

Monitoring & Evaluation (M&E) Plan and Impact Statement

Provision of technical assistance for aquifer mapping technologies for Zambia

Objective of the M&E Plan and Impact Statement:

- The M&E Plan and Impact Statement must be designed based on the Technical Assistance Response Plan and must enable the Implementer to complete the Closure Report at the end of the assistance.

Process for filling in the template:

- The Implementer must identify relevant quantitative and qualitative indicators as specified in the Closure Report. A sub-set of indicators to monitor and assess must be chosen among these.
 - The Implementer may also identify other specific, measurable, achievable, relevant, and time-bound indicators suitable to monitor Activities, Outputs and anticipated Outcomes from the technical assistance and add to the M&E Plan and Impact Statement.
 - During implementation of the TA or FTA, the Implementer must collect all relevant data as described in the Monitoring & Evaluation Plan. Aggregated data on selected indicators as well as an updated version of the Impact Statement will be presented in the Closure Report at the end of the assistance.
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Basic Information	
Title of response plan	Provision of technical assistance for aquifer mapping technologies for Zambia.
Technical assistance reference number	2021000041
Country/ countries	Zambia
NDE focal point and organisation	Organisation: Ministry of Technology and Science Name: Mr. Ben Makayi Position: Senior Science and Technology Officer Phone: +260 977 344 993 Emails: ben.makayi@mohe.gov.zm; benmakayi2004@gmail.com Address: Maxwell House, Los Angeles Boulevard, P. O. Box 50464 Lusaka, Zambia
Sector(s) addressed	Water
Technologies supported	Aquifer Mapping

Implementation period and total duration	September 2022 – November 2023 (15 months)
Total budget for implementation	224,990 USD
Designer of the response plan	<p>CTCN</p> <p>Organisation: Ministry of Technology and Science Name: Mr. Ben Makayi Position: Senior Science and Technology Officer Phone: +260 977 344 993 Emails: ben.makayi@mohe.gov.zm; benmakayi2004@gmail.com Address: Maxwell House, Los Angeles Boulevard, P. O. Box 50464 Lusaka, Zambia</p> <p>Organisation: Ministry of Water Development and Sanitation Name: Mrs. Flora Sikamundenga Simumba Position: Director, Department of Water Resources Development Phone: +260 978 616 630 Email: flosika@yahoo.com Address: Mukuba Pension House P.O. Box 50288 Lusaka, Zambia</p>
Implementer of response plan	OneWorld Sustainable Investments

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
Output 1: Preliminary assessment of the information available and selection of a specific area in Zambia to implement the Technical Assistance (TA)	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of preliminary assessment report in Month 2	Preliminary assessment report
Activity 1.1: Define a list of criteria that will be used to select the area of implementation	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	1	Submission of list of criteria for validation in Month 1	List of criteria

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
	b) Number of tools and technical documents strengthened, revised or developed			
Activity 1.2: Desk analysis of existing surface and groundwater mapping in Zambia	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	2	Submission of report section on of existing surface and groundwater mapping in Month 2	Report section on existing surface and groundwater mapping Report section on potential areas for implementation of the TA
Activity 1.3: Organize a meeting to select a specific area in Zambia to implement the Technical Assistance	Number of participants in events organized by proponents and implementing partners a) Number of men b) Number of women	7 (4 men, 3 women)	Count of signed attendance at meeting to select implementation area in Month 2	From attendance register of meeting, as per list of key personnel
Output 2: Water balance studies of the selected area at macro level	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of water balance study report in Month 6	Water balance study report
Activity 2.1: Conduct an inception meeting	Number of participants in events organized by proponents and implementing partners a) Number of men	7 (4 men, 3 women)	Count of signed attendance at inception meeting In Month 2	From attendance register of inception meeting

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
	b) Number of women			
Activity 2.2: Identify the data that needs to be upgraded and generated in order to undertake the water balance / water accounting studies in the selected area.	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of data needs brief in Month 3	Data needs brief
Activity 2.3: Production of 3-D maps of groundwater	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of groundwater map in Month 4	Groundwater map
Activity 2.4: Definition of Water Balances of the Specified Area	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of technical brief on water balances in Month 5	Technical brief on water balances
Activity 2.5: Define a manual describing the methodology used for the calculation of the water balance /accounting and	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	1	Submission of manual on water balance calculation methodology in Month 6	Manual on water balance calculation methodology

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
Strategy for Aquifer mapping and production of an aquifer map.	b) Number of tools and technical documents strengthened, revised or developed			
Activity 2.6: Training sessions to explain methodologies. All data should already be available from the technical component of the work. Government officers only	Number of participants in trainings organized by proponents and implementing partners a) Number of men b) Number of women	25 (12 women, 13 men)	Count of signed attendance at training session in Month 6	Attendance register of training session
Output 3: Identify water saving technologies in different sectors and impact on ground water balance using modelling studies of the specific area	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of report on identified water saving technologies in Month 9	Report on identified water saving technologies
Activity 3.1: Organize a stakeholder consultation with key sectors of activity for the selected area	Number of participants in events organized by proponents and implementing partners a) Number of men b) Number of women	30 (15 women, 15 men)	Count of signed attendance at stakeholder consultation in Month 7	From attendance register of stakeholder consultation
Activity 3.2: Identify water saving technologies	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents	1	Submission of report on identified water saving technologies in Month 8	Report on identified water saving technologies

