



ADAPTATION FUND

AFB/PPRC.29-30/11
15 June 2022

Adaptation Fund Board
Project and Programme Review Committee

**PROPOSAL FOR BOTSWANA, MALAWI, MOZAMBIQUE, SOUTH
AFRICA, ZAMBIA, ZIMBABWE**

Background

1. The strategic priorities, policies and guidelines of the Adaptation Fund (the Fund), as well as its Operational Policies and Guidelines include provisions for funding projects and programmes at the regional, i.e., transnational level. However, the Fund has thus far not funded such projects and programmes.

2. The Adaptation Fund Board (the Board), as well as its Project and Programme Review Committee (PPRC) and Ethics and Finance Committee (EFC) considered issues related to regional projects and programmes on a number of occasions between the Board's fourteenth and twenty-first meetings but the Board did not make decisions for the purpose of inviting proposals for such projects. Indeed, in its fourteenth meeting, the Board decided to:

- (c) Request the secretariat to send a letter to any accredited regional implementing entities informing them that they could present a country project/programme but not a regional project/programme until a decision had been taken by the Board, and that they would be provided with further information pursuant to that decision*

(Decision B.14/25 (c))

3. At its eighth meeting in March 2012, the PPRC came up with recommendations on certain definitions related to regional projects and programmes. However, as the subsequent seventeenth Board meeting took a different strategic approach to the overall question of regional projects and programmes, these PPRC recommendations were not included in a Board decision.

4. At its twenty-fourth meeting, the Board heard a presentation from the coordinator of the working group set up by decision B.17/20 and tasked with following up on the issue of regional projects and programmes. She circulated a recommendation prepared by the working group, for the consideration by the Board, and the Board decided:

- (a) To initiate steps to launch a pilot programme on regional projects and programmes, not to exceed US\$ 30 million;*
- (b) That the pilot programme on regional projects and programmes will be outside of the consideration of the 50 per cent cap on multilateral implementing entities (MIEs) and the country cap;*
- (c) That regional implementing entities (RIEs) and MIEs that partner with national implementing entities (NIEs) or other national institutions would be eligible for this pilot programme, and*

- (d) *To request the secretariat to prepare for the consideration of the Board, before the twenty-fifth meeting of the Board or intersessionally, under the guidance of the working group set up under decision B.17/20, a proposal for such a pilot programme based on consultations with contributors, MIEs, RIEs, the Adaptation Committee, the Climate Technology Centre and Network (CTCN), the Least Developed Countries Expert Group (LEG), and other relevant bodies, as appropriate, and in that proposal make a recommendation on possible options on approaches, procedures and priority areas for the implementation of the pilot programme.*

(Decision B.24/30)

5. The proposal requested under (d) of the decision above was prepared by the secretariat and submitted to the Board in its twenty-fifth meeting, and the Board decided to:

- (a) *Approve the pilot programme on regional projects and programmes, as contained in document AFB/B.25/6/Rev.2;*
- (b) *Set a cap of US\$ 30 million for the programme;*
- (c) *Request the secretariat to issue a call for regional project and programme proposals for consideration by the Board in its twenty-sixth meeting; and*
- (d) *Request the secretariat to continue discussions with the Climate Technology Center and Network (CTCN) towards operationalizing, during the implementation of the pilot programme on regional projects and programmes, the Synergy Option 2 on knowledge management proposed by CTCN and included in Annex III of the document AFB/B.25/6/Rev.2.*

(Decision B.25/28)

6. Based on the Board Decision B.25/28, the first call for regional project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on 5 May 2015.

7. At its twenty-sixth meeting the Board decided *to request the secretariat to inform the Multilateral Implementing Entities and Regional Implementing Entities that the call for proposals under the Pilot Programme for Regional Projects and Programmes is still open and to encourage them to submit proposals to the Board at its 27th meeting, bearing in mind the cap established by Decision B.25/26.*

(Decision B.26/3)

8. At its twenty-seventh meeting the Board decided to:

- (a) *Continue consideration of regional project and programme proposals under the pilot programme, while reminding the implementing entities that the amount set aside for the pilot programme is US\$ 30 million;*
- (b) *Request the secretariat to prepare for consideration by the Project and Programme Review Committee at its nineteenth meeting, a proposal for prioritization among regional project/programme proposals, including for awarding project formulation grants, and for establishment of a pipeline; and*
- (c) *Consider the matter of the pilot programme for regional projects and programmes at its twenty-eighth meeting.*

(Decision B.27/5)

9. The proposal requested in (b) above was presented to the nineteenth meeting of the PPRC as document AFB/PPRC.19/5. The Board subsequently decided:

- (a) *With regard to the pilot programme approved by decision B.25/28:*

- (i) *To prioritize the four projects and 10 project formulation grants as follows:*

- 1. *If the proposals recommended to be funded in a given meeting of the PPRC do not exceed the available slots under the pilot programme, all those proposals would be submitted to the Board for funding;*

- 2. *If the proposals recommended to be funded in a given meeting of the PPRC do exceed the available slots under the pilot programme, the proposals to be funded under the pilot programme would be prioritized so that the total number of projects and project formulation grants (PFGs) under the programme maximizes the total diversity of projects/PFGs. This would be done using a three-tier prioritization system: so that the proposals in relatively less funded sectors would be prioritized as the first level of prioritization. If there are more than one proposal in the same sector: the proposals in relatively less funded regions are prioritized as the second level of prioritization. If there are more than one proposal in the same region, the proposals submitted by relatively less represented implementing entity would be prioritized as the third level of prioritization;*

- (ii) *To request the secretariat to report on the progress and experiences of the pilot programme to the PPRC at its twenty-third meeting; and*

- (b) *With regard to financing regional proposals beyond the pilot programme referred to above:*

- (i) *To continue considering regional proposals for funding, within the two categories originally described in document AFB/B.25/6/Rev.2: ones requesting up to US\$ 14 million, and others requesting up to US\$ 5 million, subject to review of the regional programme;*
- (ii) *To establish two pipelines for technically cleared regional proposals: one for proposals up to US\$ 14 million and the other for proposals up to US\$ 5 million, and place any technically cleared regional proposals, in those pipelines, in the order described in decision B.17/19 (their date of recommendation by the PPRC, their submission date, their lower “net” cost); and*
- (iii) *To fund projects from the two pipelines, using funds available for the respective types of implementing entities, so that the maximum number of or maximum total funding for projects and project formulation grants to be approved each fiscal year will be outlined at the time of approving the annual work plan of the Board.*

(Decision B.28/1)

10. At the twenty-ninth meeting, having considered the comments and recommendation of the Project and Programme Review Committee, the Adaptation Fund Board (the Board) decided:

- (a) *To include in its work plan for fiscal year 2018 a program of work amounting to US\$ 30 million for the funding of regional project and programme proposals, as follows:*
 - (i) *Up to three proposals requesting up to US\$ 5 million for funding;*
 - (ii) *One proposal requesting up to US\$ 14 million of funding;*
 - (iii) *Up to five project formulation grant (PFG) requests, of up to US\$ 100,000 each, for preparing project and programme concepts or fully-developed project documents requesting up to US\$ 5 million of funding;*
 - (iv) *Up to five project formulation grant (PFG) requests, of up to US\$ 100,000 each, for preparing project and programme concepts or fully-developed project documents requesting up to US\$ 14 million of funding.*

(Decision B.29/4)

11. At its thirty-first meeting, having considered the comments and recommendation of the Project and Programme Review Committee, the Adaptation Fund Board (the Board) decided:

- (a) *To merge the two pipelines for technically cleared regional proposals established in decision B.28/1(b)(ii), so that starting in fiscal year 2019 the provisional amount of funding for regional proposals would be allocated without distinction between the two*

categories originally described in document AFB/B.25/6/Rev.2, and that the funding of regional proposals would be established on a 'first come, first served' basis; and

(b) To include in its work programme for fiscal year 2019 provision of an amount of US\$ 60 million for the funding of regional project and programme proposals, as follows:

- (i) Up to US\$ 59 million to be used for funding regional project and programme proposals in the two categories of regional projects and programmes: ones requesting up to US \$14 million, and others requesting up to US\$ 5 million; and*
- (ii) Up to US\$ 1 million for funding project formulation grant requests for preparing regional project and programme concepts or fully-developed project and programme documents.*

(Decision B.31/3)

12. According to the Board Decision B.12/10, a project or programme proposal needs to be received by the secretariat no less than nine weeks before a Board meeting, in order to be considered by the Board in that meeting.

13. The following concept project document titled "Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region" was submitted for Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe by the International Fund for Agricultural Development (IFAD), which is a Multilateral Implementing Entity of the Adaptation Fund.

14. This is the second submission of the regional project concept proposal using the two-step submission process.

15. It was first submitted in the thirty-seventh meeting and the Board decided:

- (a) To not endorse the concept note as supplemented by the clarifications provided by the International Fund for Agricultural Development (IFAD) in response to the request made by the technical review;*
- (b) To suggest that IFAD reformulate the proposal, taking into account the observations in the review sheet annexed to the notification of the Board's decision, as well as the following issues:*
 - (i) The proposal should outline the process and significance of the development of a "mutually agreed governance and cooperation framework" (objective 2), outlining key strategic steps towards the pursuit of an "agreed governance" of the resource beyond a solely technical focus;*

- (ii) The proponent should provide a clear documentation of the consultations held and provide evidence that international river basin organizations and national entities have been sufficiently consulted and expressed interest;*
 - (iii) The proposal should attend more comprehensively to managing the risk of the use of groundwater, addressing more specifically what it intends by “sustainable groundwater use”;*
 - (iv) The proposal should build on ongoing and previous cooperation with the partners mentioned, considering their experience, expertise and lessons learned;*
- (c) To request IFAD to transmit the observations under subparagraph (b) to the Governments of Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe.*

(Decision B.37/19)

9. The current submission was received by the secretariat in time to be considered in the intersessional period between the thirty-eighth and thirty-ninth Board meetings. The secretariat carried out a technical review of the project proposal, with the diary number AF00000265, and completed a review sheet.

10. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with IFAD, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

11. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted or with track changes.



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regional Project Concept

Countries/Region: Botswana, Malawi, Mozambique, South Africa, Zambia, Zimbabwe
Project Title: Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region
Thematic Focal Area: Transboundary water management
Implementing Entity: International Fund for Agricultural Development (IFAD)
Executing Entities: SADC Groundwater Management Institute
AF Project ID: AF00000265
IE Project ID: 2000004011
Reviewer and contact person: Dirk Lamberts
IE Contact Person: Paxina Chileshe

Requested Financing from Adaptation Fund (US Dollars): 13,932,000
Co-reviewer(s): Imèn Meliane

Technical Summary

The project “Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region” aims to achieve climate resilient management of increasingly variable and scarce water resources based on a solid understanding of the hydrogeological and socio-economic settings of the transboundary groundwater resources and building climate resilient livelihoods in Southern Africa by promoting the sustainable use of unexplored transboundary groundwater resources.

The project objective will be achieved through the four components below:

Component 1: Transboundary diagnostic analyses for groundwater resources and joint strategic action plans (USD 1,050,000);

Component 2: Implementing the Strategic Action Plans (USD 5,124,500);

Component 3: Information systems (USD 400,000);

Component 4: Infrastructure interventions in the Tuli Karoo and Ramaotswa Transboundary Aquifers (USD 5,680,000).

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| | <p>Requested financing overview: Project/Programme Execution Cost: USD 645,500 Total Project/Programme Cost: USD 12,900,000 Implementing Fee: USD 1,032,000 Financing Requested: USD 13,932,000</p> <p>The proposal does not include a request for a project formulation grant or project formulation assistance grant.</p> <p>The initial technical review raised several issues, such as compliance with ESP and GP, limited consultations, uncertain sustainability and the risk of maladaptation associated with development of groundwater extraction, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CARs) raised in the review.</p> <p>The final technical review finds that the proposal has not addressed most of the CR and CAR requests. Namely, the risk of maladaptation, compliance with AF policies, and limited consultations remain unaddressed.</p> |
| Date | 9 June 2022 |

| Review Criteria | Questions | Comments - Initial Technical Review | Comments - Final Technical Review |
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| Country Eligibility | 1. Are all of the participating countries party to the Kyoto Protocol? | Yes. | - |
| | 2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change? | Yes. Changes to the amount, intensity and predictability of rainfall in much of southern Africa due to climate change causes a burden on smallholder farmers to secure their food and agricultural production. | - |
| Project Eligibility | 1. Have the designated government authorities for the Adaptation Fund from each of the participating countries | Yes. As per the endorsement letters dated 1st April 2022 (Botswana), 27th January 2022 (Malawi), 14th February 2022 (Mozambique), 7th April 2022 (South Africa), 24th | - |

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| | endorsed the project/programme? | January 2022 (Zambia) and 7th February 2022 (Zimbabwe) | |
| | 2. Does the length of the proposal amount to no more than fifty (50) pages for the project/programme concept, including its annexes? | <p>No. The proposal, including its annexes, amounts to 54 pages.</p> <p>CAR 1: Please adjust the proposal to be within the page limit.</p> | CAR 1: Not addressed. |
| | 3. Does the regional project / programme support concrete adaptation actions to assist the participating countries in addressing the adverse effects of climate change and build in climate resilience, and do so providing added value through the regional approach, compared to implementing similar activities in each country individually? | <p>Yes. A regional approach for the management of transboundary aquifers is required and envisaged by the project, which focuses on 4 such aquifers shared by various countries. However, there are several uncertainties.</p> <p>The regional approach selected hinges on the River Basin Organizations (RBOs) involved. The mandates of the RBOs involved regarding groundwater have been shown by references to their founding agreements. Globally, many RBOs are known to be dysfunctional or lacking the political support to achieve their intended objectives.</p> <p>CR 1: Please clarify that the two RBOs directly involved in the project, i.e. LIMCOM and ZAMCOM, are functioning (politically and technically) at an adequate level to support and sustain the project activities.</p> | <p>CR 1: Not cleared. The proposal now includes a statement that both RBOs involved are politically and technically functioning as envisaged and at an adequate level to support and sustain the project activities, but that information is not substantiated.</p> <p>CR 2: Not cleared. The function of the MCCMs is somewhat clarified, but their justification and relation to the Groundwater Committees remains unclear.</p> <p>CR 3: Not addressed.</p> <p>CAR 2: Not cleared. The stated impact goal now includes “climate resilient management of increasingly variable and scarce water resources”, while the project still exclusively focuses on transboundary groundwater.</p> |

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| | | <p>The role of the 'Multi-Country Cooperation Mechanisms' (MCCMs) is unclear. While the proposal mentions that they are governance structures within the RBOs, it also states that they "allow the stakeholders in the project areas to adopt a suitable governance and cooperation framework for the sustainable use and management of the groundwater resources".</p> <p>CR 2: Please clarify the nature, role, and justification of the MCCMs.</p> <p>The proposal should outline strategic steps towards the pursuit of an 'agreed governance' of the resource - beyond a solely technical focus, to the extent that this is not already part of the RBO agreements. It is unclear from the proposal what financial and political commitments on the strategic action plans (SAPs) will be required to be effective.</p> <p>CR 3: Please clarify in the proposal, what financial and political commitments on SAPs will be required from e.g., ministerial level to be effective and the strategies intended to seek / sustain that support.</p> | |
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| | | <p>The regional project contributes to transboundary water management.</p> <p>There is a disjunction between the stated impact goal and objectives (p. 4-5) and the description of the project components and financing.</p> <p>CAR 2: Please correct the mismatch between the impact goal and the objectives stated on p. 4-5 and the project components description.</p> | |
| | <p>4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund?</p> | <p>Unclear.</p> <p>The project accumulates implementation and safeguards risks and uncertainties through its structure, envisaging the development of first Transboundary Diagnostic Analyses TDAs, then SAPs and finally implementing agreed activities. Such risks are the smallest for the Ramotswa transboundary aquifer that is the most advanced in the development of regional transboundary aquifer management.</p> <p>It is suggested that the IE considers redesigning the project in phases or assumes a programme approach, whereby in an initial stage the SAPs and institutional capacity are developed, and a subsequent stage could focus on implementation that</p> | <p>CR 4: Not addressed. The added proposal document does not show that the envisaged monitoring will be adequate and that the management instruments at the different levels (farm to river basin) will be effective.</p> <p>CR 5: Not addressed.</p> <p>CR 6: Not addressed.</p> |

