DoI is mainly present at provincial level, the district and ward level AGRITEX officers will support smallholder farmers' Irrigation Management Committees in irrigation schemes in appropriate, climate-smart and effective irrigation scheduling and cropping, while also supporting farmers on rain fed farmland to harvest rainfall

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and conserve soil moisture efficiently. AGRITEX will be trained to take up this responsibility and will take part in the setup of irrigation scheme IMCs and take the lead in the running of farmer field schools. The project also has a strong focus on ensuring gender equal participation in the IMC's and will engage with local women's groups in carrying out gender equality and women empowerment training. An NGO will be competitively procured to carry out the gender component for output 1 and 2, and it is expected that the gender equality and women's empowerment trainings may build on the successful experiences of OXFAM implementation of the Gender Action Learning System as part of the DFID-supported Livelihoods and Food Security programme in Northern Zimbabwe. In addition to these stakeholders, the private sector value chain actors and financial institutions will be engaged in terms of ensuring that IMC's are able to strike up contracts with private sector players on inputs and produce markets to facilitate a sustained income and ensure continued generation of finances for operations and maintenance for the scheme.

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**Output 2:** Ministry of Agriculture, Mechanisation and Irrigation Development, namely AGRITEX and the Department of Research and Specialist Services, will support the project team in implementing this output. AGRITEX is present at the provincial, district and ward levels and have direct and frequent engagement with smallholder farmers. DR&SS is present at the provincial level and has several research programs focused on climate-smart agriculture and conservation agriculture with smallholder farmers. The CGIAR research institutions ICRISAT and CIMMYT are hosted at DR&SS research stations and collaborate closely with the department on CSA. This output focuses on promoting and anchoring climate-smart agriculture practices with smallholder farmers on drylands as well as irrigated land. In doing so, the project will make use of the successful experience of a combination of farmer field schools and innovation platforms as piloted by DR&SS in collaboration with CGIAR partners. This allows for climate-smart agricultural best practices to be adapted to a Zimbabwean context and developed together with a group of smallholder farmers before being scaled out through extension services and farmers' own engagement with their peers. Also, the Innovation Platforms provide a space for developing inclusive and climate resilient marketing links between smallholder farmers and private sector – building trust and business linkages and facilitating impactful private sector investments into the smallholder agriculture sector. A research institution or NGO with experience in linking smallholder farmers and private sector through innovation platforms for climate-smart agriculture practices and markets will be procured to run the Innovation Platforms in close collaboration with DR&SS and AGRITEX. Output 2 also has a strong focus on gender equality, recognizing that the majority of smallholder farmers are women and that gender equal opportunities and women empowerment are key to maximize productivity. A NGO will be competitively procured to carry out the gender component for both Outputs 1 and 2, and it is expected that the gender equality and women empowerment trainings may build on the successful experiences of OXFAM implementation of the Gender Action Learning System, as part of the DFID supported Livelihoods and Food Security programme in Northern Zimbabwe.

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**Output 3:** Ministry of Lands, Agriculture, Climate, Water and Rural Resettlement (MLACWRR), namely the Meteorological Services Department and the parastatal ZINWA, are the key stakeholders supporting implementation of this output. MSD will lead the work on setup and maintenance of automated weather stations, the development of a seasonal forecasting system targeting farmers through the PICSA methodology and the systematic dissemination of this information to farmers to support climate-smart agricultural decision making. AGRITEX will be a key stakeholder in developing the seasonal forecast to fit farmers' needs and to disseminate forecasts. WFP will take the role of service provider in the roll out of the PICSA training as well as support the interagency group on development of seasonal forecasting, based on the organizations ongoing and planned work on climate information systems and early warning in Zimbabwe and collaboration with the University of Reading, which has developed the PICSA methodology. In order to strengthen and sustain local academic capacity on the climate

information systems, the University of Midlands and possibly other Universities like the University of Zimbabwe will be part of the PICSA trainings, roll out and season forecasting. ZINWA, on the other hand, will lead the work on setting up and maintaining the hydro equipment, the water resource modelling and dissemination of information to farmers and catchment councils on climate-smart and efficient water usage. The development of water resource products and their dissemination will happen in close collaboration with the Department of Irrigation and AGRITEX as well as farmers own organizations, primarily IMCs.

