



Safeguard Risk Identification Form (SRIF)

Section 1: Project Overview

Identification	<i>Insert Project ID# from Programme Framework Table</i> AF-2021000177 (CTCN 2021000041)
Project Title	<i>Insert title (adding words 'project preparation proposal for' before title)</i> Aquifer mapping technologies for Zambia
Managing Division	UNEP – Economic Division – CTCN
Type/Location	<i>[Global/Normative; Regional; National]</i> National
Region	<i>(Africa/ Europe/ North America/ Asia Pacific/ Latin America Caribbean/ West Asia)</i> Africa
List Countries	<i>Enter country name(s)</i> Zambia
Project Description	<p>Provide the project summary and description in 2-3 paragraphs</p> <p>In Zambia, groundwater is the major source of domestic water and its use for irrigation is predicted to increase substantially to combat growing food insecurity. Despite this, there is little quantitative information on groundwater resources in Zambia and groundwater storage is consequently omitted from assessments of freshwater availability.</p> <p>This technical assistance will select a specific area of Zambia and undertake a water balance analysis and map aquifers of the selected location. Based on this water balance, possible technologies will be identified, and the possible impact of these technologies will be estimated through a predictive model. Finally, a water management plan for surface and groundwater and implementation plan for aquifer mapping will be developed including clear measures and actions that could be used in the country to increase the resilience of Zambia in time of drought. Capacity building and stakeholder´s consultations will be organized at each stage of the implementation to ensure knowledge sharing.</p>
Relevant Subprogrammes	/
Estimated duration of project	<i>Provide the estimate in months from project kickoff to completion. Do not include time spent on concept or design.</i> 12 months
Estimated cost of the project	<i>Provide the estimated cost for entire project in USD.</i> 250,000 USD
Name of the UNEP project manager responsible	Rajiv Garg
Funding Source(s)	AFCIA



Executing/Implementing partner(s)	CTCN
SRIF submission version	<i>If it is not the first time, mark the time of your previous submission</i> Concept Review [] During Project development [] PRC [] Other _____ Version 1
Safeguard-related reports prepared so far <i>(Please attach the documents or provide the hyperlinks)</i>	<ul style="list-style-type: none"> • Feasibility report [] • Gender Action Plan [] • Stakeholder Engagement Plan [] • Safeguard risk assessment or impact assessment [] • ES Management Plan or Framework [] • Indigenous Peoples Plan [] • Cultural Heritage Plan [] • Others _____

Section 2: Safeguards Risk Summary

A. Summary of the Safeguards Risk Triggered

Safeguard Standards Triggered by the Project	Impact of Risk ¹ (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H) <i>Please refer to the matrix below</i>
SS 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	2	1	L
SS 2: Climate Change and Disaster Risks	2	2	L
SS 3: Pollution Prevention and Resource Efficiency	1	1	L
SS 4: Community Health, Safety and Security	1	1	L
SS 5: Cultural Heritage	1	1	L
SS 6: Displacement and Involuntary Resettlement	1	1	L
SS 7: Indigenous Peoples	2	2	L
SS 8: Labor and working conditions	1	1	L

B. ESS Risk Level² -

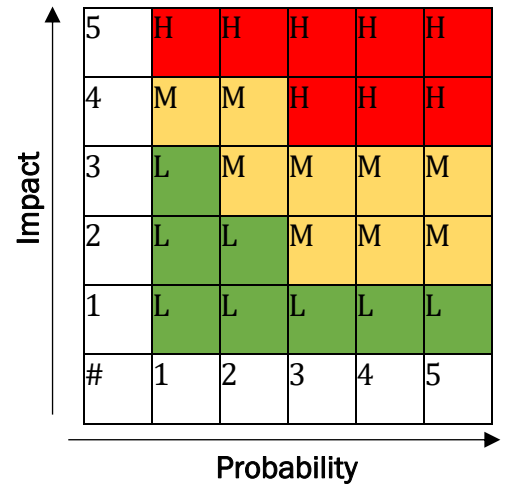
¹ Refer to UNEP Environmental and Social Sustainability Framework (ESSF): Implementation Guidance Note to assign values to the Impact of Risk and the Probability of Risk to determine the overall significance of Risk (Low, Moderate or High).