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| | | <p>could be informed by a pilot in the current proposal for the Ramotswa transboundary aquifer (TBA).</p> <p>Groundwater monitoring, both in terms of quality and quantity, is a critical element in the proposed development of groundwater resource use. When implemented, the project will lay the foundation for significant increases in groundwater extraction by creating a substantial (additional) demand for water which seems can only be met by groundwater extraction. This carries a high risk of maladaptation. Groundwater extraction is notoriously difficult to monitor at aquifer level. Currently, the proposal has provisions for USD 400,000 for 48 boreholes in the four TBAs, including monitoring equipment and water quality and quantity monitoring recording. It is unclear if or how that has the capacity to provide the monitoring that will be required to enable sustainable management of groundwater extraction. The project proposal includes a considerable allocation of funds to implement the SAPs.</p> <p>CR 4: Please clarify how the proposed monitoring elements of the project will be adequate for effective management of increased</p> | |
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| | | <p>groundwater extraction, and how the risk of maladaptation is avoided.</p> <p>Related to this, in the sequence of improving understanding of the TBAs, the development of SAPs and investing in the implementation of the SAP, the development of effective and operational monitoring capacities and activities is critical. We note that for the Ramotswa TBA, for which the SAP is said to be finalized, the proposal is ready to invest in SAP activities, and, apart from minor investment in capacity building, no further provisions are included for monitoring.</p> <p>CR 5: Please clarify the monitoring arrangements for the Ramotswa TBA, and how these are adequate for sustainable management and development of the groundwater resource.</p> <p>Notably lacking from the proposal is integration with Integrated Water Resources Management (IWRM), which is an essential integrating element for sustainability. Without accompanying efficiency measures for water usage—beyond just those for groundwater use – the additional availability of groundwater risks depletion of further resources, undermining resilience. Sub-</p> | |
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| | | <p>component 2.3 includes some elements of a broader approach but in a tentative manner that needs to be developed into an effective IWRM element. With key implementation partners being the RBOs, IWRM should already be part and parcel of their activities and capabilities, so integration would be straightforward.</p> <p>CR 6: Please clarify how the project will be an integrated part of water resources management in the TBA areas.</p> | |
| | 5. Is the project / programme cost-effective and does the regional approach support cost-effectiveness? | <p>Unclear. The proposal contains no analysis that would allow an appreciation of its cost-effectiveness or that of the regional approach. The relevant section is limited to some operational cost-saving arguments. The proposal does not include a detailed budget.</p> <p>CAR 3: Please provide a demonstration of the project cost-effectiveness from a sustainability point of view.</p> | CAR 3: Not Cleared. The additional information does not demonstrate project cost-effectiveness. |
| | 6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development | Partially. The proposed project is broadly consistent with SADC plans and strategies. The proposal includes a summary for each participating country on the | CR 7: Not addressed. |

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| | plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments? If applicable, it is also possible to refer to regional plans and strategies where they exist. | alignment with national climate strategies and plans but does not sufficiently address alignment with national sustainable development strategies and plans or poverty reduction strategies. CR 7: Please clarify alignment of the project with national sustainable development and poverty reduction strategies and plans. | |
| | 7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund? | Unclear. Compliance with relevant national technical standards is limited to a statement of intent. The ESP requires compliance with all relevant and applicable national technical standards, and not just those related to environmental safeguards. CR 8: Please clarify which the relevant national technical standards are and how the project will ensure compliance. | CR 8: Not addressed. |
| | 8. Is there duplication of project / programme with other funding sources? | Possibly. The proposal lists a number of relevant potentially overlapping projects and programmes. Key partners in the region have been listed and some opportunities for collaboration have been identified. A fully-developed stage, the proposal will need to provide comprehensive information on actual overlap with | - |

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| | | other funding sources, on linkages and synergies, highlighting complementarity and lessons learning from earlier initiatives. | |
| | 9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons? | <p>Yes. The learning from other experiences and the dissemination of own learning under the project are described. Nevertheless, it is not clear that the learning and knowledge management elements of the project will have a clear and specific focus on other RBOs in SADC to which project results might be extended.</p> <p>CR 9: Please clarify how the project will generate knowledge directly available and relevant to all other RBOs and TBAs in the region.</p> | CR 9: Not cleared. The role of SADC-GMI as key operator to disseminate knowledge to other RBOs and TBAs in the region is clarified. However, information on the generation of such knowledge remains unclear. |
| | 10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund? | <p>Unclear. The proposal does not contain sufficient information on consultations that were held during the formulation of the project. There is no evidence that RBOs involved or a range of national entities have been consulted and are in support of the effort beyond the AF designated authority endorsement. A revised proposal should annex a clear list of consultations held (when, with whom, with what outcome) and provide evidence that</p> | CAR 4: Not cleared. From the additional information, it is clear that the consultations overall were very limited, both in terms of the stakeholders consulted and of time spent. It is unclear how these consultations have informed project design. Civil society and NGOs appear to have been almost absent from the consultations. |

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| | | <p>RBOs and national entities have been sufficiently consulted and expressed interest. In doing so, it should clarify what level of endorsement the Ramotswa aquifer SAP has had at this stage.</p> <p>CAR 4: Please demonstrate in the proposal which consultations have already been held, how they have informed the project design, and how these constitute an effective and comprehensive consultation process as part of the project design, involving all key stakeholders.</p> | |
| | 11. Is the requested financing justified on the basis of full cost of adaptation reasoning? | <p>Unclear. Given the high risk of maladaptation, it's not clear that the project activities are relevant in addressing adaptation objectives and, taken solely, without additional funding from other donors, they will help achieve these objectives.</p> <p>Please refer to CR 4, 5 and 6 and CAR 3 above.</p> | Please refer to CR 4, 5 and 6 and CAR 3 above. |
| | 12. Is the project / program aligned with AF's results framework? | Yes. | - |
| | 13. Has the sustainability of the project/programme outcomes been taken into account when designing the project? | <p>Unclear.</p> <p>As mentioned under question 4 above, sustainable groundwater extraction critically depends on established and performant monitoring of both extraction and</p> | <p>Please see CR 1, 4 and 5, and CAR 3.</p> <p>CR 10: Not addressed. The response provided demonstrates the early stages of TBA</p> |

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| | | <p>the condition of the aquifer. The management arrangements at TBA level need to be sufficiently solid, and enforceable. If not, the proposed infrastructure investments could be used in unsustainable extraction and depletion of groundwater resources, constituting maladaptation. The required resolution of the monitoring network is not demonstrated, and given the size and transboundary nature of the resources, it is unlikely that the envisaged monitoring and subsequent management efforts will be adequate. Given their role in this, the RBOs will play a critical role and sustainability strongly depends on their performance.</p> <p>Please see CR 1, 4 and 5, and CAR 3.</p> <p>It is unclear from the proposal how project outcomes will lead to scale up.</p> <p>CR 10: Please clarify how project activities will lead to scale up.</p> | <p>management in SADC, illustrating the need for upscaling but does not address the question of how that will be achieved.</p> |
| | 14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the | <p>No.</p> <p>Over two thirds of the budget for project activities is allocated to Unidentified Sub-Projects (USPs). While there is an inherent justification in the theory of change</p> | <p>CAR 5: Not addressed.</p> <p>CAR 6: Not cleared. An ESP categorization has been added but it lacks proper substantiation.</p> |

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| | <p>Environmental and Social Policy and Gender Policy of the Fund?</p> | <p>for the use of USPs, this needs to be made explicit and the implications need to be reflected in the ESMP. Other than implementing activities of the (yet to be formulated) SAPs, there are no restrictions on the choice of USPs, leaving them entirely unidentified in location, in nature and in inherent environmental and social risks. Those are the kind of USPs with the greatest inherent risk of not complying with the AF ESP and GP. Being a regional project with varying partners involved further compounds the challenge of complying with AF's ESP and GP. It seems that the executing entity will need to perform the role of the IE in supervising and monitoring AF safeguards and GP compliance by the numerous executing partners but its capacity to do so is not demonstrated. The claim that the IE's environmental and social assessment procedures would be fully aligned with the AF is irrelevant and only compliance with AF policies needs to be demonstrated in the proposal. The overview of environmental and social risks presented in II.K includes those related to the USPs and is mostly speculative.</p> | <p>CAR 7: Not addressed.</p> |
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| | | <p>CAR 5: Please identify environmental and social risks, in line with OPG Annex 3, 4, 5 and Decision B.32-33/17.</p> <p>The proposal does not state the category that the risk identification process has assigned to the project.</p> <p>CAR 6: Please categorize the project in terms of environmental and social risk, in line with the ESP.</p> <p>Compliance with the AF Gender Policy is limited to a few statements of intent. The role of gender in achieving the stated objectives and the opportunities for women's empowerment are largely missing. There is no reference to a gender assessment that has or will inform the project formulation.</p> <p>CAR 7: Please show that and how the project will comply with the AF GP.</p> | |
| | 15. Does the project promote new and innovative solutions to climate change adaptation, such as new approaches, technologies and mechanisms? | <p>Yes.</p> <p>The involvement of RBOs in management and exploitation of (transboundary) aquifers for climate adaptation resilience is innovative, even if it is not original. The focus is on the technical and infrastructure angle and lacks in additional thoughts on incentivizing</p> | - |

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| | | sustainable uses via policy measures or innovative finance. | |
| Resource Availability | 1. Is the requested project / programme funding within the funding windows of the regional projects/programmes? | Yes. | - |
| | 2. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 20 per cent of the total project/programme budget? | Yes. The administrative costs are below 20% of the total budget. | - |
| Eligibility of IE | 1. Is the project/programme submitted through an eligible Multilateral or Regional Implementing Entity that has been accredited by the Board? | Yes. | - |
| Implementation Arrangements | 1. Is there adequate arrangement for project / programme management at the regional and national level, including coordination arrangements within countries and among them? Has the potential to partner with national institutions, and when possible, national implementing entities (NIEs), been considered, and included in the management arrangements? | n/a at concept stage | |
| | 2. Are there measures for financial and project/programme risk management? | n/a at concept stage | |
| | 3. Are there measures in place for the management of for | n/a at concept stage | |

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| | environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details. | | |
| | 4. Is a budget on the Implementing Entity Management Fee use included? | n/a at concept stage | |
| | 5. Is an explanation and a breakdown of the execution costs included? | n/a at concept stage | |
| | 6. Is a detailed budget including budget notes included? | n/a at concept stage | |
| | 7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund? | n/a at concept stage | |
| | 8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function? | n/a at concept stage | |
| | 9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework? | n/a at concept stage | |

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| | 10. Is a disbursement schedule with time-bound milestones included? | n/a at concept stage | |
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ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regional Project Concept

Countries/Region: **Botswana, Malawi, Mozambique, South Africa, Zambia, Zimbabwe**
Project Title: **Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region**
Thematic Focal Area: **Transboundary water management**
Implementing Entity: **International Fund for Agricultural Development (IFAD)**
Executing Entities: **SADC Groundwater Management Institute**
AF Project ID: **AF00000265**
IE Project ID: **2000004011** Requested Financing from Adaptation Fund (US Dollars): **13,932,000**
Reviewer and contact person: **Dirk Lamberts** Co-reviewer(s): **Imèn Meliane**
IE Contact Person: **Paxina Chileshe**

Technical Summary

The project "Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region" aims to provide concrete adaptation measures to increasingly variable and scarce water resources by promoting the sustainable use of unexplored transboundary groundwater resources to increase water availability, agricultural productivity, food security, and build climate resilient livelihoods in southern Africa.

The project objective will be achieved through the four components below:

Component 1: Transboundary diagnostic analyses for groundwater resources and joint strategic action plans (USD 1,050,000);

Component 2: Implementing the Strategic Action Plans (USD 5,124,500);

Component 3: Information systems (USD 400,000);

Component 4: Infrastructure interventions in the Tuli Karoo and Ramaotswa Transboundary Aquifers (USD 5,680,000).

Requested financing overview:

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| | <p>Project/Programme Execution Cost: USD 645,500 Total Project/Programme Cost: USD 12,900,000 Implementing Fee: USD 1,032,000 Financing Requested: USD 13,932,000</p> <p>The proposal does not include a request for a project formulation grant or project formulation assistance grant.</p> <p>The initial technical review raises several issues, such as compliance with ESP and GP, limited consultations, uncertain sustainability and the risk of maladaptation associated with development of groundwater extraction, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Request (CARs) raised in the review.</p> |
| Date | 17 May 2022 |

| Review Criteria | Questions | Comments | |
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| Country Eligibility | 1. Are all of the participating countries party to the Kyoto Protocol? | Yes. | |
| | 2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change? | Yes. Changes to the amount, intensity and predictability of rainfall in much of southern Africa due to climate change causes a burden on smallholder farmers to secure their food and agricultural production. | |
| Project Eligibility | 1. Have the designated government authorities for the Adaptation Fund from each of the participating countries endorsed the project/programme? | Yes. As per the endorsement letters dated 1st April 2022 (Botswana), 27th January 2022 (Malawi), 14th February 2022 (Mozambique), 7th April 2022 (South Africa), 24th January 2022 (Zambia) and 7th February 2022 (Zimbabwe) | |
| | 2. Does the length of the proposal amount to no more than fifty (50) pages for the project/programme concept, including its annexes? | No. The proposal, including its annexes, amounts to 54 pages. CAR 1: Please adjust the proposal to be within the page limit. | The proposal length has been adjusted to below 50 pages. |

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| | <p>3. Does the regional project / programme support concrete adaptation actions to assist the participating countries in addressing the adverse effects of climate change and build in climate resilience, and do so providing added value through the regional approach, compared to implementing similar activities in each country individually?</p> | <p>Yes. A regional approach for the management of transboundary aquifers is required and envisaged by the project, which focuses on 4 such aquifers shared by various countries. However, there are several uncertainties.</p> <p>The regional approach selected hinges on the River Basin Organizations (RBOs) involved. The mandates of the RBOs involved regarding groundwater have been shown by references to their founding agreements. Globally, many RBOs are known to be dysfunctional or lacking the political support to achieve their intended objectives.</p> <p>CR 1: Please clarify that the two RBOs directly involved in the project, i.e. LIMCOM and ZAMCOM, are functioning (politically and technically) at an adequate level to support and sustain the project activities.</p> <p>The role of the 'Multi-Country Cooperation Mechanisms' (MCCMs) is unclear. While the proposal mentions that they are governance structures within the RBOs, it also states that they "allow the stakeholders in the project areas to adopt a suitable</p> | <p>CR 1: Para 33 has been updated to illustrate the functionality of LIMCOM and ZAMCOM and their ability to support and sustain the activities.</p> |
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| | | <p>governance and cooperation framework for the sustainable use and management of the groundwater resources”.</p> <p>CR 2: Please clarify the nature, role, and justification of the MCCMs.</p> <p>The proposal should outline strategic steps towards the pursuit of an ‘agreed governance’ of the resource - beyond a solely technical focus, to the extent that this is not already part of the RBO agreements. It is unclear from the proposal what financial and political commitments on the strategic action plans (SAPs) will be required to be effective.</p> <p>CR 3: Please clarify in the proposal, what financial and political commitments on SAPs will be required from e.g., ministerial level to be effective and the strategies intended to seek / sustain that support.</p> <p>The regional project contributes to transboundary water management.</p> <p>There is a disjunction between the stated impact goal and objectives (p. 4-5) and the description of the project components and financing.</p> | <p>CR 2: Para 18 revised to clarify the role of MCCM in providing specific TBA level guidance to the GMCs.</p> <p>CR3: Refer to Para 19, which describes the level of political commitment from the respective ministerial levels. There it is stated: “It is through the Groundwater Committees that the JSAP will be endorsed by the RBOs through the council of Ministers or the equivalent bodies.” The financial commitments of the RBOs are also approved by the Council of Ministers.</p> |
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| | | CAR 2: Please correct the mismatch between the impact goal and the objectives stated on p. 4-5 and the project components description. | CAR2: The impact goal and objectives have been revised to align better with the project components and description. |
| | 4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy of the Fund? | <p>Unclear. The project accumulates implementation and safeguards risks and uncertainties through its structure, envisaging the development of first Transboundary Diagnostic Analyses TDAs, then SAPs and finally implementing agreed activities. Such risks are the smallest for the Ramotswa transboundary aquifer that is the most advanced in the development of regional transboundary aquifer management.</p> <p>It is suggested that the IE considers redesigning the project in phases or assumes a programme approach, whereby in an initial stage the SAPs and institutional capacity are developed, and a subsequent stage could focus on implementation that could be informed by a pilot in the current proposal for the Ramotswa transboundary aquifer (TBA).</p> <p>Groundwater monitoring, both in terms of quality and quantity, is a critical element in the proposed</p> | <p>The development of TDAs and JSAPs mostly involves undertaking research and engaging stakeholders in the process. SADC-GMI has a Gender and Social Inclusion (GESI) mainstreaming strategy including IFAD policy on gender quality and women's empowerment strategy which provides sufficient safeguards for exclusion. The same tool is also used at implementation level. The SADC-GMI GESI Mainstreaming strategy is also based on the AF expectations on Environmental and Social safeguards. Para 9 has been updated accordingly.</p> |