Activity	Sub-activity / input	Timing	Objective	Location	Target Participants
All	National inception workshop	Year 1 (within the first six months)	Establishment of shared understanding of project objectives, roles and responsibilities, guidelines for project implementation and road map for implementation among stakeholders	Harare	National stakeholders: MLACWRR departments and ZINWA, development partners, farmers associations, private sector, NGO's and research institutions
	Provincial inception workshop	Year 1 (within the first six months)	Establishment of shared understanding of project objectives, roles and responsibilities, guidelines for project implementation and road map for implementation among stakeholders	Mutare, Masvingo, Bulawayo	Provincial stakeholders: MLACWRR departments and ZINWA, development partners, farmers associations, private sector, NGO's and research institutions



1.1	1.1.1 Climate proofing and revitalizing existing irrigation infrastructure and equipment in 21 irrigation schemes (see Irrigation Sub Assessment for detailed description)	Year 1-3	Rehabilitation/construction of irrigation infrastructure and equipment	Mutare, Masvingo, Bulawayo	Contractors, DOI, IMCs
	1.1.2 Training of 21 Irrigation Management Committees (IMCs) in climate-adapted O&M and monitoring, and establishment of O&M funds	Year 2, Year 4, Year 6	Focus on a) climate adapted operations and maintenance of irrigation systems, b) project planning and monitoring methods c) organizational management and administration, conflict resolution, and establishment and	Mutare, Masvingo, Bulawayo	Provincial DoI, district and ward level AGRITEX staff, IMCs

			fiscal management of O&M Funds		
	1.1.3 Field visits and technical advisory support by DOI to IMCs to support climate-resilient O&M and operationalization of the O&M funds (years 2 through 4) based on detailed O&M plan	Year 1-2	Facilitation of effective consultations and training with IMCs	Mutare, Masvingo, Bulawayo	Provincial DoI and district level AGRITEX staff, IMCs
	1.1.4 Learning and knowledge exchange workshops across IMCs to improve coordination and scaling up of climate resilient irrigation systems (9 provincial district level peer meetings)	Year 2, Year 4, Year 6	Focus on learning and coordination, particularly within catchments	Manicaland, Masvingo, Matabeleland South provinces	IMCs, DoI



<b>1.2</b>	1.2.1 Field-based training of 6,900 lead rain fed farmers in 230 Farmer Field Schools in rainwater harvesting, soil moisture management techniques and water efficiency practices (six sessions over two years for each FFS of 30 lead farmers each)	Year 2, Year 4, Year 6	The FFS is a highly participatory process that builds farmers knowledge, support their practice and encourages them to share with/engage the wider community	137 climate vulnerable wards in Manicaland, Masvingo, Matabeleland South provinces	DR&SS provincial staff, AGRITEX district and ward level staff, lead farmers, wider community
	1.2.2 Procurement and installation by farmers of technologies to implement climate resilient water resource management in rainfed farmlands	Year 2-6	With increased technical capacities technologies are procured and installed to implement more efficient water resource management	137 climate vulnerable wards in Manicaland, Masvingo, Matabeleland South provinces	DR&SS provincial staff, AGRITEX district and ward level staff, lead farmers, wider community
	1.2.3 Participatory workshops and onsite assistance by lead farmers to facilitate farmer-to-	Year 2-6	The FFS is a highly participatory process that builds farmers knowledge, support their practice and	137 climate vulnerable wards in Manicaland, Masvingo,	137 climate vulnerable wards in Manicaland, Masvingo,
	farmer learning to scale up implementation of climate-resilient water resource management (Two open community learning days per FFS, under AGRITEX supervision)		encourages them to share with/engage the wider community	Matabeleland South provinces	Matabeleland South provinces

2.1	2.1.1 Technical assistance, trainings and meetings to establish, operationalize, and coordinate five multi stakeholder Innovation Platforms (through quarterly meetings over four years) across 15 districts and one national-level Platform (through biannual meetings over four years) for upscaling diversified climate resilient production and access to markets	Year 2-5	The IP is a highly participatory forum, where farmers experiences from FFS are shared and developed, where farmers and value chain actors consult on how best to develop value chains and where stakeholders across the value chain are connected. The national level IP draws on systematically identified and evidence based good practice to influence policy and financial decisions to reflect lessons learnt from stakeholders' experience and out scale good practice through the extension system	Manicaland, Masvingo, Matabeleland South provinces - National level – Harare	DR&SS provincial staff , AGRITEX district and ward level staff, lead farmer representatives, private sector, research institutions  National level DoI, DR&SS and AGRITEX staff at director and technical level, private sector players, research institutions, NGO's, farmers org. representatives
	2.1.2 Develop crop specific production and market strategies for use by all relevant value chain actors for climate-smart production and market access (two-day strategy development workshops per platform per year over 4 years and at least five plans)	Year 2-3	IP constituents discuss goals, objectives, outputs, inputs for selected commodities and agree on strategy. IP constituents develop partnerships for value chain development.	Manicaland, Masvingo, Matabeleland South provinces	IP constituents from farmers organizations, input providers, buyers, AGRITEX, others.
	2.1.3 Technical assistance (including	Year 2-5	Multi-stakeholder partnerships identify	Manicaland, Masvingo,	IP constituents from farmers