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(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
	strengthened, revised or developed			
Activity 3.3: Use modelling studies to analyse the impact of the selected technologies on the surface and ground water level of the selected area.	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of output report with results of modelling studies in Month 9	Output report with results of modelling studies
Activity 3.4: Organize a 3-day workshop to present the selected technologies	Number of participants in events organized by proponents and implementing partners a) Number of men b) Number of women	Day 1: 15 (50% women, 50% men) Day 2: 15 (50% women, 50% men) Day 3: 20 (50% women, 50% men)	Count of signed attendance at selected technology presentation in Month 9	From Attendance register of selected technology presentation
Output 4: Define a water management plan for both surface and groundwater to improve resilience of Zambia in time of drought	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of water management plan in Month 11	Water management plan
Activity 4.1: Define a water management plan for both surface and groundwater to improve resilience of Zambia in time of drought	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents	1	Submission of draft water management plan in Month 10	Draft water management plan

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
	strengthened, revised or developed			
Activity 4.2: Circulate first draft of the water management Plan and collect official feedback	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of collated feedback document in Month 10	Collated feedback document
Activity 4.3: Conduct an official review workshop with the stakeholders	Number of participants in events organized by proponents and implementing partners a) Number of men b) Number of women	20 (50% women, 50% men)	Count of signed attendance at review workshop in Month 10	From attendance register of review workshop
Activity 4.4: Incorporate comments and develop second draft of the water management plan	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of second draft water management plan in Month 11	Second draft water management plan
Activity 4.5: Circulate second draft and collect official	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents	1	Submission of collated feedback document in Month 11	Collated feedback document

(A) Outputs and Activities as described in the Response Plan	(B) Indicator	(C) Expected results	(D) Method and frequency for data collection	(F) Comments
	strengthened, revised or developed			
Activity 4.6: Incorporate comments and develop final draft of the water management policy	Total number of deliverables produced during the assistance (excluding mission, progress and internal reports) b) Number of tools and technical documents strengthened, revised or developed	1	Submission of final water management plan in Month 11	Final water management plan
Core indicator 2: Anticipated increased economic, health, well-being, infrastructure and built environment, and ecosystems resilience to climate change impacts as a result of technical assistance	Economic: Anticipated increased economic resilience (e.g. less reliance on vulnerable economic sectors or diversification of livelihood)	Delivery of a groundwater management plan to support climate change adaptation strategies in Zambia		

Note: The information in the table below will be used by the CTCN for public communication of the achieved and expected results of the Technical Assistance through the CTCN website www.ctc-n.org and other communication channels. See for example: https://www.ctc-n.org/sites/www.ctc-n.org/files/benin_a_ag_forestry.final.pdf

Impact Statement	
Challenge	Sustainable water resource management requires comprehensive understanding of the status of both surface and groundwater supplies. Aquifer mapping can inform management by providing an overview of the extent of groundwater resources and their locations. Effective aquifer mapping requires specialised technical skills, knowledge, and resources to be carried-out and translated into informative outputs for planning and decision-making.
CTCN assistance	To develop a robust groundwater management plan to support climate change adaptation strategies in Zambia. <ul style="list-style-type: none"> Identify target area and undertake water balance /water accounting studies at macro level Undertake aquifer mapping

	<ul style="list-style-type: none"> Identify water saving technologies for different sectors and model potential impact on groundwater balance Define a water management plan for both surface and groundwater to improve resilience of Zambia in time of drought
Anticipated impact	<ul style="list-style-type: none"> Comprehensive understanding of aquifer status in Zambia Support of long-term decision making and water resource management Improved water resource resilience and adaptation measures for greater overall water security Improved knowledge, skills, and coordination of stakeholders relevant to water resource management
Anticipated co-benefits from the TA	<ul style="list-style-type: none"> Improved wellbeing of people directly dependent on groundwater resources Sustainable socio-economic development through improved water resources management
Gender aspects of the TA	<p>Gender aspects will be mainstreamed through the project process with focus on how the results of the aquifer mapping inform effective water management. This will apply for all peoples but in particular women who are often responsible for household water resource acquisition and management.</p> <p>Gender-disaggregated tracking of participation in trainings and stakeholder workshops will allow for indicative gender representation among key stakeholders, and gender-focused participation in engagements and workshops will be prioritised. Local stakeholder engagement will include women's groups and ensure that women within communities in the target area are engaged with.</p>
Anticipated contribution to NDC	<p>The TA supports Prog. 1 of the adaptation measures in Zambia's NDCs "Adaptation of strategic productive systems (agriculture, wildlife, water)" by improving water management. Alignment is present with Prog. 2 "Adaptation of strategic infrastructure and health systems" through sustainable natural resource management. Prog. 3 "Enhanced capacity building, research, technology transfer and finance for adaptation" is also supported through water technologies development.</p>
The narrative story	<p>Water crisis is being experienced drought-prone parts of Zambia, with the situation exacerbated by the impacts of climate change. This has significant negative socio-economic impacts as water insecurity worsens. Aquifer mapping provides an opportunity to obtain a comprehensive assessment of groundwater in Zambia, informing suitable adaptation strategies for improved climate resilience and effective water resource management. This can improve water security, bettering wellbeing and supporting sustainable socio-economic development.</p>
Contribution to SDGs	<p>The TA contributes to SDG 13: Climate action by informing potential adaptation strategies for groundwater management. The TA also improves climate change resilience by informing sustainable water resource management. Contribution to SDG 6: Clean water and sanitation is significant as water management will be improved. SDG 3: Good health and well-being will also be supported as water security improvements will benefit vulnerable peoples.</p>