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| | | <p>development of groundwater resource use. When implemented, the project will lay the foundation for significant increases in groundwater extraction by creating a substantial (additional) demand for water which seems can only be met by groundwater extraction. This carries a high risk of maladaptation. Groundwater extraction is notoriously difficult to monitor at aquifer level. Currently, the proposal has provisions for USD 400,000 for 48 boreholes in the four TBAs, including monitoring equipment and water quality and quantity monitoring recording. It is unclear if or how that has the capacity to provide the monitoring that will be required to enable sustainable management of groundwater extraction. The project proposal includes a considerable allocation of funds to implement the SAPs.</p> <p>CR 4: Please clarify how the proposed monitoring elements of the project will be adequate for effective management of increased groundwater extraction, and how the risk of maladaptation is avoided.</p> <p>Related to this, in the sequence of improving understanding of the TBAs, the development of SAPs</p> | <p>CR4: Para 5 shows the Aquifer development phases for SADC-GMI which shows that the investment decisions are initially based on baseline data from Primary Monitoring Systems (Fig 2). The resultant investments trigger the development of further Secondary monitoring systems, which provide safeguards for 'maladaptation'. Text in Para 5 has been updated to add clarity.</p> |
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| | | <p>and investing in the implementation of the SAP, the development of effective and operational monitoring capacities and activities is critical. We note that for the Ramotswa TBA, for which the SAP is said to be finalized, the proposal is ready to invest in SAP activities, and, apart from minor investment in capacity building, no further provisions are included for monitoring.</p> <p>CR 5: Please clarify the monitoring arrangements for the Ramotswa TBA, and how these are adequate for sustainable management and development of the groundwater resource.</p> <p>Notably lacking from the proposal is integration with Integrated Water Resources Management (IWRM), which is an essential integrating element for sustainability. Without accompanying efficiency measures for water usage— beyond just those for groundwater use – the additional availability of groundwater risks depletion of further resources, undermining resilience. Sub-component 2.3 includes some elements of a broader approach but in a tentative manner that needs to be developed into an effective IWRM element. With key implementation partners being the</p> | <p>CR5. Component 3 of the project proposes the installation of 48 monitoring boreholes (i.e. 8 per country). There are six countries and Ramotswa is shared between RSA and Botswana. As such provision has been made already for a monitoring network for Ramotswa. What is also stated in the table Programme Components & Financing is that all monitoring networks will be linked to existing boreholes. As such, it will not be necessary to drill new boreholes throughout. This approach will enable the project to achieve adequacy in monitoring the aquifers. The intention is to implement strategic monitoring, targeting known vulnerabilities.</p> |
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| | | <p>RBOs, IWRM should already be part and parcel of their activities and capabilities, so integration would be straightforward.</p> <p>CR 6: Please clarify how the project will be an integrated part of water resources management in the TBA areas.</p> | <p>CR6: The 2 RBOs, i.e. LIMCOM and ZAMCOM have IWRM plans and the work proposed under this project aligns with the priorities of the respective IWRM plans. Paras 19 and 20 have been updated accordingly.</p> |
| | <p>5. Is the project / programme cost-effective and does the regional approach support cost-effectiveness?</p> | <p>Unclear. The proposal contains no analysis that would allow an appreciation of its cost-effectiveness or that of the regional approach. The relevant section is limited to some operational cost-saving arguments. The proposal does not include a detailed budget.</p> <p>CAR 3: Please provide a demonstration of the project cost-effectiveness from a sustainability point of view.</p> | <p>CAR 3: Para 131 has been updated to indicate that the cost estimates included in the proposal are based on previous costs as experienced by the IE implementing similar TDA, JSAP and pilot infrastructure projects in the region. Para 66 to 68 also show that the project approach derives from tried and tested cost effective regional approaches</p> |

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| | <p>6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments? If applicable, it is also possible to refer to regional plans and strategies where they exist.</p> | <p>Partially. The proposed project is broadly consistent with SADC plans and strategies. The proposal includes a summary for each participating country on the alignment with national climate strategies and plans but does not sufficiently address alignment with national sustainable development strategies and plans or poverty reduction strategies.</p> <p>CR 7: Please clarify alignment of the project with national sustainable development and poverty reduction strategies and plans.</p> | <p>CR 7: Para 73 added for Botswana. Para 74 for Malawi has the Malawi Growth and Development Strategy which demonstrates alignment to the project. Para added for RSA (77); Mozambique (80), Zimbabwe (83) and Zambia (81)</p> |
| | <p>7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?</p> | <p>Unclear. Compliance with relevant national technical standards is limited to a statement of intent. The ESP requires compliance with all relevant and applicable national technical standards, and not just those related to environmental safeguards.</p> <p>CR 8: Please clarify which the relevant national technical standards are and how the project will ensure compliance.</p> | <p>CR8: Para 88 has been updated to illustrate that all regional and national instruments will be used to screen the project prior to implementation</p> |

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| | 8. Is there duplication of project / programme with other funding sources? | <p>Possibly.</p> <p>The proposal lists a number of relevant potentially overlapping projects and programmes. Key partners in the region have been listed and some opportunities for collaboration have been identified. A fully-developed stage, the proposal will need to provide comprehensive information on actual overlap with other funding sources, on linkages and synergies, highlighting complementarity and lessons learning from earlier initiatives.</p> | Noted for further elaboration at the fully developed stage |
| | 9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons? | <p>Yes.</p> <p>The learning from other experiences and the dissemination of own learning under the project are described. Nevertheless, it is not clear that the learning and knowledge management elements of the project will have a clear and specific focus on other RBOs in SADC to which project results might be extended.</p> <p>CR 9: Please clarify how the project will generate knowledge directly available and relevant to all other RBOs and TBAs in the region.</p> | <p>CR9: Para 94 to 96 provide details of knowledge generation and dissemination including the vehicles used</p> |

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| | <p>10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?</p> | <p>Unclear. The proposal does not contain sufficient information on consultations that were held during the formulation of the project. There is no evidence that RBOs involved or a range of national entities have been consulted and are in support of the effort beyond the AF designated authority endorsement. A revised proposal should annex a clear list of consultations held (when, with whom, with what outcome) and provide evidence that RBOs and national entities have been sufficiently consulted and expressed interest. In doing so, it should clarify what level of endorsement the Ramotswa aquifer SAP has had at this stage.</p> <p>CAR 4: Please demonstrate in the proposal which consultations have already been held, how they have informed the project design, and how these constitute an effective and comprehensive consultation process as part of the project design, involving all key stakeholders.</p> | <p>CAR 4: Para 101 has been updated to demonstrate that in December 2021, consultations were conducted with international river basin organizations and national entities covering the six project countries. The list of participants and minutes of the proceedings are attached</p> |
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| | 11. Is the requested financing justified on the basis of full cost of adaptation reasoning? | <p>Unclear. Given the high risk of maladaptation, it's not clear that the project activities are relevant in addressing adaptation objectives and, taken solely, without additional funding from other donors, they will help achieve these objectives.</p> <p>Please refer to CR 4, 5 and 6 and CAR3 above.</p> | The aquifer development model as presented aims to achieve sustainability both in terms of groundwater usage and livelihoods. The proposed scale of financing per site is meant to complete a sustainable and cost-effective investment. The responses to CR 4, 5, 6 and CAR 3 provide more clarity. |
| | 12. Is the project / program aligned with AF's results framework? | Yes. | |
| | 13. Has the sustainability of the project/programme outcomes been taken into account when designing the project? | <p>Unclear.</p> <p>As mentioned under question 4 above, sustainable groundwater extraction critically depends on established and performant monitoring of both extraction and the condition of the aquifer. The management arrangements at TBA level need to be sufficiently solid, and enforceable. If not, the proposed infrastructure investments could be used in unsustainable extraction and depletion of groundwater resources, constituting maladaptation. The required resolution of the monitoring network is not demonstrated, and given the</p> | As a Centre of Excellence in the region, SADC-GMI will retain ultimate accountability of the project outcomes and assist the RBOs to upscale these outcomes to other TBAs in their jurisdiction. SADC-GMI is a registered going concern, just like the RBOs and they both have a mandate to promote the SADC region's development agenda. Consequently, this project is one step in rolling out the outcomes of the region's long term vision to enhance water security for sustainable development under climate |

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| | | <p>size and transboundary nature of the resources, it is unlikely that the envisaged monitoring and subsequent management efforts will be adequate. Given their role in this, the RBOs will play a critical role and sustainability strongly depends on their performance.</p> <p>Please see CR 1, 4 and 5, and CAR3.</p> <p>It is unclear from the proposal how project outcomes will lead to scale up.</p> <p>CR 10: Please clarify how project activities will lead to scale up.</p> | <p>change. This proposed project is implemented within the framework of the SADC Regional Strategic Action Plans of the SADC Protocol on Shared Watercourses that is overseen by the SADC Secretariat's Water Division. The SADC Secretariat's Water Division has oversight of both SADC-GMI and RBOs, hence the outcomes of this project will find their way into the regional planning for upscaling</p> <p>CR10: There are about 30 TBAs in SADC, of which over 25 have yet to go through the TDA and JSAP processes. The scope for upscaling the type of activities in this project is therefore still huge.</p> |
| | 14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund? | <p>No.</p> <p>Over two thirds of the budget for project activities is allocated to Unidentified Sub-Projects (USPs). While there is an inherent justification in the theory of change for the use of USPs, this needs to be made explicit and the implications need to be reflected in the ESMP. Other than implementing activities of the (yet to be formulated) SAPs, there are no restrictions on the choice of USPs,</p> | |

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| | | <p>leaving them entirely unidentified in location, in nature and in inherent environmental and social risks. Those are the kind of USPs with the greatest inherent risk of not complying with the AF ESP and GP. Being a regional project with varying partners involved further compounds the challenge of complying with AF's ESP and GP. It seems that the executing entity will need to perform the role of the IE in supervising and monitoring AF safeguards and GP compliance by the numerous executing partners but its capacity to do so is not demonstrated. The claim that the IE's environmental and social assessment procedures would be fully aligned with the AF is irrelevant and only compliance with AF policies needs to be demonstrated in the proposal. The overview of environmental and social risks presented in II.K includes those related to the USPs and is mostly speculative.</p> <p>CAR 5: Please identify environmental and social risks, in line with OPG Annex 3, 4, 5 and Decision B.32-33/17.</p> <p>The proposal does not state the category that the risk identification process has assigned to the project.</p> | <p>CAR 5: The risks are broadly identified at this Concept stage and the detailed risks will be detailed in the full developed proposal. Para 116 identifies the Environmental and social risks and Para 117 stipulates the risks</p> |
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| | | <p>CAR 6: Please categorize the project in terms of environmental and social risk, in line with the ESP.</p> <p>Compliance with the AF Gender Policy is limited to a few statements of intent. The role of gender in achieving the stated objectives and the opportunities for women's empowerment are largely missing. There is no reference to a gender assessment that has or will inform the project formulation.</p> <p>CAR 7: Please show that and how the project will comply with the AF GP.</p> | <p>that will be addressed during the project's detailed design.</p> <p>CAR 6: The potential negative environmental and social impacts associated with the agricultural activities and the development of infrastructure in the TBAs are minimal, localized, and reversible environmental and social impacts. Therefore the project is classified as Category B due to the need for further assessment and feasibility studies at the proposal stage. Project activities have been screened against the 15 Environmental Social and Principles (ESP). Para 116 has been revised.</p> <p>CAR 7: Para 112 refers to the SADC-GMI GESI Mainstreaming Strategy including IFAD policy on gender quality and women's empowerment has all the elements of the AF GP. Gender-sensitive climate-smart technologies and practices and barriers to participation (e.g. lack of childcare facilities, practices that increase women's workload, and the timing of educational events that interfere with women's daily schedules). These issues including gender-related challenges in agricultural</p> |
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| | | | development will be addressed through the project design and will be further investigated in the proposal stage and supported through gender responsive budget allocation. |
| | 15. Does the project promote new and innovative solutions to climate change adaptation, such as new approaches, technologies and mechanisms? | Yes. The involvement of RBOs in management and exploitation of (transboundary) aquifers for climate adaptation resilience is innovative, even if it is not original. The focus is on the technical and infrastructure angle and lacks in additional thoughts on incentivizing sustainable uses via policy measures or innovative finance. | |
| Resource Availability | 1. Is the requested project / programme funding within the funding windows of the regional projects/programmes? | Yes. | |
| | 2. Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 20 per cent of the total project/programme budget? | Yes. The administrative costs are below 20% of the total budget. | |
| Eligibility of IE | 1. Is the project/programme submitted through an eligible Multilateral or Regional Implementing Entity that has been accredited by the Board? | Yes. | |

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| Implementation Arrangements | 1. Is there adequate arrangement for project / programme management at the regional and national level, including coordination arrangements within countries and among them? Has the potential to partner with national institutions, and when possible, national implementing entities (NIEs), been considered, and included in the management arrangements? | n/a at concept stage | |
| | 2. Are there measures for financial and project/programme risk management? | n/a at concept stage | |
| | 3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund? Proponents are encouraged to refer to the Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy, for details. | n/a at concept stage | |
| | 4. Is a budget on the Implementing Entity Management Fee use included? | n/a at concept stage | |
| | 5. Is an explanation and a breakdown of the execution costs included? | n/a at concept stage | |
| | 6. Is a detailed budget including budget notes included? | n/a at concept stage | |

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| | 7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund? | n/a at concept stage | |
| | 8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function? | n/a at concept stage | |
| | 9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework? | n/a at concept stage | |
| | 10. Is a disbursement schedule with time-bound milestones included? | n/a at concept stage | |

Amended in November 2013



ADAPTATION FUND

REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A

Fax: +1 (202) 522-3240/5

Email: afbsec@adaptation-fund.org

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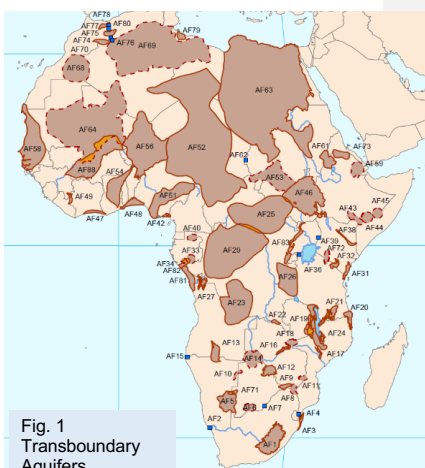
PART I: PROJECT/PROGRAMME INFORMATION

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|--------------------------------|---|
| Project/Programme Category: | Regular |
| Country/ies: | Ramotswa Aquifer: Botswana and South Africa Limpopo Basin Aquifer: Mozambique, South Africa, Zimbabwe Sand and Gravel Aquifer: Malawi and Zambia Tuli Karoo Aquifer: Botswana, South Africa and Zimbabwe |
| Title of Project/Programme: | Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region |
| Type of Implementing Entity: | Multilateral implementing entity |
| Implementing Entity: | International Fund for Agricultural Development (IFAD) |
| Executing Entity/ies: | SADC Groundwater Management Institute |
| Amount of Financing Requested: | \$13 932 000 (in U.S Dollars Equivalent) |

Project / Programme Background and Context:

1. Sub Saharan Africa makes little use of its groundwater resources, which contributes only 1% of total renewable water resource withdrawals for agriculture. Projected and continuing changes to the amount, intensity and predictability of rainfall in much of Southern Africa due to climate change will lead to changes in the way the region views its groundwater resources. Increasing water scarcity will be particularly challenging for smallholder farmers who produce up to 90% of Africa's food. Comprehensive adaptation actions are required to ensure water security for Africa's most vulnerable smallholder farmers in the face of climate change.