	legal support services to farmer organizations) to facilitate and formalize public-private partnerships across value-chain actors to upscale climate-resilient agricultural markets		contractual and other legal requirements to expedite value chain development, along with capacity gaps.	Matabeleland South provinces	organizations, input providers, buyers, AGRITEX, others.
	2.1.4 Technical assistance and business planning and management training to smallholder farmers, particularly women (under a ward-based gender equality action learning program and women financial empowerment training programme) and financial intermediaries to enable access to finance for sustained scaling up climate resilient agriculture (three programmes promoting Women’s leadership through economic leadership, gender equity and empowerment)	Year 2-5	Multi-stakeholder partnerships identify business development and management requirements to expedite value chain development, along with capacity gaps.	Manicaland, Masvingo, Matabeleland South provinces	IP constituents from farmers organizations, input providers, buyers, AGRITEX, others.
2.2	2.2.1 Training of Trainers (155 national, provincial, district and ward level AGRITEX staff), particularly women, to conduct Farmer Field Schools in 15 target Districts of southern Zimbabwe	Year 1-2	Training in FFS facilitation	Mutare, Masvingo, Bulawayo	Provincial and district level AGRITEX staff, lead farmers
	2.2.2 Organization and operationalization of 251 Farmer Field Schools for promotion of	Year 1-5	Identification of participants, learning site establishment	137 climate vulnerable wards in Manicaland, Masvingo, Matabeleland	Smallholder farmers, lead farmers, AGRITEX district and ward level staff

	climate-resilient agriculture in the 15 Districts			South provinces	
	2.2.3 Procurement of inputs and technologies (e.g. seeds, tools, fertilizers) to implement CSA packages on 6900 lead farmer plots	Year 1-5	Procurement of necessary inputs for learning sites	137 climate vulnerable wards in Manicaland, Masvingo, Matabeleland South provinces	Lead farmers, AGRITEX
	2.2.4 Workshops and on-site assistance by lead farmers to facilitate farmer-to-farmer learning to scale up implementation of climate-smart agricultural practices and cropping systems (One community open day per FFS. Under AGRITEX supervision, each lead farmer engages additional 10 farmers each through workshops and on-site assistance)	Year 1-5	Lead farmers meet at learning sites with groups of farmers in their wards to discuss and analyze climate resilient agricultural techniques and practices, then follow up with visits to farmer fields.	137 climate vulnerable wards in Manicaland, Masvingo, Matabeleland South provinces	Lead farmers, participating smallholders, AGRITEX
<b>2.3</b>	2.3.1 Upgrade ICT/GIS data collection/sharing platforms and protocols for knowledge management on climate resilient agricultural systems and livelihoods across knowledge centers in participating agricultural colleges and research centers.	Year 1	Technical assistance to upgrade platforms and protocols	National, provincial, district level	AGRITEX, DR&SS, MSD
	2.3.2 Generation, codification and knowledge exchange across agricultural colleges and research	Year 2-7	AGRITEX staff identify lessons from experience with climate-smart agricultural practices	National, provincial, district level	AGRITEX, DR&SS

			and technologies, draft		
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	centers for climate resilient agriculture		knowledge products and disseminate across and interact with ag colleges and research centers.		
	2.3.3 Impact evaluation and codification of best practices/lessons for systemic, evidence-based learning to scale-up resilient agricultural livelihoods	Year 7	Project components evaluated for impacts, conclusions and lessons are codified, and results disseminated to policy makers for potential scaling up support.	National, provincial, district level	MLACWRR
<b>3.1</b>	3.1.1: Install 12 automatic weather stations to cover key agricultural zones and 10 automatic low-cost rainfall/weather stations to improve rainfall monitoring in the three catchments	Year 1-2	Weather stations installed in key areas of agro-ecological zones.	Mutare, Masvingo, Bulawayo	MSD, AGRITEX
	3.1.2: Install 10 water level/gauging stations at strategic points in the three catchments	Year 1-2	Water level gauging stations installed in strategic points of the three catchments	Mutare, Masvingo, Bulawayo	MSD
	3.1.3: Upgrade systems and institutional capacities for hydrometeorological data transmission and processing to enable localized weather, climate and hydrological model forecast generation	Year 2-3	MSD, AGRITEX, DR&SS staff capacities and systems are upgraded to efficiently process data transmission and processing.	Mutare, Masvingo, Bulawayo	MSD, DR&SS, AGRITEX