² **Low risk:** Negative impacts minimal or negligible: no further study or impact management required.
Moderate risk: Potential negative impacts, but limited in scale, not unprecedented or irreversible and generally limited to programme/project area; impacts amenable to management using standard mitigation measures; limited environmental or social analysis may be required to develop a Environmental and Social Management Plan (ESMP). Straightforward application of good practice may be sufficient without additional study.
High risk: Potential for significant negative impacts (e.g., irreversible, unprecedented, cumulative, significant stakeholder concerns); Environmental and Social Impact Assessment (ESIA) (or Strategic Environmental and Social Assessment (SESA)) including a full impact assessment may be required, followed by an effective comprehensive safeguard management plan.



Refer to the UNEP ESSF (Chapter IV) and the UNEP’s ESSF Guidelines.

- Low risk
- Moderate risk
- High risk
- Additional information required



C. Development of SRIF and Screening Decision

Prepared by

Name: _____Rajiv Garg_____ Date: _____07 of February 2022_____

Screening review by

Name: Yunae Yi Date: 08/02/2022

Cleared³

D. Safeguard Review Summary (by the safeguard team)

This is a low-risk project. However, the guiding principles (GP 1-10 in the Section 3 below) should be responded throughout the project implementation. SS 2 and SS 7 would require attention through precautionary approach and close stakeholder consultation.

A. Safeguard Recommendations (by the safeguard team)

- No specific safeguard action required
- Take Good Practice approach⁴

³ This is signed only for the full projects latest by the PRC time.

⁴ Good practice approach: For most low-moderate risk projects, good practice approach may be sufficient. In that case, no separate management plan is necessary. Instead, the project document demonstrates safeguard management approach in the project activities, budget, risks management, stakeholder engagement or/and monitoring segments of the project document to avoid or minimize the identified potential risks without preparing a separate safeguard management plan.



- Carry out further assessments (e.g., site visits, experts' inputs, consult affected communities, etc.)
- Carry out impact assessments (by relevant experts) in the risk areas and develop management framework/plan
- Consult Safeguards Advisor early during the full project development phase
- Other _____

Section 3: Safeguard Risk Checklist

Screening checklist	Y/N/ Maybe	Justification for the response (please provide answers to each question)
Guiding Principles (these questions should be considered during the project development phase)		
GP1 Has the project analyzed and stated those who are interested and may be affected positively or negatively around the project activities, approaches, or results?	Y	The project has analyzed and has identified stakeholders who are going to be positively or negatively impacted by the project implementation in consultation with the Ministry of Technology and Science and the Ministry of Water Development and Sanitation of Zambia. The participation of women and youth will be proactively ensured throughout the implementation as per UN/CTCN rules. Local communities and governmental entities have been informed of the technical assistance through the Ministry of Technology and Science and the Ministry of Water Development and Sanitation of Zambia.
GP2 Has the project identified and engaged vulnerable, marginalized people, including disabled people, through the informed, inclusive, transparent, and equal manner on potential positive or negative implication of the proposed approach and their roles in the project implementation?		The project has identified the vulnerable groups, including community groups, community leaders, NGOS and CBOs, and will ensure gender and youth participation during the implementation phase through trainings and stakeholder's consultation process. The mapping of the stakeholders will be revised at the very beginning of the project and an inception meeting will be planned to inform the stakeholders of the start of the initiative one month after the signature of the contract between UNEP and the implementer.



<p>GP3 Have local communities or individuals raised human rights or gender equality concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?</p>		<p>No. During the formulation of the proposal no concerns were raised by local communities on human rights. On the contrary, it is expected that the project will provide a better understanding of Zambia’s water resources, support the identification of drought and water scarcity situations, identify “where best to target efforts”, facilitate the identification of priority water data flows, provide sounder arguments as part of communication and awareness raising. It is considered that a comprehensive and reliable scientific database on groundwater for the entire country is a prerequisite for proper management of groundwater resources and for planning its optimum development and effective utilization.</p>
<p>GP4 Does the proposed project consider gender-balanced representation in the design and implementation?</p>		<p>Yes. Gender representative participation has been considered in the design and implementation. As per the CTC-N guidelines approved by the Advisory Board under Climate Convention, a fixed percentage of the project costs are towards gender and youth.</p>
<p>GP5 Did the proposed project analyze relevant gender issues and develop a gender responsive project approach?</p>		<p>Yes, gender has been considered in the design of all the activities of the project proposal. The project team consists of one gender expert out of a team of 6 experts, and the participation of women for the other profiles has been encouraged. The stakeholders will be mapped at the very beginning of the project with gender representative participation. An inception meeting will be organized one month after the signature of the contract between UNEP and the implementer. This inception meeting will be the opportunity to able to identify the needs, concerns, ideas, opportunities, roles in the implementation of each stakeholder.</p>
<p>GP6 Does the project include a project-specific grievance redress mechanism? If yes, state the specific location of such information.</p>		<p>Specific grievance redress mechanism</p>
<p>GP7 Will or did the project disclose project information, including the safeguard documents? If yes, please list all the webpages where the information is (or will be) disclosed.</p>		<p>CTC-N webpage and www.open.unep.org Safeguards documents will be uploaded after approval.</p>
<p>GP8 Were the stakeholders (including affected communities) informed of the projects and grievance redress mechanism? If yes, describe how they were informed.</p>		<p>Yes, the stakeholders were informed about the project and the grievance redress mechanism through the the Ministry of Technology and Science and the Ministry of Water Development and Sanitation of Zambia.</p>