2. Currently, only 6% of the total cultivated area in Africa is irrigated. Across the region the irrigation potential from groundwater is grossly underutilised. It has been estimated that irrigation could boost agricultural productivity by 50%, bringing significant resilience to rural



livelihoods. Moreover, population growth and economic development will increase the demand for water across Sub-Saharan Africa, currently at around 50 litres per person, compared to 10 times that amount in the USA¹.

3. The challenges of a dynamic and declining water availability situation under future climate projections will lead to greater pressure to exploit unrealised and little-known groundwater resources, particularly for rural smallholder farmers who will be under pressure from competing water users such as commercial agriculture, urban development and energy production (the Nexus challenge).

4. The existence of over 30 Transboundary Aquifers (TBA) in Southern Africa present both a climate change adaptation opportunity and an institutional and management challenge (Figure 1). Whilst holding a significant proportion of the region's water resources, with built in natural resilience against increasing temperatures, (groundwater is estimated to be 35% of the total water available in SADC (7,199m³)) there are no established transboundary mechanisms to govern, monitor and manage their sustainable utilisation. River Basin Organisations represent emerging good practice for transboundary surface water governance. Groundwater will require similar transboundary cooperation, agreement and management arrangements for the region to be able to utilise the shared resources as a climate change adaptation response in a sustainable manner. It will be ultimately self-defeating if one country implements a sustainable groundwater use and recharge policy in a shared aquifer whilst another abstracts with little regard to the future. The SADC Groundwater Management Institute (SADC-GMI) will execute this project to address the challenges described above. It is projected that 1,361,995 beneficiaries living in TBA areas would become more climate resilient and enjoy improved water, food and livelihood security from the sustainable, cooperative and equitable use of transboundary groundwater resources. The sustainable use of the water resources will also contribute to reducing poverty levels in these areas, which are high.

5. The GMI approach to aquifer development and governance in Southern Africa is a four stage process, as shown in the figure below. The process develops the baseline data and determines strategic priorities between the countries who share the transboundary aquifer, which enables investment decisions to be made and aquifer utilisation through infrastructure development and solutions for agriculture. The types of infrastructure include monitoring boreholes, production boreholes, storage tanks, distribution pipelines, irrigation, treatment facilities and domestic distribution and connections for potable supply. These enable the development of resilience hubs, communities with secured climate resilient water supply that can be used for domestic and agricultural purposes, to build resilient livelihoods. A monitoring system is a final stage, which forms a feedback loop to inform both the future development and investments, and provides real time data to ensure sustainable extraction in the face of climate change and variability. The secondary monitoring systems proposed under this project will be carefully designed and installed to strategically generate real-time data on the current and future usage of the groundwater system and thus subsequently guard against 'maladaptation'. In addition the agricultural practices that will be promoted and the productive landscape management will include soil and water conservation techniques to improve infiltration of water, which will also contribute to avoiding maladaptation.

¹ <https://www.un.org/waterforlifedecade/africa.shtml>

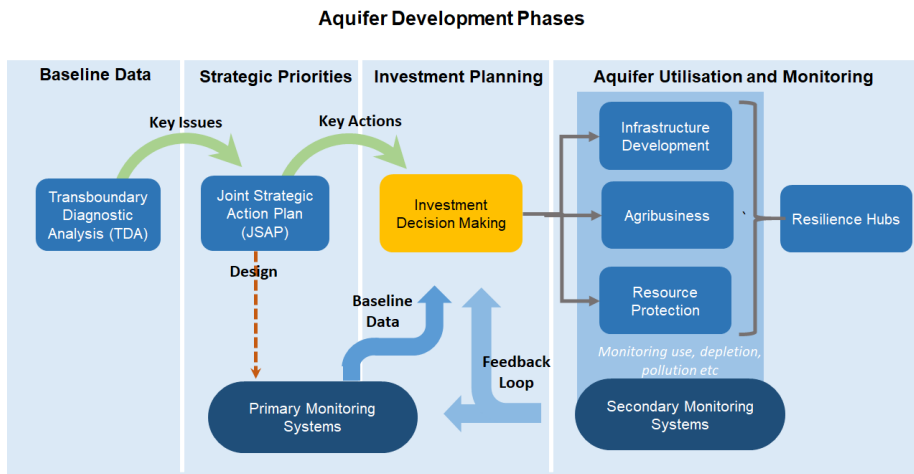


Figure 2. Aquifer Development and Governance process

6. Four transboundary aquifers in the SADC region have been prioritised in this proposal. These are the Tuli Karoo, Ramotswa, Sand and Gravel and the Limpopo Basin Aquifers. More information is provided on the reason for selection and the characteristics of the aquifers in Part II. The aquifers are in various stages of development, as illustrated in the figure below.

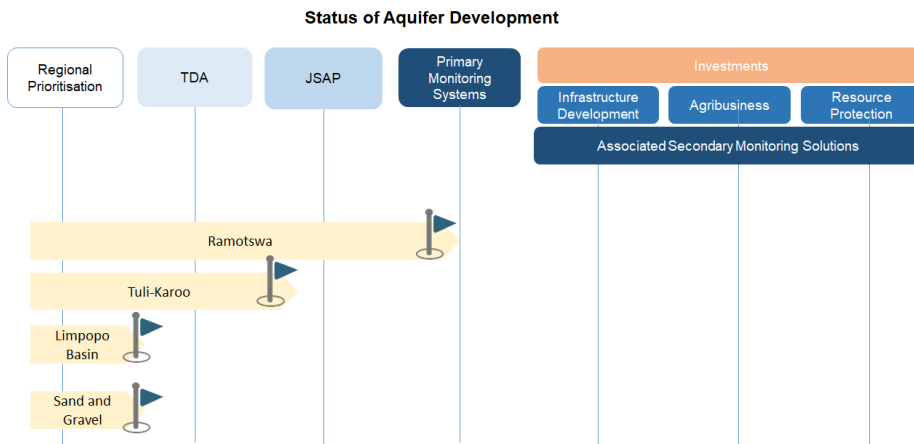


Figure 3. Aquifer Development Status

Project / Programme Objectives:

7. **Impact Goal:** To ~~provide concrete~~ achieve climate ~~adaptation-resilient management~~ measures-to-of increasingly variable and scarce water resources ~~based on a solid understanding~~

Amended in November 2013

~~of the hydrogeological and socio-economic settings of the transboundary groundwater resources and building climate resilient livelihoods in Southern Africa by promoting the sustainable use of unexplored transboundary groundwater resources by thus increasing water availability, agricultural productivity, food security and building climate resilient livelihoods in Southern Africa; based on a solid understanding of the hydrogeological and socio-economic settings of the transboundary groundwater resources.~~

Programme Objectives:

1. To increase technical knowledge and understanding of transboundary groundwater resources both now and under future climate scenarios through performing TDAs so as to inform policy development and investment decision making at national and regional level in the SADC Member States
2. To develop strong and mutually agreed governance and cooperation frameworks, strategies and policies, through a common understanding and joint planning processes by developing and implementing Joint Strategic Action Plans (SAPs) for sustainable use, management and protection of shared groundwater resources by SADC Member States
3. To develop information systems that provide robust, real-time data that can be used for investment decisions, for domestic, agricultural and resource protection / payment for ecosystem services purposes for equitable access in a changing climate
4. To develop equitable, fair and climate resilient access to groundwater resources for smallholder farmers and agribusiness to increase agricultural productivity, increase income and support resilient livelihoods in local Resilience Hubs

Project / Programme Components and Financing:

| Project/Programme Sub-Components | Expected Outputs | Expected Outcomes | Countries | Amount (US\$) |
|--|--|---|---|----------------|
| (Component 1.1) ² . Transboundary Diagnostic Analyses (TDAs) for Groundwater Resources | Two transboundary Aquifers Diagnostics completed <ul style="list-style-type: none"> - Determination of the status of the water resources and its uses in the system, currently and under future climate scenarios - Output will include aquifer type and properties, hydrological properties, groundwater and surface water flows and the interaction between them, levels of flows, water quality, recharge rates, impact of climate change, environmental and ecological properties and dependencies, land use, and socio-economic characteristics of the supported population and economies. Determination of the baseline sustainable abstraction rate under future climate projections to sustain agricultural livelihoods in the study area. | Policy makers have robust, scientific and reliable data to enable decision making on transboundary groundwater management | Limpopo Basin Aquifer: Mozambique, South Africa, Zimbabwe Sand and Gravel Aquifer: Malawi and Zambia | \$500,000 |
| (Component 1.2) Stakeholder Engagement and Joint Strategic Action Plans (SAPs) | Two Joint Strategic Action Plans produced that are aligned to local, national and regional priorities. <ul style="list-style-type: none"> - Key stakeholders from each riparian Member State brought together and engaged - Disclosure and discussion of relevant issues for each Member State - Options for the use of the groundwater resources developed and a SWOT analysis undertaken, based upon the results of the TDA - Identification of the options that will deliver the greatest climate resilience, water and food security and economic development impacts, including payment for ecosystem services - Prioritisation of the options - Existing planned investments and projects identified, quantified and included - Joint implementation planning to determine programme of action - Mutual agreement on the governance and institutional arrangements to be established Seeking political support at the highest level through the RBOs structures (Forum of Ministers), and the WRTC and also seeking buy in of the RBOs as one of the main stakeholders also sustain the further implementation of the SAPs | Greater ability of transboundary and country level institutions to manage TBAs for climate resilient agricultural development | Limpopo Basin Aquifer: Mozambique, South Africa, Zimbabwe Sand and Gravel Aquifer: Malawi and Zambia | \$550 000 |
| (Component 2.1) Implementing the SAP in the Sand and | Priority adaptation measures, actions and infrastructure identified in the SAP are implemented | Smallholder farmers and agribusinesses are more resilient to climate change in the two aquifers | Limpopo Basin Aquifer: Mozambique, | \$4.60 million |

² Refer to project description for details of Components 1-3

| Project/Programme Sub-Components | Expected Outputs | Expected Outcomes | Countries | Amount (US\$) |
|--|---|--|--|---------------|
| Gravel and Limpopo Basin Aquifers | <ul style="list-style-type: none"> - Priority measures are confirmed, based on the output of the SAP - Beneficiaries identified and consulted (30,000 Households direct beneficiaries and an additional 60,000 Households indirect estimated) - Activities and infrastructure as prioritised in the SAP are planned and budgeted <p>Activities and infrastructure are implemented e.g. Managed Aquifer Recharge Schemes, AgWater Solutions.</p> | through the implementation of priority adaptation actions and infrastructure | South Africa, Zimbabwe Sand and Gravel Aquifer: Malawi and Zambia | |
| (Component 2.2) Implementing Ramotswa SAP: Expanding Research and Knowledge on water needs and priorities for agribusiness in Ramotswa | <p>Based on the existing SAP, prioritised adaptation actions to enhance the resilience of agriculture</p> <ul style="list-style-type: none"> - Seeking political support at the highest level through the RBOs structures (Forum of Ministers), and the WRTC and also seeking buy in of the RBOs as one of the main stakeholders also sustain the further implementation of the SAPs - Review of large agri-businesses in the aquifer and identification of water stressed areas - Consultation with large agribusinesses and out-grower networks regarding current climate and water stress, and co-development of water infrastructure - Development of options for water solutions to current agricultural water challenges in the aquifer <p>Prioritisation by agribusinesses and government counterparts, in line with the SAP</p> | Key water needs to support the resilience of agri-business and out-grower agricultural livelihoods are understood and priority infrastructure development initiatives are agreed | Ramotswa Aquifer: Botswana and South Africa | \$124,500 |
| (Component 2.3) Implementing Ramotswa SAP: Capacity building for Managing Water for Sustainable Use, Availability and Access for Agriculture | <p>Capacity building that supports management and monitoring arrangements that support the ongoing sustainable use of new resilient water sources for agriculture</p> <ul style="list-style-type: none"> - Technical training/capacitation for governmental technical staff (15 staff per country covering 300 communities) on environmental and social (and climate change) management and monitoring - Awareness raising and communication with local management - Review, harmonisation and revision of regulatory instruments regarding water rights and licensing, including borehole drilling - Stakeholder analyses to identify needs and priorities - Joint monitoring practices established and agreed for harmonised data collection for water and climate parameters - Needs assessment for institutions in regard to fulfilling their mandate - Training for municipalities to orient non-specialists on basics of groundwater | Appropriate measures are in place for the management of water for communities to support climate resilient access to water and the ability to develop resilient agricultural livelihoods | Ramotswa Aquifer: Botswana and South Africa | \$400,000 |

| Project/Programme Sub-Components | Expected Outputs | Expected Outcomes | Countries | Amount (US\$) |
|---|--|--|--|---------------------|
| | Mentors appointed to junior employees in departments across the water sector | | | |
| (Component 3) Information systems to enable investment decision making | Monitoring boreholes (48 across all the aquifers) are developed and the data fed into regional information systems <ul style="list-style-type: none"> - The monitoring borehole network in each aquifer is designed, aligning to any existing boreholes - Monitoring boreholes are installed in each country (8 per country who shares the aquifer) - Monitoring parameters for the quality and quantity of water are recorded Information is inputted in real time into the GMP GMI Groundwater Information Portal, a regional data portal that collates data sets from boreholes and monitors | Agribusinesses have sufficient information to make investment decisions, and that information is regularly updated and monitored | All aquifers / countries | \$400,000 |
| (Component 4.1) Implementing Ramotswa SAP: Infrastructure Preparation and Implementation | A range of priority infrastructure will be designed and constructed. This may include boreholes, storage, transmission, irrigation. Seeking political support at the highest level through the RBOs structures (Forum of Ministers), and also seeking buy in of the RBOs as one of the main stakeholders and sustain the further implementation of the SAPs <ul style="list-style-type: none"> - Technical design of adaptation infrastructure, as identified above in Outcome 4 - Full project preparation including social and environmental impact assessments, climate change assessment, institutional and legal arrangements and cost benefit analysis - Construction of adaption infrastructure Note: It is expected that 5-10 medium sized projects will be implemented. Projects will be selected in line with portfolio budget of \$1.5 million | Production infrastructure identified as priorities are developed and enables farmers and agribusinesses to implement water management adaptation strategies to maintain production and safeguard livelihoods and food security | Ramotswa Aquifer: Botswana and South Africa | \$3.18 million |
| (Component 4.2) Agricultural water solutions to create resilience hubs in the Tuli Karoo | Developing solutions for resilient agricultural practises (covering an estimated 10,000ha) <ul style="list-style-type: none"> - Identification of agribusinesses and estates in the basin - Installation of monitoring devices in the estates - Assimilation of crop and water use data - Developing practises to enhance the water use efficiency and yields - Training on other climate smart agricultural practises such as more resilient varieties and cropping techniques Supporting the marketing of the crops | Climate resilience is built for smallholder farmers and agribusinesses through climate smart practices | Tuli Karoo Aquifer Botswana, South Africa and Zimbabwe | \$2.5 million |
| 5. Project Execution cost (5%) | | | | \$645 500 |
| 6.Total Project Cost | | | | \$12 900 000 |
| 7. Project Management Fee charged by the Implementing Entity (8%) | | | | \$1 032 000 |
| Amount of Financing Requested | | | | \$13 932 000 |