	3.1.4: Train MSD, ZINWA, DR&SS/AGRITEX officials, community observers (low-cost stations) in collecting data, operating and maintaining equipment	Year 2-3	Institutional staff and community observers receive training.	Mutare, Masvingo, Bulawayo	MSD, ZINWA, DR&SS, AGRITEX, smallholder community observers
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<b>3.2</b>	3.2.1: Develop information products, incorporating indigenous knowledge, that strengthen existing national satellite/ observation-based weather, 10-day and seasonal forecasts and advisories targeted to smallholder farmers	Year 2-6	This involves a consultative process with CIS users, as per the PICSA methodology, multi stakeholder forums working across institutional boundaries at national through to local level. A key aspect is to ensure that advisories are targeted, easy to understand and accessible to beneficiary farmers.	Mutare, Masvingo, Bulawayo	WFP, AGRITEX, DR&SS, MSD, smallholder farmer representatives
	3.2.2 Train national level ZINWA staff (partnering with UoZ) in the use of water resource models (2 trainings in WEAP and Pitman models) as well as ingesting input data from weather/climate observations and forecasts	Year 2-3	ZINWA staff receive technical training in water resource modelling.	Mutare, Masvingo, Bulawayo	ZINWA, MSD
	3.2.3 Develop regular hydrological forecasts, incorporating daily updates of hydromet observations and forecasts	Year 2-6	Using data and capacities from previous inputs and sub-activities, develop periodic hydrological forecasts.	National, provincial, district level	MSD, ZINWA, DR&SS, AGRITEX

	3.2.4: Disseminate climate information through mobile phones, community radio, community meetings and local posters and bulletins (costs of SMS messaging, design and formatting advisories, community radio programmes, 20 community meetings)	Year 2-7	MSD and AGRITEX disseminate climate information using existing and novel communications systems.	National, provincial, district level	MSD, AGRITEX
<b>3.3</b>	3.3.1: Training of local level DoI,	Year 2	Local level institutional staff receive training	District level	DoI, ZINWA, AGRITEX
	ZiNWA and CC staff in data analysis and production of information products (based on observed and forecast water levels and weather/climate forecasts) for water resource management		for production of information products.		
	3.3.2: Participatory training of farmers and district and local level intermediaries – including Agriculture Extension, MSD and IMC staff - in interpretation and use of climate and weather information products for crop/water management	Year 2-7	Farmers and local level authorities and institutional staff receive training to interpret and use agroclimatic information for crop/water management.	District and ward level	AGRITEX, MSD, IMCs, other smallholder representatives





3.3.3 Set up communication and database systems to facilitate climate information management (equipment and communication materials) at three agricultural training colleges - Masvingo, Makoholi, and Esigodin (printing and distribution materials, translation into local languages, communication costs)	Year 3-5	Systems set up to facilitate information management, including equipment and communication materials, as well as translation into local languages.	Masvingo, Makoholi, and Esigodin	AGRITEX, DR&SS
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## APPENDIX 4: GRM FORM TO SECU &/OR SRM



*Empowered lives.  
Resilient nations.*

### Guidance for Submitting a Request to the Social and Environmental Compliance Unit (SECU) and/or the Stakeholder Response Mechanism (SRM)

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#### **Purpose of this form**

- **If you use this form, please put your answers in bold writing to distinguish text**
- **The use of this form is recommended, but not required. It can also serve as a guide when drafting a request.**

This form is intended to assist in:

- (1) Submitting a request when you believe UNDP is not complying with its social or environmental policies or commitments and you are believing you are being harmed as a result. This request could initiate a 'compliance review', which is an independent investigation conducted by the Social and Environmental Compliance Unit (SECU), within UNDP's Office of Audit and Investigations, to determine if UNDP policies or commitments have been violated and to identify measures to address these violations. SECU would interact with you during the compliance review to determine the facts of the situation. You would be kept informed about the results of the compliance review.

and/or

- (2) Submitting a request for UNDP "Stakeholder Response" when you believe a UNDP project is having or may have an adverse social or environmental impact on you and you would like to initiate a process that brings together affected communities and other stakeholders (e.g., government representatives, UNDP, etc.) to jointly address your concerns. This Stakeholder Response process would be led by the UNDP Country Office or facilitated through UNDP headquarters. UNDP staff would communicate and interact with you as part of the response, both for fact-finding and for developing solutions. Other project stakeholders may also be involved if needed.

Please note that if you have not already made an effort to resolve your concern by communicating directly with the government representatives and UNDP staff responsible for this project, you should do so before making a request to UNDP's Stakeholder Response Mechanism.