		The Response Plan of the project provides the name of the focal point along with its contact details. The Response plan is public and can easily be accessed from the CTCN webpage. Stakeholders will be engaged during the implementation of the project through stakeholder consultations and capacity building that have been planned at all stages of the implementation.
GP9 Does the project consider potential negative impacts from short-term net gain to the local communities or countries at the risk of generating long-term social or economic burden? ⁵		No, the project is a technology assessment that aims at undertaking a water balance analysis and mapping of the aquifers in one selected area of Zambia. The proposed request for CTCN assistance would include the transfer of technologies supporting climate resilient decision-making benefitting the water resource sector. The focus will be on the technology transfer of tools and methods for assessing the latest aquifer mapping and making the information available in the long-term decision processes using robust decision methods.
GP10 Does the project consider potential partial economic benefits while excluding marginalized or vulnerable groups, including women in poverty?		A comprehensive and reliable scientific database on groundwater for the entire country is a prerequisite for proper management of groundwater resources and for planning its optimum development and effective utilization. statistics have shown that there is a strong correlation between economic growth, industrial growth, and water consumption. Therefore, to achieve the much-needed economic growth there is a need to enhance good health through the provision of safe drinking water, promote agriculture irrigation and adapt groundwater management strategies that are climate resilient. Thus, indirect impacts are expected on economic benefits. Marginalized and vulnerable groups, including women in poverty will not be excluded.
Safeguard Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management		
<i>Would the project potentially involve or lead to?</i>		
1.1 conversion or degradation of habitats (including modified habitat, natural habitat, and critical natural habitat), or losses and threats to biodiversity and/or ecosystems and ecosystem services?		No. There are no conversion or degradation of habitats, neither are losses or threats to biodiversity and/or ecosystems and ecosystems services.

⁵For example, a project may consider investing in a commercial shrimp farm by clearing the nearby mangrove forest to improve the livelihood of the coastal community. However, long term economic benefit from the shrimp farm may be significantly lower than the mangroves if we consider full costs factoring safety from storms, soil protection, water quality, biodiversity and so on.



<p>1.2 adverse impacts specifically to habitats that are legally protected, officially proposed for protection, or recognized as protected by traditional local communities and/or authoritative sources (e.g., National Park, Nature Conservancy, Indigenous Community Conserved Area, (ICCA); etc.)?</p>		<p>About 30% of Zambia's 752 614 square kilometers is reserved for wildlife. There are 20 national parks and 34 game management areas in the country.</p> <p>Luambe, and Lukusuzi Liuwa Plain, West Lunga, Sioma Ngwezi, and Nyika Plateau have substantial wildlife but are still undeveloped. Mosi-oa-Tunya, near Victoria Falls, is regarded as a Zoological Park as it has a well-managed population of antelope, elephants, giraffe, and rhino, but does not have any predators.</p> <p>This technical assistance will select a specific area of Zambia to undertake a water balance analysis and mapping of the aquifers. The selection of this area will be done at the start of the implementation and is unknown at the moment.</p> <p>The rating of the safeguards has been scored as a risk - level 2 as the project will be implemented in an unknown location and should impact the country at national level. Nonetheless, the technical assistance aims at developing a robust groundwater management plan to support climate change adaptation strategies in Zambia and should not negatively impact local habitats and their traditional local communities, at the contrary, it should enable a better and more resilient use of surface and groundwater.</p>
<p>1.3 conversion or degradation of habitats that are identified by authoritative sources for their high conservation and biodiversity value?</p>		<p>No, the project is not implemented in an area identified by authoritative sources for their high conservation and biodiversity value.</p>
<p>1.4 activities that are not legally permitted or are inconsistent with any officially recognized management plans for the area?</p>		<p>No, the project will not be in an area where activities are not legally permitted.</p>
<p>1.5 risks to endangered species (e.g., reduction, encroachment on habitat)?</p>		<p>No, the project is expected to create an enabling environment by developing a robust groundwater management plan to support climate change adaptation strategies in Zambia and should not endanger species.</p>
<p>1.6 activities that may result in soil erosion, deterioration and/or land degradation?</p>		<p>No, the project is expected to create an enabling environment by developing a robust groundwater management plan to support climate change adaptation strategies in Zambia and should not result in soil erosion, deterioration and/or land degradation</p>
<p>1.7 reduced quality or quantity of ground water or water in rivers, ponds, lakes, other wetlands?</p>		<p>No, at the contrary, the development of water quantity assessment focusing on water balances or asset accounts (which use</p>