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

| Milestones | Expected Dates |
|---|----------------|
| Start of Project/Programme Implementation | December 2022 |
| Mid-term Review (if planned) | June 2025 |
| Project/Programme Closing | September 2027 |
| Terminal Evaluation | February 2028 |

Detailed work plan

| Component | Sub-Component | Sub-Component title | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-----------|---------------|--|--------|--------|--------|--------|--------|
| 0 | | Inception Phase | | | | | |
| 1 | 1.1 | Transboundary Diagnostic Analysis - Sand and Gravel Aquifer & Limpopo Basin Aquifer. | | | | | |
| | 1.2 | Stakeholder Engagement and Joint Strategic Action Plans (SAPs)- Sand and Gravel Aquifer & Limpopo Basin Aquifer. | | | | | |
| 2 | 2.1 | Implementing SAP - Sand and Gravel Aquifer - Limpopo Basin Aquifer | | | | | |
| | 2.2 | Implementing Ramotswa SAP: Infrastructure Preparation and Implementation | | | | | |
| | 2.3 | Implementing Ramotswa SAP: Expanding Research and Knowledge on water needs for agribusiness | | | | | |
| 3 | 3 | Information Systems for Investment decision making - Shire Aquifer - Ramotswa - Sand and Gravel Aquifer - Eastern Kalahari Karoo | | | | | |
| 4 | 4.1 | Implementing Ramotswa SAP: Infrastructure Preparation and Implementation | | | | | |
| | 4.2 | Agricultural water solutions to create resilience hubs in the Tuli Karoo | | | | | |

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

Project Components

8. The project will bring about concrete adaptation actions in the form of new water infrastructure to build transboundary and regional climate change resilience. The process has a number of necessary components to ensure the infrastructure is prioritised, the design is resilient and developed in a way which is sustainable in the long term. This is particularly important for a regional project such as this, whereby adaptation actions are being implemented in shared water

resources, which are utilised by two or more countries and the potential for unsustainable use, maladaptation or even conflict is real.

9. The project components have been designed and adapted based on lessons learned and good practices. As outlined above, they comprise:

Component 1: This component will focus on Transboundary Diagnostics Analysis (TDAs) and JSAPs. The Component will be split into sub-components 1.1 and 1.2 as described below. The development of TDAs and JSAPs mostly involves undertaking research and engaging stakeholders in the process. SADC-GMI has a Gender and Social Inclusion (GESI) mainstreaming strategy, including IFAD policy on gender quality and women's empowerment strategy –which provides sufficient safeguards for exclusion. The same tool is used at implementation level. The SADC-GMI GESI Mainstreaming strategy accommodates the Adaptation fund expectations on Environmental and Social safeguards.

10. Component 1.1. Transboundary Diagnostic Analysis

This develops the information and knowledge about current water resources and future climate impacts to enable scientific and evidence-based decision making at national policy level. It will include the analysis of existing environmental and social conditions, risks and drivers that may influence or generate limitations, impacts and any other type of constraints on the management, use, availability and quality of the water. This is extremely important to ensure that adaptation investment is focused to where it is most impactful.

11. Component 1.2 Strategic Action Plan development: I. The SAPs will identify priority actions to sustainably utilise the aquifers for domestic, agricultural, commercial and environmental (payment for ecosystem services) purposes. The actions are developed and agreed jointly by the two or three countries who share the resource. The SAP development is vital in formulating a regional adaptation approach in shared water resources. The SADC-GMI seeks to bring regional solutions to climate change adaptation – an approach that can be complex and must be undertaken with due focus on strong stakeholder engagement processes to develop mutually agreed and supported adaptation actions.

12. Currently groundwater monitoring in the region is variable, with some countries maintaining monitoring boreholes, while other countries are lacking monitoring altogether. This creates unbalanced monitoring data for a transboundary aquifer, where two or three countries may be extracting groundwater from the same resource. In addition, where data exists, it is not currently being fed into a central database, modelling and software system that provides real time information on water need, usage and extraction patterns. Making investment decisions on where to best focus climate change adaptation efforts is difficult. This component will address this by designing a network of monitoring boreholes that will align to the current boreholes and fill the gaps. It will install the boreholes and establish a data monitoring system that feeds into the existing regional Groundwater Information Portal and will be complemented with other relevant environmental information. The Portal will be adapted to generate reports that will inform investment decisions. It has also been noted that groundwater quality monitoring is hardly implemented in the targeted aquifers. The project

will deploy automated loggers with water quality monitoring functions. The loggers will measure TDS/Electrical Conductivity, to serve as an indicator for parts of the aquifers with deteriorating water quality, where follow up of the full set of water quality parameters can be implemented. Capacity in National laboratories will be enhanced, through the JSAP process, laboratories will be identified for upgrading/ rehabilitation.

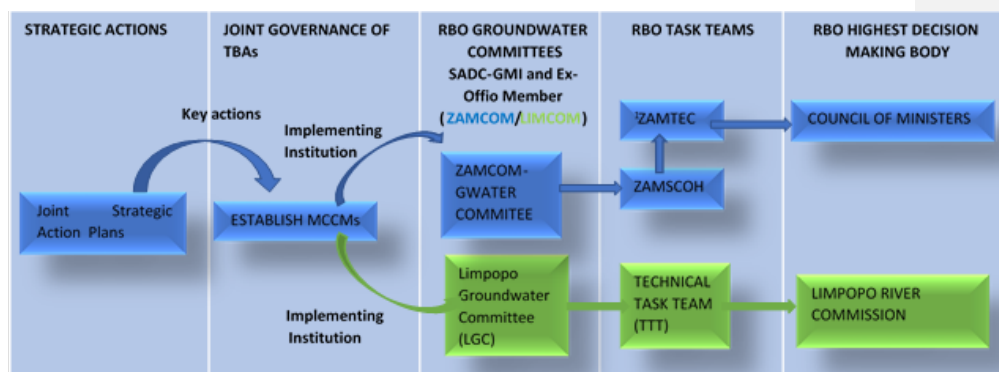
13. **Component 2. Implementing the SAPs:** This component allocates budget to implement the most impactful actions that will bring about the strongest climate change adaptation response. This component is key to building resilience through concrete adaptation activities. It takes the research, knowledge and action plans developed above and implements them, to bring a sustainable and climate resilient water supply to farmers in the aquifers. Through the design and construction of various small-scale water infrastructures, it will utilise a groundwater aquifer which is currently underdeveloped to enable adaptation strategies in agriculture to be realised.
14. **Sub-component 2.1: The JSAP developed for the Sand Gravel and the Limpopo Basin TBAs developed in sub-component 1.2,** will be implemented under this sub-component. Priority measures are confirmed, based on the output of the SAP. Under this sub-component activities and infrastructure as prioritised in the SAP are planned and budgeted and these may include Managing Aquifer Recharge, AgWater Solutions
15. **Sub-component 2.2: Implementing Ramotswa SAP:** Expanding Research and Knowledge on water needs and priorities for agribusiness in Ramotswa has recently been finalised and agreed a comprehensive list of actions to sustainably develop the shared aquifer for resilient water supply. The new programme of work proposed in this proposal will focus on water use for agriculture, a key factor in food security and resilient livelihoods in Southern Africa. As such, this project component focuses on bringing agribusiness into the conversation to explore concrete adaptation actions together in a way that is win-win for both the aquifer development, the agri-business and importantly their outgrowers and local communities. It will hone the list of priority actions to those with a clear demand, institutional owner, market and guaranteed impacts.
16. **Sub-component 2.3 Implementing Ramotswa SAP: Capacity building for Managing Water for Sustainable Use, Availability and Access for Agriculture:** This sub-component ensures the appropriate skills and capacity are present within institutions locally to continue to monitor and manage the water resources after the finalisation of this project. It will focus on skills required to monitor and manage the aquifer water levels and quality, importantly focusing on the management of sustainable extraction rates, recharge, how to bring future climate predictions in to the operational decisions of local water management authorities. It will also give local institutions sufficient skills and experience to continue to develop adaptive infrastructure outside of this programme of work. Where possible, the capacity development will include strong elements of cross-country sharing or cross-country training, to forge stronger and cooperative arrangements between the two countries involved in the Ramotswa development.
17. This sub-component will build strong management and monitoring processes for the infrastructure, the water use and the aquifer, to ensure the long term viability of the water resources and infrastructure. Environmental analysis will provide integrated information on

potential actions that may contribute to ensure (or increase) aquifer recharge, preventing landscape degradation, soil erosion and pollution. This component will lead to more efficient water use, enabling diminishing resources to go further, which together with the climate resilient infrastructure development above will provide an adaptation response to the reduction in water resources and increased drought events being experienced in the region.

18. Beyond the implementation of the technical aspects described above, this component is intended to develop mutually agreed governance and cooperation frameworks in each one of the TBAs through a variety of key strategic steps. From experience working in TBAs, the development of TDAs as well as JSAPs serve as invaluable opportunities to holistically identify key stakeholders across sectors within the project areas. Equipped with the comprehensive register of key stakeholders, this component will facilitate the rolling out of the Multi-Country Cooperation Mechanism (MCCM), a governance structure that was first piloted by the UNESCO-IHP in the Stampriet Transboundary Aquifer (TBA) and nested in the Orange-Senqu Watercourse Commission (ORASECOM). SADC-GMI has already initiated measures to establish an MCCM within the Ramotswa TBA which is intended to be nested within the Limpopo Watercourse Commission (LIMCOM) under the guidance of the LIMCOM Groundwater Committee that was also established by SADC-GMI in 2019. In the Zambezi River Commission (ZAMCOM) the SADC-GMI has initiated work to establish a Groundwater Committee, which will nest the governance structures of the RBAs in Zambezi River Basin. The MCCM model nested within the respective River Basin commissions bring together stakeholders to guide the planning and development of the groundwater resources within under which the TBAs. Since the TBAs fall within RBOs, the MCCM's provides site specific (TBA level) guidance to the respective Groundwater Committees under each RBO which includes guidance on the implementation of activities emanating from the Joint Strategic Action Plans, fall will allow the stakeholders in the project areas to adopt a suitable governance and cooperation framework for the sustainable use and management of the groundwater resources.
19. The Groundwater Committees are in most set up as sub-committee of the Hydrology Committee /technical committees of the River Basin Governance structures as guided by the SADC's revised protocol on shared water courses (2002) and the subsequent articles of the RBOs. It is through the Groundwater Committees that the JSAP will be endorsed by the RBOs through the council of Ministers or the equivalent bodies. The Council of Ministers also endorses the implementation of priority actions from the SAPs that will be funded through the RBO budgets. The LIMCOM agreement for instance acknowledges the overarching role of the Revised Protocol on Shared Watercourses in the Southern African Development Community". It also acknowledges the Convention on the Law of the Non-Navigational Uses of International Watercourses and Chapter 18 of Agenda 21 of the United Nations Conference on Environment and Development. The LIMCOM agreement through **Article 1** defines the Limpopo watercourse as a system of surface and groundwaters of the Limpopo, parts of which are situated in the territories of the Contracting Parties. The work proposed in this project aligns with the LIMCOM Integrated Water Resources Management (IWRM) plan developed in 2018. The said IWRM is the basis for the ongoing collaboration between SADC-GMI and LIMCOM to develop a Groundwater Strategy for the RBO, which will include all the elements of this project.
20. The Zambezi River Commission through Article 5 has the objective to, "promote equitable and reasonable utilization of the water resources of the Zambezi Water Course as well as the efficient management and sustainable development thereof " with specific functions articulated in Article 5(a) to 5(i). The ZAMCOM agreement defines the Zambezi Watercourse

to mean the systems of surface and ground waters of the Zambezi constituting by virtue of their physical relationship a unitary whole flowing normally into a common terminus, the Indian Ocean. The definition of the Zambezi Watercourse gives the ZAMCOM a clear mandate of the transboundary aquifers with the boundaries of the basin. Through Article 10 , 2(d), the Technical Committee can establish ad hoc or standing working groups, comprising representatives from Member States as may be necessary for the implementation of the agreement. A groundwater Committee has been identified as one standing working group tasked to guide the groundwater governance in the Zambezi River basin. The SADC-GMI is working with the ZAMCOM secretariat to establish the Groundwater committee in ZAMCOM. within the framework of the ZAMCOM Strategic Plan (2018 – 2040). The ZAMCOM Strategic Plan takes a holistic focus on the IWRM framework as the basis for its vision and hence this proposed project will contribute to realisation of this vision.

21. Figure 4 below is the diagrammatic description of the steps that will lead to the commonly agreed governance system in the Limpopo River Basin and the Zambezi River Basin. The process will be recommended to higher institutions of the Commission through the sub-committee responsible for groundwater in the respective river basin. In the ORASECOM the STAS MCCM was endorsed in under a year i.e. from being recommended by the Groundwater Hydrology Committee to endorsement by the Forum of the Parties.



¹ Zambezi Water Course Commission Technical Committee

² ZAMTEC Sub-Committee on Hydrology

Figure 4 Steps leading to commonly agreed governance system

22. **Component 3- Information systems:** There is a general paucity of groundwater related data in the SADC region. Joint management of transboundary aquifers requires a solid understanding of the aquifers and their response to external pressures. Sustainability of proposed interventions is heavily reliant on feedback from monitoring systems. The SADC-GMI through a study in the region on groundwater data collection and management noted that information systems that provide a platform for critical data sharing initiatives are lacking. Component 3 will address this shortcoming. The component will ensure monitoring boreholes are developed and the data on water quality and quantity from the network fed into regional information systems. The information will be inputted in real time into the GMP Groundwater Information Portal, a regional data portal that collates data sets from boreholes and monitors.

23. **Component 4: Infrastructure interventions in the Tuli Karoo and Ramotswa TBA.** The project aims to build resilience hubs in the Tuli Karoo and Ramotswa TBA building on the outputs from component 2. Sub-component 4.1 will target work in the Ramotswa TBA while the Tuli Karoo resilience hub are established in sub-component 4.2.
24. **Sub-Component 4.1: Implementing Ramotswa SAP:** Infrastructure Preparation and Implementation: A range of priority infrastructure will be designed and constructed. This may include boreholes, storage, transmission, irrigation. The sub-component will include Full sub-project preparation including social and environmental impact assessments, climate change analyses, institutional and legal arrangements and cost benefit analysis for the construction of adaptation infrastructure.
25. **Sub-Component 4.2: Agricultural water solutions to create resilience hubs in the Tuli Karoo:** The total irrigated area in the Aquifer Area is approximately 12,000 ha. The largest area under irrigation is in South Africa (6,900 ha), followed by Zimbabwe (2,900 ha) and then Botswana (2,000 ha). Total rainfed area is just over 84,000 ha. The largest area under rainfed production is in Zimbabwe (31,670 ha), followed by Botswana (28,440 ha) and then South Africa (24,780 ha). Overall, approximately 1 percent of the Tuli Karoo Aquifer Area is under irrigation, and just under 7 percent of the system is used for rainfed agriculture. Water consumption under irrigation was 133 million m³/a based on 2017 evapotranspiration data.
26. Most smallholder farmers use inefficient surface irrigation methods (e.g., furrow and border systems), indicating great potential to increase water use efficiency (WUE) by converting to drip systems and using soil and nutrient monitoring tools underscoring the need for smart agricultural interventions which will rely on groundwater. The Programme is expected to directly reach at least 30% of the existing farmers with the WUE activities (8,000 HHs with an estimated 10,000ha). The rainfed areas reach will be similar proportions for the land under production (30,000ha). Sustainability and efficiency will be promoted through the use of renewable energy e.g. solar, taking into account cost and efficiency, on pumping and water distribution.