**Confidentiality** If you choose the Compliance Review process, you may keep your identity confidential (known only to the Compliance Review team). If you choose the Stakeholder Response Mechanism, you can choose to keep your identity confidential during the initial eligibility screening and assessment of your case. If your request is eligible and the assessment indicates that a response is appropriate, UNDP staff will discuss the proposed response with you, and will also discuss whether and how to maintain confidentiality of your identity.

**Guidance**

When submitting a request please provide as much information as possible. If you accidentally email an incomplete form, or have additional information you would like to provide, simply send a follow-up email explaining any changes.

**Information about You**

Are you...

1. A person affected by a UNDP-supported project?

Mark “X” next to the answer that applies to you:                      Yes:                      No:

2. An authorized representative of an affected person or group?

Mark “X” next to the answer that applies to you:                      Yes:                      No:

*If you are an authorized representative, please provide the names of all the people whom you are representing, and documentation of their authorization for you to act on their behalf, by attaching one or more files to this form.*

3. First name:
4. Last name:
5. Any other identifying information:
6. Mailing address:
7. Email address:
8. Telephone Number (with country code):
9. Your address/location:
10. Nearest city or town:
11. Any additional instructions on how to contact you:
12. Country:

**What you are seeking from UNDP: Compliance Review and/or Stakeholder Response**

You have four options:

- Submit a request for a Compliance Review;
- Submit a request for a Stakeholder Response;
- Submit a request for both a Compliance Review and a Stakeholder Response;
- State that you are unsure whether you would like Compliance Review or Stakeholder Response and that you desire both entities to review your case.

13. Are you concerned that UNDP’s failure to meet a UNDP social and/or environmental policy or commitment is harming, or could harm, you or your community? Mark “X” next to the answer that applies to you:                      Yes:                      No:

14. Would you like your name(s) to remain confidential throughout the Compliance Review process?

Mark “X” next to the answer that applies to you:                      Yes:                      No:

If confidentiality is requested, please state why:

15. Would you like to work with other stakeholders, e.g., the government, UNDP, etc. to jointly resolve a concern about social or environmental impacts or risks you believe you are experiencing because of a UNDP project?

Mark “X” next to the answer that applies to you:    Yes:            No:

16.    Would you like your name(s) to remain confidential during the initial assessment of your request for a response?

Mark “X” next to the answer that applies to you:    Yes:            No:

If confidentiality is requested, please state why:

17.    Requests for Stakeholder Response will be handled through UNDP Country Offices unless you indicate that you would like your request to be handled through UNDP Headquarters. Would you like UNDP Headquarters to handle your request?

Mark “X” next to the answer that applies to you:    Yes:            No:

If you have indicated yes, please indicate why your request should be handled through UNDP Headquarters:

18.    Are you seeking both Compliance Review and Stakeholder Response?

Mark “X” next to the answer that applies to you:    Yes:            No:

19.    Are you unsure whether you would like to request a Compliance Review or a Stakeholder Response?  
Mark “X” next to the answer that applies to you:    Yes:            No:

**Information about the UNDP Project you are concerned about, and the nature of your concern:**

20.    Which UNDP-supported project are you concerned about? (if known):

21.    Project name (if known):

22.    Please provide a short description of your concerns about the project. If you have concerns about UNDP’s failure to comply with its social or environmental policies and commitments, and can identify these policies and commitments, please do (not required). Please describe, as well, the types of environmental and social impacts that may occur, or have occurred, as a result. If more space is required, please attach any documents. You may write in any language you choose

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23.    Have you discussed your concerns with the government representatives and UNDP staff responsible for this project? Non-governmental organisations?

Mark “X” next to the answer that applies to you:    Yes:            No:

If you answered yes, please provide the name(s) of those you have discussed your concerns with

Name of Officials You have Already Contacted Regarding this Issue:

First Name	Last Name	Title/Affiliation	Estimated Date of Contact	Response of Individual	from the
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24.    Are there other individuals or groups that are adversely affected by the project?

Mark “X” next to the answer that applies to you:    Yes:            No:

25.    Please provide the names and/or description of other individuals or groups that support the request:

First Name	Last Name	Title/Affiliation	Contact Information
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## **Annex VI (b) – Environmental and Social Management Framework**

Green Climate Fund Funding Proposal

Please attach to your email any documents you wish to send to SECU and/or the SRM. If all of your attachments do not fit in one email, please feel free to send multiple emails.

### Submission and Support

To submit your request, or if you need assistance please email: [project.concerns@undp.org](mailto:project.concerns@undp.org)