		hydrological information), or incorporating additional elements and economic information related to water using concepts (physical supply and use accounts, hybrid and economic accounts), have been identified as a useful tool for guiding water policy and management at different decision making scales, in particular with regards to the quantitative management and efficient allocation of water resource.
1.8	reforestation, plantation development and/or forest harvesting?	No, the project is not planning any reforestation, plantation development and/or forest harvesting.
1.9	support for agricultural production, animal/fish production and harvesting	The project will not directly support the agricultural production, animal/fish production and harvesting.
1.10	introduction or utilization of any invasive alien species of flora and fauna, whether accidental or intentional?	No.
1.11	handling or utilization of genetically modified organisms?	No.
1.12	collection and utilization of genetic resources?	No.
Safeguard Standard 2: Climate Change and Disaster Risks		
<i>Would the project potentially involve or lead to:</i>		
2.1	improving resilience against potential climate change impact beyond the project intervention period?	Yes, the project should lead to increase resilience against potential climate change impact beyond the project intervention period. It is expected that the project will provide a better understanding of Zambia’s water resources, support the identification of drought and water scarcity situations, identify “where best to target efforts”, facilitate the identification of priority water data flows, provide sounder arguments as part of communication and awareness raising.
2.2	areas that are now or are projected to be subject to natural hazards such as extreme temperatures, earthquakes, extreme precipitation and flooding, landslides, droughts, severe winds, sea level rise, storm surges, tsunami, or volcanic eruptions in the next 30 years?	In Zambia, groundwater constitutes the most important buffer and reserve of water during surplus periods as well as a source of water for streams and/or direct withdrawals in times of shortage and thus are expected to play an essential role in climate change adaptation. However, there are major gaps in the knowledge of groundwater resources in Zambia with inadequate knowledge on the groundwater resources in both quantity and quality for the current, short, and long-term periods with significant uncertainty regarding the impact of climate change on



		<p>groundwater resources and groundwater-dependent ecosystems in Zambia.</p> <p>Water crisis is being experienced in most parts of Zambia especially in drought prone areas. The situation has worsened due to the drying up of surface water resources which much of the population depends on. The reduced amount of rainfall being received because of climate change has negatively affected the water levels of the highly dependent surface water resources. This has led to women and children walking long distances as far as 5km to have access to clean and safe water. As a result, the focus has shifted towards harnessing groundwater resources for various uses. However, the challenge has been the identification of local aquifers across the country especially in rural areas particularly in the Eastern Province.</p>
2.3	outputs and outcomes sensitive or vulnerable to potential impacts of climate change (e.g., changes in precipitation, temperature, salinity, extreme events)?	No.
2.4	local communities vulnerable to the impacts of climate change and disaster risks (e.g., considering level of exposure and adaptive capacity)?	Yes, as agriculture is a major sector of Zambia.
2.5	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No.
2.6	Carbon sequestration and reduction of greenhouse emissions, resource-efficient and low carbon development, other measures for mitigating climate change	This is an adaptation project.
Safeguard Standard 3: Pollution Prevention and Resource Efficiency		
<i>Would the project potentially involve or lead to:</i>		
3.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No.
3.2	the generation of waste (both hazardous and non-hazardous)?	No.
3.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	No.
3.4	the use of chemicals or materials subject to international bans or phase-outs? (e.g. DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol , Minamata Convention , Basel Convention , Rotterdam Convention , Stockholm Convention)	No.