Project Location and Climate Rationale

27. Of the 27 transboundary aquifers in the SADC region that have not yet been researched where there is also no data to inform sustainable abstraction, or where it has not been developed, three have been carefully selected as priorities for development.
28. Firstly, priority was given to those aquifers where the TDA process has already been undertaken and a SAP developed, as these represent “quick wins” where countries are engaged and already on the journey of developing their shared groundwater. In this situation, the SAP has prioritised the actions that are needed, this has been agreed by each member state sharing the aquifer, and technical assistance to implement the SAP can begin almost immediately. Infrastructure can be designed and constructed, and technical assistance to develop governance mechanisms and build local management capacity can begin.
29. In the SADC Region, only Ramotswa is in this position. Following the TDA in December 2016, a SAP was completed in 2019 and endorsed by the two riparian Member States of Botswana and South Africa during the Ramotswa 2 Project Closure workshop held in Gaborone, Botswana from 9-11 April 2019.

30. Of the remaining 26 aquifers that have not been researched, the Sand and Gravel Aquifer and Limpopo Basin are prioritised in this project as these are the most vulnerable to projected future climate change in Southern Africa³ and there is significant potential to bring about large impacts in supporting agriculture, food security and livelihoods in these two climate- and water-stressed lower income areas.

31. Climate vulnerability was assessed using the SADC Groundwater Information Portal, a public GIS tool that contains hydrological, climatic and demographic data for Southern Africa⁴. This allows the overlay of transboundary aquifers with climate vulnerability maps and enables the identification of the aquifers at highest vulnerability to projected climate change. It also allows interrogation of population and identification of aquifers with the largest number of potential beneficiaries. Through this, the Sand and Gravel Aquifer and Limpopo Basin aquifer were selected.

32. The Tuli-Karoo is the fourth aquifer selected in this project. The aquifer is next to the Limpopo Basin Aquifer and is similarly one of the most vulnerable aquifers to climate change in the region. It has also started its development, and some initial work has been undertaken. The TDA will be published in the coming months and initial work on the SAP has been started.

33. The interactions between surface water and groundwater is acknowledged in the SADC water policies. RBOs in the SADC region therefore subscribe to the principle of conjunctive groundwater and surface water management and have established working relationships with the SADC-GMI, through signing of Memoranda of Understanding. The proposed project will therefore be implemented within the same guiding principles, with active involvement of RBOs concerned (LIMCOM and ZAMCOM). Both LIMCOM and ZAMCOM are fully functional politically and technically consistent with their mandate in the Agreements and they will be able to adequately support and sustain the project activities. The functionality of these RBOs is also ascertained by the SADC region's governance mechanisms through the Water Resources Technical Committee where the RBOs report at least twice annually, as well as through the technical oversight provided by the SADC Secretariat's Water Division. Both RBOs have the technical capacities required to support the project activities. SADC-GMI as the Technical Advisor to the RBOs will also complement the capacities required for effective project implementation.

34. Figure 5 below shows the location of the four target aquifers superimposed on national and river basin boundaries. In addition they are also generally geophysical and hydrologically representative of other aquifers and governance arrangements and Government commitment are supportive. They are therefore strong pilot projects that provide a foundation for replicating and upscaling to other aquifers across Southern Africa in a possible Phase 2.

³ Villholth et al (2013) Integrated mapping of groundwater drought risk in the Southern African Development Community (SADC) region. Hydrogeology Journal, vol. 21(4), pp 863-885

⁴ <https://apps.geodan.nl/iqrac/gqis-viewer/viewer/sadcqip/public/default>

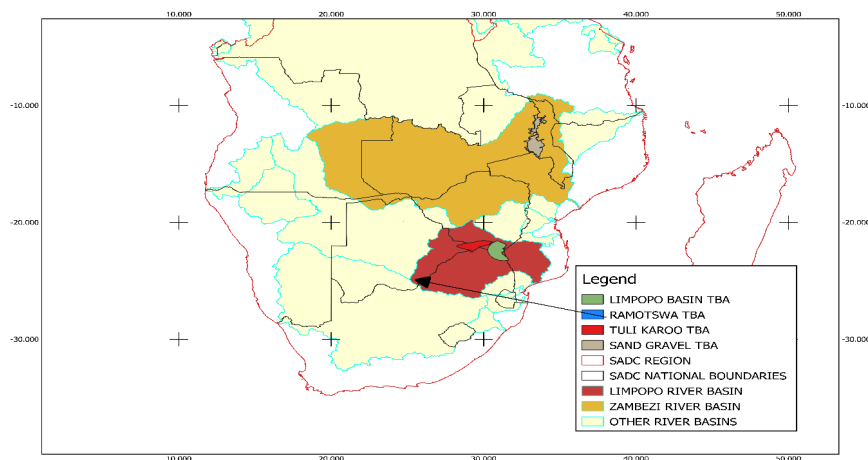


Figure 5: Targeted Transboundary Aquifers superimposed on River Basins

The transboundary aquifers of focus are:

| Name | Countries Sharing TBA | Area (km ²) | Estimated population |
|-------------------------|------------------------------------|------------------------------|-------------------------|
| Ramotswa Aquifer | Botswana and South Africa | 190 | 5694,995 |
| Limpopo Basin Aquifer | Mozambique, South Africa, Zimbabwe | 17,000 | 460,000 |
| Sand and Gravel Aquifer | Malawi, Zambia | 22,000 | 83,600 |
| Tuli Karoo | Botswana, South Africa, Zimbabwe | 12 000 | 123 400 |
| Total | | 51 190 km² | 1,361,995 people |

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35. The following paragraphs summarise the climate change impact and vulnerability in the areas of the Tuli Karoo, Limpopo Basin, Ramotswa and Sand and Gravel TBAs.

36. The summaries are based on data sourced through two methodologies: three future climate scenarios based on Self Organising Maps (SoMs) and a review of the current scientific literature on climate change impact in relevant region of the southern Africa.

5

Based on delineation provided by Yvan Altchenko, Nicole Lefore, Karen G. Villholth, Girma Ebrahim, Andrew Genco, et al. (2016). *Resilience in the Limpopo Basin: The potential role of the transboundary Ramotswa aquifer - Baseline report. [Research Report] USAID Southern Africa. 2016. hal-02329714. Study Area Included Gaborone, Lobatse, Ramotswa, Tlokweng, Kanye and Ngwaketse*

37. The scenarios here presented depict the possible climate futures for a transboundary river basin, which is related to the forementioned aquifers. These scenarios are based on analysis of over 35 Global Climate Models that cover the relevant basin. They use a statistical technique called Self Organising Maps (SoMs) which acts like a neural network to identify the more likely climate pathways in the future. This methodology helps indeed to manage some of the uncertainty related to climate models and projections.

38. Both the literature review and the SoMs methodology were previously applied by the Climate Resilient Infrastructure Development Facility (CRIDF) to feed climate vulnerabilities analysis of several transboundary basins in Southern Africa. The data is drawn from the *CRIDF Paper Southern Africa Projections and Impacts Guidance Paper (2018, updated 2020)*.

TULI KAROO TBA, LIMPOPO TBA AND RAMOTSWA TBA

SoMs for Tuli Karoo TBA, Limpopo TBA:

39. The scenarios elaborated for the Limpopo River Basin can help to understand the climate change impact on the Tuli Karoo and the Limpopo Basin TBAs.

40. The first scenario shows higher temperature and less rainfall in the basin in the period between 2040s and 2080s. In the border area the temperature increases slightly more by 1.250C in the 2040s rising to 2.50C in the 2080s. In the east of the basin, close to Mozambique, the temperature increases by 2.00C above the baseline by the 2080s. In terms of rainfall less evaporation, for most of the basin there are decreases of between 10 and 25% in the 2040s which remain similar in the 2060s and 80s with significant reductions of around 15-20%.

41. Temperature increases in the second scenarios are slightly less than in Scenario 1 averaging around 2.00C, although the biggest increase is still in the order of magnitude of 2.50C degrees. However, other domains see less temperature increases of roughly 1.50C - 1.750C rather than 2.00C in scenario 1. In terms of rainfall less evaporation there are large differences across the basin. In the East of the basin there are significant increases in rainfall (Mozambique) where precipitation less evaporation could be 50% higher by the 2040s and 75% higher by the 2080s (however this scenario is less likely than the first scenario (30%)). The border area between South Africa, Zimbabwe and Botswana show around a 5-10% increase in precipitation and rising to 10-25% in the 2060s and up to 30% in the confluence area in the 2080s.

42. The third scenario, the less probable, shows much higher temperature and much less rainfall. This scenario shows a steady increasing temperature throughout the century rising to over 40C in some places by the 2080s. The precipitation reductions are similar to scenario 2 and thus water availability decreases to less than 50% of the 1986 – 2006 baseline. The likelihood of extreme temperatures in the future defined as 3-year consecutive years in any one decade of having a temperature three standard deviations from the 1986-2006 average temperatures, increases between 0 and 17%. In terms of drought the likelihood of 3 years of consecutive drought equivalent to the 25 percentile changes slightly by 0 - 5% increases.

43. The likelihood of multiyear extreme events such as heatwaves would increase, the frequency of drought events will increase and wetter year frequencies will decrease in all three scenarios.

SoMs for Ramotswa TBA:

44. Projections of the western part of the Limpopo River Basin, the Waterberg area, are relevant to understand the climate change impact on the Ramotswa TBA.

45. According to the first scenario the temperature increases in the 2040s by 1.250C which rises to 2.00C by the 2080s. In terms of rainfall, the Waterberg area shows a roughly similar rainfall less evaporation as there is today with a slight increase of about 5% in the 2060s.

46. In the second scenario, this domain of the Limpopo Basin shows a significant decrease in rainfall less evaporation going from a 20% reduction in the 2040s to a 40% reduction in the 2080s. The third scenario, with only 5% of likelihood, shows a much stronger increase in temperature, they will increase by 1.50C in the 2040s and rise to 4.00C in 2080s, and a stronger decrease in rainfall, which is projected to decrease by 40% in 2040s.

47. As for the other domains of the Limpopo river basin, the likelihood of multiyear extreme events such as heatwaves would increase, the frequency of drought events will increase, and wetter year frequencies will decrease in all the three scenarios.

Hydrological impacts

48. Projections for climate change impact in the region of Limpopo Basin TBA, Tuli Karoo TBA and Ramotswa TBA suggest that aridity of desert and semiarid environments will persist in the future. The west of the country will probably know a decrease in rainfall, which will perhaps reach 20% in parts by 2025. Projections for 2055 show more severe conditions of aridity with increased wind erosion, migration of sand dunes, decreased air quality and pollution. Increased water demand may lead to unsustainable borehole extraction, causing the decrease of the groundwater table. Some ephemeral rivers will become permanently dry, perennial rivers may become ephemeral. Groundwater recharge will be reduced under all scenarios, as well as general water supply. Frequency of drought and heatwaves events are also expected to increase by 2025 and soil moisture anomalies may negatively affect agriculture systems and sustainability in the area by 2055. Indeed, by 2055, increased aridity may result in more severe food insecurity, increased spread of invasive plant and insect species and loss of rainfed agriculture, making subsistence agricultural systems less viable. Also, the reduction of surface water availability may result in higher health and sanitation risk.

SAND AND GRAVEL TBA

SoMs:

49. Projections on the Lake Malawi basin elaborated with the SoMs methodology are useful to understand the climate change impact on the Sand and Gravel aquifer.

50. The first scenario shows higher temperature and less rainfall. Steady rise in temperature throughout the century from 1.50C in 2030 to 200C by 2080. Precipitation less evaporation in the early season reduces throughout the century. From 5 % in 2030 to 15% by 2080. However, the later season sees a slight increase in rainfall of 5% by 2060 and 10% by 2080. In terms of the extremes indices they suggest a decrease in wet spells and an increase in dry spells by perhaps by 5-10% in both cases. In short, extended periods of heat, longer dry spells, briefer wet spells, and sometimes heavier rainfall events when these occur can be expected. Earlier season will be affected more than the later by extended warm and dry spells, and also reduced wet spells; most likely any changes in rainfall intensity would be distributed throughout the rainfall season. This scenario suggests the greater change in the climate than the average from the literature.

51. The second scenario shows higher temperature but more rainfall. There is a rise in temperature in the second half of the century but slightly less than in scenario 1. (1.250C in 2060

to 1.500C by 2080). Precipitation less evaporation in the early season increases in the second half of the century by 5% in the 2060s and 10% by the 2080s. However, the later season sees no change in rainfall less evaporation throughout the century. In terms of the extremes indices they suggest a decrease in wet spells and an increase in dry spells by perhaps by 5-10% in both cases. However, as the temperature is less than in scenario 1 this is expected to be exhibit less change. In short, extended periods of heat, longer dry spells, briefer wet spells, and sometimes heavier rainfall events when these occur can be expected.

52. The third scenario shows a slight increase in temperature is expected by the 2030s however by the 2060s this grows to 2.50C and 3.50C by the 2050s. Precipitation will remain the same by 2030 but then decrease significantly by 2060 (20%) and by 2080 (30%). The extremes indices are likely to exhibit more extreme version of the same trends mentioned in Scenarios 1 and 2.

Hydrological impacts

53. Projections for climate change impact in the region of Sand Gravel TBA suggest that there would be more erratic precipitation and temperature regimes, resulting in some likely increase in extreme flood and drought events by 2025. The likelihood, the severity and the duration of these events will further increase by 2055, worsening thereby the climate vulnerability of the area. By 2055, increased overall drying trend and decreased winter rains result in decreased food production, land surface degradation and soil erosion due to increased aridity and soil moisture loss. Climate vulnerability is also worsened by increased deforestation and biodiversity loss. Rain-fed agriculture will likely be less reliable in many areas and irrigated agriculture will become more significant, thereby increasing pressure on water resources and posing problems for farmers' access to technology, investment and training.

Innovation

54. The very nature of the project and its goal is innovative. The traditional approach for use of aquifers has been for each country to exploit the resource on a national scale with little regard for the effect on water resources across the border. The infrastructure that will be implemented is proven and well known, however the joint utilisation of transboundary aquifers to support livelihoods and promote climate resilience, and to establish a joint monitoring network between countries is innovative and new to Southern Africa and indeed Sub-Saharan Africa where groundwater in general is under-utilized and under-developed.

55. The project also goes beyond research and action research, to directly link research to implementation, development impact and climate resilience on the ground. This transcends the common issue whereby research outputs and reports are generated and the information does not get acted on. By linking research to direct implementation, we ensure that adaptation investment is targetted according to robust evidence and that research investment is targeted to where the results will be acted upon in the same programme.

56. The SADC region is generally a data scarce region with regards to scientific data on groundwater and climate change impacts. Data scarcity is more pronounced in transboundary aquifers. The TDAs in the Sand and Gravel Aquifer and the Limpopo Basin Aquifer will develop and test big data methodologies to help provide an innovative solution to this common problem. This will draw from a pilot project on the application of big data approaches in Transboundary Aquifers, implemented by Water Research Commission (WRC), US Geological Survey (USGS) and the IBM Research Africa Lab in South Africa with funding from USAid and others.

Approach to climate change and building adaptation resilience

57. Through improved monitoring systems and data on water flows, decision makers will be better able to make informed adaptation investment decisions. They will be able to target funds where most needed, where water resources are most vulnerable or climate affected in order to increase water use efficiencies, climate proof infrastructure and build resilience.

58. The infrastructure prioritised for development will be prepared in line with the climate resilience guidelines of CRIDF, who are partners in this proposal. CRIDF have developed a range of tools to guide the development of infrastructure that both builds resilience to climate change and also infrastructure that is suitable for future climatic scenarios.

59. In particular, the Risk and Vulnerability Assessment Tool (RVAT) evaluates the climate risk and vulnerability of communities, as well as water infrastructure projects. The tool assesses how current and future climate hazards (such as temperature, rainfall, droughts and floods) impact the broader community, as well as existing and potential water infrastructure projects in communities. Based on the prevailing risk and vulnerability, the tool explores potential interventions that will improve climate resilience prioritizing best practices and sustainable technologies, such as the use of renewable energy e.g. solar for water pumping and distribution. It utilises the updated Intergovernmental Panel on Climate Change (IPCC) methodology and the Vulnerability Sourcebook by Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ).

60. To ensure equitable, fair and climate resilient access for small holders the project will complete development of evaluative frameworks for climate change adaptation and resilience at local to national conditions in Zimbabwe, Zambia, Mozambique, Malawi, Botswana and South Africa. The results of the evaluation will inform the design and implementation of the project. The framework will also enable the assessment of how the project interventions will improve climate resilience of the smallholder farmers.

61. A consultative process of identifying smallholder farmers through producer/growers associations, government departments/agencies and other stakeholders will be implemented to ensure equitable and fair access to climate resilient interventions by smallholders.

B. Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

Economic, Social and Environmental Benefits

62. Further to responding to the needs of access to water and a sound and sustainable management of this vital resource, the project aligns with international, regional and national legislation. It is also aligned with policies on agriculture, water and natural resources management, climate change adaptation, land tenure, public procurement, decentralization, farmers' organizations and unions, employment, women's rights, among others, promoting integrated and intersectoral sustainability.

63. This programme will bring about significant socio-economic and environmental benefits, to a number of stakeholders. These include:

- Climate resilient water supply for smallholder farmers, including youth, women and other most vulnerable communities

- Promote integrated water resources and landscape management ensuring integrity and availability of ecosystem services;
- Reduce the loss and degradation of soil and prevent pollution of soil and water
- Contribute to make visible the role of women, to advance gender equality, to incorporate gender-sensitive actions
- Increased youth participation in agricultural productivity and natural resources management
- Increased and more secure agricultural livelihoods through improved productivity
- Enhanced food security for local communities resulting from improved productivity and diversification on farms
- Reduced climate risk to agri-businesses, under changing climate conditions
- Enhanced productivity of agribusinesses and related economic benefits, with the potential to create sustainable jobs and increased tax contribution to national economies
- Enhanced natural resources and environmental management capacity
- Increased awareness on interlinkages between environment, climate change, agriculture and human well being
- Strengthened capacities of local stakeholders to empower them to implement adaptation actions.

64. Guided by IFAD's mainstreaming agenda for gender and youth as well as IFAD's targeting policy, the project will aim to reach at least 50% women among the beneficiaries and 25% youth. Social inclusion, particularly of inclusion of vulnerable and marginalised groups will be part of the targeting strategy for the project.

65. The economic, social and environmental benefits will be further quantified at design stage and included in Environmental and Social Management Framework (ESMF) that will guide the project implementation. The ESMF will be developed by applying IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) and national regulations. The ESMF will detail the measures to avoid and minimize any adverse impact of the project activities on the environment and social structures. The ESMF will be developed to ensure adherence to the Environmental and Social Policy of the Adaptation Fund. The implementing environmental authorities will ensure compliance with pertinent standards and regulations in collaboration with the SADC-GMI team. The Environmental and Social Management Frameworks of the SADC-GMI will guide the management of the environmental and social impacts of infrastructure projects such as Managed Aquifer Recharge sites, agricultural plots, borehole drilling sites etc.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme.

Cost Effectiveness

66. This programme of activities builds upon a tested approach that the SADC GMI have been implementing and improving over the past 4 years. Three TDAs and three SAPs have been undertaken in the SADC region, managed by the GMI. Through this the method and implementation has been honed to become as efficient and effective as possible.

67. For example,

1. Stakeholder meetings will be arranged back to back with other regional gatherings, e.g. river basin meetings, to reduce travel costs and accommodation. We will use virtual meetings where possible

2. Use of young professionals to reduce the time input of expensive senior professionals
3. Where possible we will use in-country experts to reduce travel costs for data collection and stakeholder engagement.
4. We will ensure stakeholder buy-in and encourage in-kind contributions from the governments through use of, for example, government board rooms for meetings and government transport of in-country travel for field excursions.

68. Taking the regional approach to implementation and in particular undertaking two TDAs and SAPs concurrently we will bring efficiencies, for example using the same teams to deliver both processes, sharing management costs, and facilitating knowledge and data transfer.

D. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

Alignment with Regional and National Development Strategies

69. SADC Water Division provides the regional framework for water and provides ongoing guidance to support the various Member States in collectively supporting and attaining the objectives within this regional framework. This regional framework consists of the SADC Regional Water Policy (2005), SADC Regional Water Strategy (2006), SADC Regional Strategic Action Plan (through various phases of development) and SADC Revised Protocol on the Shared Watercourses (2000). The proposed work makes a significant contribution to the protocol, by advocating for joint planning and development and management of the transboundary aquifers. The pertinent policy documents are summarized below.

- The SADC Regional Water Strategy (2006) describes the strategies for achieving development and poverty reduction within SADC, through integrated planning, development and management of water (SADC, 2006). It seeks to address the historical practice where surface water and groundwater resources are compartmentalized instead of viewing and managing them as an inter-linked hydrological unit under the rubric water and environment. Two key strategies directly relate to groundwater, with both focusing on ensuring livelihoods and food security:
 - The first is aimed at 'promoting construction of multi-purpose storage facilities that will benefit irrigation and ground water recharge to enhance food security'. This recognises the importance of groundwater resources to rural communities that are not supported by reticulated water supply systems.
 - The second is to 'attain Regional Food Security through sustainable irrigated agriculture, rainfed agriculture, aquaculture and livestock production, through optimal use of both surface and ground water with the ultimate goal of poverty reduction'.
- The Regional Strategic Action Plan (Phase Four) (RSAPIV) (2016 -2020) has the key objective to unlock the potential for water (and related resources) to play its role as an engine and catalyst for socio-economic development. To do this, the RSAPIV recognises the importance of both ecological infrastructure and built infrastructure in providing the basis for water supply and sanitation, for energy security, for industrial development, for food security and for protection from water-related disasters. Groundwater resources not only provide support in maintaining ecological infrastructure, but are also a key source of

supply. RSAPIV recognizes the need to modernize and harmonize legal, policy and regulatory frameworks to address gaps in the prevailing institutional groundwater management tools at national and transboundary levels. Key to this is the advancement of transboundary and national groundwater knowledge through various initiatives and studies.

- The overarching legal framework governing transboundary water in SADC is the Revised Protocol on Shared Watercourses in the Southern African Development Community (2000). The scope of the Protocol includes shared "watercourses," which are defined as seas, lakes or aquifers.
- Recently the SADC-GMI completed a Regional Framework for Groundwater Data Collection and Management, which was presented to the Water Resources Technical Committee of the SADC. The proposed work will make a significant contribution to regional groundwater data collection and management.

70. The project will have a footprint in Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe. The national frameworks to which the proposed work will contribute are summarised below.

Botswana:

71. The Botswana Draft Climate Change Response Policy 2017 notes that the country's development and growth potential depends in-part on the availability of water for domestic and economic purposes. The Botswana National Adaptation Strategy 2020 acknowledges that the country is facing the negative impacts of climate change as evidenced by the endemic droughts, heavy rainfall, heat waves, and severe thunderstorms. It also recognises that agriculture, water, health and biodiversity are most vulnerable. The Botswana's Third National Communication to UNFCCC (2019) recognizes that whilst surface water resources are highly exposed to climate change through increase in temperature and reduced rainfall, groundwater is sensitive to climate change through reduced recharge and increased abstraction to meet the water demands. Therefore, climate change could transfer pressure to groundwater through scarcity of surface water resources.

72. The Government of Botswana also recognizes that food production is closely linked to water availability and will face increased stress in districts where water stress is exacerbated. In the Climate Change Response Policy, the Government has committed to adopting water management strategies that would achieve sustainable water conservation and use efficiency and among them are:

- Utilization of shared water courses for the benefit of Botswana.
- Integrating climate change response measures in the water planning processes across all economic sectors.
- Consideration of defining potential water aquifers and adopting appropriate measures of protection for water security and sustainability.
- Promotion of rainwater harvesting, water re-use and recycling for domestic, agriculture, industrial and commercial purposes.
- Employing accounting and valuation tools to support water management decision systems.

73. The key strategic pathways for the Government of Botswana's National Strategy for Poverty Reduction (2003) are aligned to the objectives of the proposed project: 1. The promotion of broad-based growth focused on sectors that benefit the poor (creating and expanding employment opportunities and sustainable livelihoods); 2. The enhancement of human capabilities of the poor (enhancing access to basic quality education, health and nutrition for the poor); 3. The promotion

of cost-effective pro-poor social safety nets (improved targeting and coverage, and level of benefits for the poor); 4. An enhanced effective response to the HIV/AIDS epidemic (reducing the aggravating effect of the disease on employment and productivity, disease burden and health costs, and vulnerability to poverty), and; 5. The strengthening of institutions for the poor to effect their participation in the growth processes, and to enable their access to social services and public safety nets

Malawi

74. The Second National Communication (SNC) of Malawi to the Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) 2011 states that Malawi derives the bulk of its revenues from the agriculture sector, whose viability depends on the availability of water (adequate and reliable rainfall). As such, the country's economy, prosperity and the wellbeing of its people are highly vulnerable to climate change and climate variability. Malawi's water policy (National Water Policy (2005)) aims to protect groundwater by preventing pollution and overuse. It promoted Integrated Water Resources Management (IWRM) and consideration of cross cutting issues such as climate change. The Water Resources Act of 2013, Water Resources Regulations (2018) and Environmental Management Act (2017) explicitly address the use, management, and protection of groundwater and provides the necessary tools for the state to regulate, manage, control, protect and develop groundwater resources in conjunction with surface water resources in Malawi. It specifies the need for long term plans to ensure the sustainable use of groundwater, including drought management plans and cross-sectoral coordination. The Malawi National Adaptation Framework 2020 notes that every year, Malawi loses an average of 1.7% of its GDP as a result of climate change-related disasters, mainly floods and drought. The successful implementation of the Malawi Growth and Development Strategy (MGDS) also hinges on the pursuance of key priority areas of agriculture and food security, irrigation and water development among others. Malawi's Nationally Determined Contributions (NDC) includes key and integrated, actions addressing the sustainable use of water such as upscaling afforestation, reforestation and forest conservation and protection of catchments, dissemination of climate resilient agronomic practices (e.g.: on-farm water conservation technologies, improved land and water use practices, capacity building integrated water resources management).

South Africa

75. The National Climate Change Adaptation Strategy (NCCAS 2019) provides a common vision of climate change adaptation and climate resilience for the country, and outlines priority areas for achieving this vision. The country has identified a number of adaptation options in the agriculture sector, including those related to water availability and management; to hazards; the natural resource base etc. South Africa's NDC assumes commitment in addressing climate change based on science and equity promoting a flexible adaptation on sector policies and measures into national and sub-national policy frameworks to enable implementation of climate change adaptation programmes and projects. Sector adaptation plans will be integrated into broader sector plans consistent with relevant sector planning or regulatory legislation.

76. More recently, the Government has strived to allocate water resources to meet the needs of a growing economy, to ensure food security, and to maintain ecological integrity and environmental quality. It is noted in the UNFCCC report that the sustainable use of several trans-boundary aquifers would benefit from improved forms of management and investment in scientific understanding. Several large dams and inter-basin transfer schemes have been installed to address various needs such as urban development areas, water requirements of thermal power generation, mining centres and some regions of agricultural activity. "South Africa's groundwater aquifers are estimated to store roughly 235 000 Mm³ of water (DWAF 2004) but the quality and

availability of data on groundwater resources and their recharge rates compromise sound management decisions. Current estimates of exploitable groundwater range from 4 800 Mm³ /yr, 6 000 Mm³ /yr, 10 000 Mm³ /yr and 19 000 Mm³ /yr", (UNFCCC Report 2011). Groundwater is used extensively in rural and more arid parts of South Africa. It is a significant resource to many irrigation farmers, small towns in more arid parts of the country and areas where surface-water resources are already fully committed. Rural communities in many parts of the country are largely or wholly dependent on groundwater. A result of the reliance on groundwater is indicated by the constant slow decline in groundwater levels, despite the seasonal fluctuations, attesting to unsustainable rates of use. Monitoring programmes in some regions are not adhered to and there is a lack of proper management of groundwater resources at national and local levels. Impacts of mining projects and their practice of groundwater removal are severe. Acid mine drainage is almost certainly the biggest threat to groundwater, especially in the vicinity of coal and gold mining activities. Further such exploitation of groundwater could have significant adverse environmental effects.

75-77. The South African National Development Plan (2012) envisions a better future by 2030 where no person lives in poverty, no one goes hungry, where there is work for all, and a nation united in the vision of the country's Constitution. The the NDP aims to ensure the achievement of a "decent standard of living" for all South Africans by 2030 through 1. better housing, water, electricity and sanitation; 2. safe and reliable public transport; 3. Quality education and skills development; 4. Safety and security; 5. Quality health care; 6. Social protection; 7. Employment; 8. Recreation and leisure; 9. Clean environment; Adequate nutrition

Mozambique

76-78. The 2007 Mozambique National Adaptation Programme of Action has objectives related to early warning systems, improving the capacities of family farmers to dealing with adverse effects of climate change and strengthening the management of river waters. There has not been any specific groundwater strategy to guide the subsector actions. Consequently, and despite that Mozambique's NDC aims at improving the capacity for integrated water resource management, including building climate resilient hydraulic infrastructures, actions are supported by non-robust planning tools, mostly adapted by those based on the surface water.

79. Mozambique is one of Africa's most vulnerable countries to climate change. The country is exposed to a number of extreme weather events including droughts, floods and tropical cyclones and climate change is likely to exacerbate this vulnerability to flooding, as it is situated downstream of nine major river systems. Water resources in Mozambique are affected by pollution from mining, industrial, agricultural, and household waste. There are areas in the regions classified as semi-arid and arid (Gaza, Inhambane, and Maputo), where rain, even when above average is inadequate and results in critical water shortages leading to limited agriculture productivity. Strengthening research and systematic observation for the collection of data related to vulnerability assessment and adaptation to climate change, increase effectiveness of land use and spatial planning are also included in NDC objectives related with sustainable use of water, activities and vulnerable groups dependent on availability and quality of water.

77-80. An analysis of the Mozambican Poverty Reduction Strategy Paper identifies five principal elements of the country which align very well to the objectives of this proposed project. The principal elements include (1) increased investment in education, (2) sustained economic growth, (3) adoption of measures to raise agricultural productivity, (4) improved rural infrastructure, and (5) reduced numbers of dependents in households. This proposed project will contribute to improving agricultural productivity and rural infrastructure.

Zambia

78-81. The National Water Policy revised in 2010 does not address issues of transboundary water management (including transboundary aquifers). The National Policy on Climate Change (NPCC) 2016's vision is "A prosperous and climate resilient economy by 2030". The NPCC identifies that the agricultural sector, which employs 67% of the labour force and contributes 16 to 20% of the country's national GDP, is highly dependent on rainfall and vulnerable to climate change. The resultant adverse impacts on crops, livestock and fisheries lead to reduction of agricultural productivity thereby contributing to food insecurity. Climate variability has kept a proportion of the population dependent on subsistence agriculture, below the national poverty line (NPCC, 2016). The Zambia National Climate Change Response Strategy (NCCRS, 2010) seeks to develop sustainable land use systems to enhance agricultural production, and to ensure sustainable management and resiliency of water resources under the changing climate. Zambia's NDC includes several objectives linked with water management, such as forest enhancement including natural regeneration and afforestation/reforestation; promotion of conservation agriculture activities leading to adaptation benefits and enhancing climate resilience, especially in rural areas; adoption and promotion of integrated water management (including ground and surface water monitoring systems), protection of catchment forests, improvement of monitoring systems for infrastructures, training for farmers, extension and technical staff on natural resources and climate change management and planning. In Zambia poverty reduction is based on the following pillars which aligns with this project as follows 1) Support to Infrastructure Development, which includes support to water and sanitation, energy and transport. 2) Support to Private Sector Development.