3.5	the application of pesticides or fertilizers that may have a negative effect on the environment (including non-target species) or human health?	No.
3.6	significant consumption of energy, water, or other material inputs?	No.
Safeguard Standard 4: Community Health, Safety and Security		
<i>Would the project potentially involve or lead to:</i>		
4.1	the design, construction, operation and/or decommissioning of structural elements such as new buildings or structures (including those accessed by the public)?	No.
4.2	air pollution, noise, vibration, traffic, physical hazards, water runoff?	No.
4.3	exposure to water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable or noncommunicable diseases?	No.
4.4	adverse impacts on natural resources and/or ecosystem services relevant to the communities' health and safety (e.g., food, surface water purification, natural buffers from flooding)?	No.
4.5	transport, storage use and/or disposal of hazardous or dangerous materials (e.g., fuel, explosives, other chemicals that may cause an emergency event)?	No.
4.6	engagement of security personnel to support project activities (e.g., protection of property or personnel, patrolling of protected areas)?	No.
4.7	an influx of workers to the project area or security personnel (e.g., police, military, other)?	No.
Safeguard Standard 5: Cultural Heritage		
<i>Would the project potentially involve or lead to?</i>		
5.1	activities adjacent to or within a Cultural Heritage site?	No.
5.2	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional, or religious values or to intangible forms of cultural heritage (e.g., knowledge, innovations, practices)?	No.
5.3	utilization of Cultural Heritage for commercial or other purposes (e.g., use of objects, practices, traditional knowledge, tourism)?	No.
5.4	alterations to landscapes and natural features with cultural significance?	No.
5.5	significant land clearing, demolitions, excavations, flooding?	No.
5.6	identification and protection of cultural heritage sites or intangible forms of cultural heritage?	No.
Safeguard Standard 6: Displacement and Involuntary Resettlement		
<i>Would the project potentially involve or lead to:</i>		
6.1	full or partial physical displacement or relocation of people (whether temporary or permanent)?	No.
6.2	economic displacement (e.g., loss of assets or access to assets affecting for example crops, businesses, income generation sources)?	No.



6.2	involuntary restrictions on land/water use that deny a community the use of resources to which they have traditional or recognizable use rights?		No.
6.3	risk of forced evictions?		No.
6.4	changes in land tenure arrangements, including communal and/or customary/traditional land tenure patterns (including temporary/permanent loss of land)?		No.
Safeguard Standard 7: Indigenous Peoples			
<i>Would the project potentially involve or lead to:</i>			
7.1	areas where indigenous peoples are present, or uncontacted or isolated indigenous peoples inhabit or where it is believed these peoples may inhabit?		Zambia is a country of numerical minorities. Main population groups are Bemba 3.3 million (33.6%), Nyanja 1.8 million (18.2%), Tonga 1.7 million (16.8%), North-Western peoples 1 million (10.3%), Lozi (Barotse) 770,000 (7.8%), Mambwe 580,000 (5.9%), Tumbuka 500,000 (5.1%), Lamba 165,000 (2%), Asians 11,900 and Europeans 6,200. (Data: 2000 census) The rating of the safeguards has been scored as level 2 as the project will be implemented in an area that has not yet been selected, and will directly impact the country, at national level.
7.2	activities located on lands and territories claimed by indigenous peoples?		The Technical assistance will be implemented in a specific (unknown at this stage) location and will have direct impact at national level. The Safeguard has been rated as risk level 2.
7.3	impacts to the human rights of indigenous peoples or to the lands, territories and resources claimed by them?		No, the project is a pre-feasibility study which will not have impacts on human rights of indigenous peoples or to the lands.
7.4	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?		No, the project will focus on existing cultivations.
7.5	adverse effects on the development priorities, decision making mechanisms, and forms of self-government of indigenous peoples as defined by them?		No.
7.6	risks to the traditional livelihoods, physical and cultural survival of indigenous peoples?		No.
7.7	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?		No.
Safeguard Standard 8: Labor and working conditions			
8.1	Will the proposed project involve hiring or contracting project staff?		Yes. The implementer will be a network member selected through the bidding process under UNGM and will be mandated to respect the UN code of conduct rules and will meet all the requisites.
<i>If the answer to 8.1 is yes, would the project potentially involve or lead to:</i>			



8.2	working conditions that do not meet national labor laws or international commitments (e.g., ILO conventions)?		No.
8.3	the use of forced labor and child labor?		No.
8.4	occupational health and safety risks (including violence and harassment)?		No.
8.5	the increase of local or regional unemployment?		No.
8.6	suppliers of goods and services who may have high risk of significant safety issues related to their own workers?		No.
8.7	unequal working opportunities and conditions for women and men		No.