Zimbabwe

82. The current Zimbabwe Water Policy (2012) details support to groundwater management as follows: Data collection, management and research, integrated water resources management, Water and the hydrological cycle, Ownership of Water, Catchment as a unit of water management, Water for Primary needs. The Zimbabwe Climate Response Strategy has specific objectives to deal with promoting sustainable development, management and utilization of water resources under changing climatic conditions; promoting sustainable land-use systems that enhance agricultural production, ensure food security and maintain ecosystem integrity and address climate change through evidence-based research, technology development and transfer among others. The Strategy further deals with strengthening monitoring institutions for hydro-meteorological parameters; conducting more frequent yield assessments of surface and groundwater resources, promoting water use efficiency in all sectors. It also outlines the development, rehabilitation, maintenance and protection of surface and groundwater resources. Zimbabwe's NDC gives special focus to strengthen management of water resources, including the promotion and support of water harvesting as a climate change adaptation strategy, combined with the development and rehabilitation and maintenance of surface and groundwater resources, and enhancement of monitoring systems for hydro meteorological parameters.

79-83. The strategy for poverty reduction and sustainable development in Zimbabwe is anchored on seven key pillars, namely: (1) Agriculture productivity, growth and rural food security; (2) Social sectors; (3) Private sector; (4) Infrastructure and climate change; (5) Environment and climate change; (6) Gender, Women and youth empowerment; and (7) Strengthening governance and institutional capacity. This project will contribute specifically to pillars one, two, four, five and six through the development and implementation of SAPs.

Regional Institutions and bodies

80-84. Key regional guiding documents for the management of transboundary aquifers are the i) SADC protocol on Shared Water Courses (2002) and Regional Strategic Plan-IV (RSAP IV-2016-2020 currently being revised to RSAPV). In the SADC protocol on Shared Water Courses, the

management of transboundary aquifers is implied in the definition of the Water Course. The Protocol also sets the foundation for the establishment of river basin, with a clear mandate on groundwater. The RSAP IV, set out the establishment of the SADC-GMI, with a mandate to spearhead and advocate for management of TBAs. Further the SADC-GMI through its strategic business plan 2017-2023 acknowledges the work to be done in TBA.

84-85. The LIMOCM has been assisted to establish the Limpopo Groundwater Committee (LGC), under the guidance of the SADC-GMI. The LGC has the responsibility of guiding the LIMCOM on groundwater related issues in the Basin. SADC-GMI recently assisted the ZAMSEC with drafting a Terms of Reference for a Groundwater Committee for the Zambezi River basin.

82-86. While efforts have been made at promoting an enabling environment for the management of groundwater in River Basin Organisations and at national level. The implementing partners are cognisant of the inherent challenges presented by managing the invisible resource. The project will leverage on the experiences of the SADC-MI on implementing groundwater projects.

E. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

83-87. Technical standards in infrastructure preparation and construction will be central to the project. The project design will be assessed following the social, environmental and climate assessment procedures (SECAP) of IFAD, fully aligned with the AF and the SADC GMI Operational, Environmental and Social policies, which are flexible to enable tailoring to national requirements as per its 15 country membership.

88. The compliance with the Environmental and Social Policy of the Adaptation Fund will be ensured during the project design and implementation phases. The compliance includes an initial screening for compliance against laws and requirements and the 15 principles of the Environmental and Social policy of the Adaptation Fund of the environmental and social risk of the project as outlined in Section K of this Concept Note. These standards and principles will be further consulted when conducting the feasibility study and developing the project proposal. The screening will inform the Environment and Social Management Framework (ESMF) for the project that will be developed during the design phase. The ESMF will guide the project implementation and ensure identified environmental and social risks are managed in each of the prioritised TBAs. While clarity will subsist prior to implementation of site-specific projects, it is noteworthy that SADC has several protocols and strategic plans that are relevant for the proposed project. All the project countries have developed policies, laws, strategies and plans for the conservation and management of natural resources including land, water and biodiversity; as well as policies, laws and plans on climate change gender, HIV/AIDs, compensation and involuntary resettlement and marginalized peoples' rights. The site specific screening that will be implemented during project design will identify gaps between regional and national policy and regulatory frameworks and donor (AF) requirements which, depending on the extent of the gaps identified, may trigger the appointment of external ESS specialists to conduct a formal gap analysis and provide advisory services in handling the gaps. This may include the development and implementation of ESMPs.

89. IFAD has established its Environmental and Social standards that set out specific requirements for social and environmental issues to be addressed in alignment with national priorities. The nine standards are biodiversity strategy, resource efficiency and pollution prevention, cultural heritage, indigenous peoples, Labour and working conditions, community health and

safety, physical and economic resettlement, financial intermediaries and direct investments, and climate change which comply with the Fund and national policies and regulations for the selected countries.

84.—A grievance mechanism that provides people affected by the project with an accessible, transparent, fair and effective process for receiving and addressing their complaints about environmental or social harms caused will be developed at design.

90.

F. Describe if there is duplication of project / programme with other funding sources, if any.

85-91. Some relevant initiatives are being implemented in the region and there is a partial overlap. There are also clear options for cooperation and synergies and a clear need for the region to do so, including: GEF and CIWA/WB support to SADC-GMI, which among other will support e.g., national groundwater focal groups (overlap with the present concept), monitoring and real time database, DSS, etc, GEF and GIZ support to a number of river basins in the SADC region incl. to some degree groundwater and conjunctive management dimensions (e.g., Limpopo, Orange-Senqu, Cubango-Okavango, Punge-Save-Busi basins, Cuvelai and Kunene basins). e.g., the GEF support to LIMCOM will develop a TDA and SAP for the Limpopo basin and has only limited funds to go into detail on groundwater. Complementarity will be built into the project and TDAs and SAPs processes designed and rolled out in a coordinated and synergetic fashion. Support to groundwater management and transboundary aquifers via IWMI and GRIPP partners such as UNESCO, IGRAC, BGS e.g., support to SADC-GMI, Tuli-Karoo aquifer, Ramotswa aquifer, Stampriet Aquifer. Same for GWP-SA supporting e.g., LIMCOM and GEF agencies World Bank, UNDP and IUCN. Existing knowledge exchanges between SADC region RBOs and shared groundwater both supported by GEF IW projects and cooperation with GEF IWLearn will be utilised to further share the knowledge generated by the project.

86-92. The proposed project will seek to expand the work in TBAs in the SADC-region, given that of the ~30 TBAs in the region only 5 have been studied through TDAs and JSAPs, the above initiatives will be complemented through the project. Further, little has been done interms of implementing the JASPs, the project will contribute to this critical aspect.

87-93. The table below summarises, the key partners in the region in terms of i) focus areas in the region ii) collaboration with the Sustainable Groundwater Management in the SADC Member States Project Phase I and iii) envisaged collaboration with the Sustainable Groundwater Management in the SADC Member States Project Phase II and iv) areas for further collaboration under this proposed project.

| Partner (s) | Expertise | Current / Previous Work in the Region | Proposed Collaboration with proposed project |
|-------------|--|---|---|
| IGRAC | Groundwater Monitoring and Information Systems | Groundwater data collection and management in the SADC region | <ul style="list-style-type: none"> - Design set up and integration of groundwater monitoring systems in the 4 TBAs. - IGRAC has developed the current SADC-GIP, the |

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| | | | <p>proposed work will feed data into the SADC-GIP.</p> <ul style="list-style-type: none"> - Will also build capacity in the RBOs related to Groundwater Information Systems |
| UNESCO-IHP | Governance of Transboundary Groundwater aquifers. | <ul style="list-style-type: none"> • GGRETA III, seeks to amongst other issues expand the setting up of the MCCM in the for the Ramotswa TBA • Development and endorsement of the ORASECOM Stampriet Transboundary Aquifer System (STAS) | <ul style="list-style-type: none"> • The setting up of the MCCM for the Ramotswa TBA will complement the project. The MCCM will serve a critical role of implementing the Ramotswa JSAP • There are a lot of lessons learnt to be drawn from the work that UNESCO- IHP is implementing in ORASECOM and LIMCOM. |
| CIWA/GEF/WORLD BANK | Regional Groundwater Management | <ul style="list-style-type: none"> • Establishment of the SADC-GMI and center to advance sustainable groundwater management in the SADC region • Development of JSAP for TBAs including the TULI Karoo in Collaboration with IWMI | <p>The SADC- GMI will in the period 2022-2026 continue to support the LIMCOM with Groundwater Governance through e.g. development of a Groundwater Strategy and coordinating the Work of the Limpopo Groundwater Committee</p> <p>The project will rely on the capacity of the SADC to convene stakeholders around groundwater Governance and Management in the SADC</p> |
| IWMI | <ul style="list-style-type: none"> • Agriculture Water Solutions • Transboundary Aquifer Governance • Design of regional Groundwater Monitoring • Numerical Groundwater Modelling | <ul style="list-style-type: none"> • Involved in the Ramotswa, Shire and Tuli Karoo, development of TDAs and JSAPs for the Transboundary Aquifers. • Currently working on the KAZA | <ul style="list-style-type: none"> • Endorsement of the Ramotswa JSAP through the LIMCOM structures (the Limpopo Groundwater Committee) • IWMI will be a key partner under the proposed project. |
| Resilient Waters Program (USAID) | - Building Climate resilience in the region | <ul style="list-style-type: none"> • Supporting the groundwater Policy legal and Institutional (PLI) review and Roadmap | <ul style="list-style-type: none"> • The PLI project will complement the exploration of TBA governance in the Limpopo River Basin. |

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| | | development in Limpopo Basin | |
| GIZ | - Regional Transboundary Water capacity building | <ul style="list-style-type: none"> Assisted the SADC-GMI with capacity building aimed at integrating Groundwater Management into River Basin Organisations | <ul style="list-style-type: none"> Envisaged to collaborate around the issues of capacity building |
| BGR | Detailed Physical Hydrogeological Investigations of transboundary Groundwater systems | <ul style="list-style-type: none"> Work in the CUVECOM Ohangwena aquifer. | <ul style="list-style-type: none"> Approaches implemented in the Ohangwena aquifer will extended in the TBAs |

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

Knowledge Management

~~88-94~~. The approach to Knowledge Management will be two pronged, ensuring both learning from knowledge that has been generated in similar projects, and dissemination of the learning from this project to others in the region and wider. The SADC-GMI is mandated by SADC as a Regional Centre of Excellence in groundwater, and it has formed trusted relationships with the relevant government institutions in each SADC Member State, therefore it is ideally placed to act as a regional convener of knowledge and a dissemination hub. SADC-GMI is the Technical Adviser of all the RBOs in SADC and sits on all the Groundwater Committees, TBA structures as well as governance meetings. This provides an opportunity for SADC-GMI to facilitate cross-learning, and thus knowledge manage across the RBOs.

Learning

~~89-95~~. Learnings on the implementation of the TDAs and the SAPs will be sought from the aquifers where the process has already been undertaken, such as the Ramotswa and Stampriet Aquifers. The SADC-GMI implemented TDA/SAP work in the Shire TBA (shared between Malawi and Mozambique), also implementing a similar project in the Eastern Kalahari Karoo Transboundary Aquifer (shared between Botswana and Zimbabwe) and is also collaborating with the International Water Management Institute (IWMI) to implement a TDA/SAP in the Tuli-Karoo TBA (shared between Botswana, Zimbabwe and South Africa). Through these processes the SADC-GMI has built capacity to effectively implement TDA/SAP projects. Understanding the key success factors from these projects will be important to designing and adapting the process in each specific country context.

Dissemination

~~90-96~~. The aim of our dissemination activities will be to support decision makers and other stakeholders involved in the governance of transboundary aquifers, with relevant information. The following are planned as part of the Knowledge Management initiatives:

1. For each riparian country a research dissemination workshop will be held

2. Dissemination of research results on existing web-based platforms through a two-pronged approach:
 - a. Data collected and generated for each TBA (boreholes, water quality, yields, aquifer maps, groundwater contour maps), will be made available to stakeholders through the SADC Groundwater Information Portal (SADC-GIP). This is owned and maintained by the SADC-GMI who will create a dedicated platform within the portal for each TBA.
 - b. Reports collected and generated will be distributed through the SADC Groundwater Literature Archive (SADC-GLA), a portal dedicated to making groundwater literature available to stakeholders.
 - c. Dissemination of knowledge and information through national, regional and international fora
 - i. At National level the National Focal Groups on Groundwater, which the SADC-GMI is implementing in all the SADC Member States will be used. The National Focal Groups have the primary function of advocating for national and transboundary groundwater management and comprise of all the key groundwater stakeholders in each Member States.
 - ii. At the regional level knowledge will be disseminated through platforms such as;
 - The Annual SADC groundwater conference
 - Southern Africa Development Community (SADC) River Basin Organisations (RBOs)
 - The Annual WaterNet Symposium
 - SADC Multi-Stakeholder Water Dialogue
 - d. The SADC-GMI has a network of international partners through which the knowledge generated can be disseminated, this Network includes, UNESCO-IGRAC, UNESCO-IHP, British Geological Survey, the BGR, IWMI, CRIDF, AMCOW etc. SADC-GMI constantly organize joint events to elaborate on groundwater development and management in the region with these international partners. Hence they provide a ready platform through which to disseminate results from the TDA/ SAPs. Community feedback will be through National Focal Groups, which provides an inclusive platform for in-country stakeholders. Site educational tours to successful pilots will be organized at the regional level through the SADC's sub-committee on Hydrogeology which is convened by the SADC-GMI.
- H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

Stakeholder Engagement

94-97. Effective stakeholder engagement develops a “social license” to operate based on mutual trust, respect and transparent communication between an organisation and its stakeholders. Strong, equitable and fair stakeholder engagement and consultation is central to this programme of work. The transboundary nature means that without firm stakeholder agreement on both sides of the national border, the aquifer development will not succeed. For this reason, the GMI have developed a robust approach to stakeholder engagement, based on the foundation of SADC policies and refined during the three previous SAP processes and the implementation of infrastructure projects in all 15 SADC Member States. This involves stakeholder identification and analysis, timely disclosure of project information, inclusive dissemination of and access to information, public participation, consultations and feedback, and access to a mechanism to raise and remedy grievances.

92-98. To better understand priority issues and raise consensus on joint (cross-border) management of water resources in the aquifer system, joint stakeholder dialogues will be held with participation of government representatives, national experts and other interest groups.

The stakeholder dialogues will;

1. Place emphasis on inter-sectorial participation and consultation
2. Seek stepwise consensus building through validation workshops to ensure a wider stakeholder buy-in
3. Validate the options for interventions at technical, management, socio-economic and policy levels

The Stakeholder engagement techniques will be grounded in International Best Practice and will include the following:

1. One-on-one interviews with key representatives of identified stakeholder groups
2. Formal meetings
3. Workshops
4. Focus group meetings

93-99. SADC-GMI will rely on its network of civil society and government partners to identify 'left behind' groups for targeting and inclusion. Focus will be given to ensure the voices of women, the elderly, youth, disabled and other vulnerable groups are heard – this will be particularly important when determining the priority actions for agricultural adaptation measures, due to the sector traditionally being implemented by women but controlled by men. SADC-GMI will also ensure appropriate consultation and engagement with smallholder farmers, not just commercial agribusiness.

100. At this stage it is envisaged that the following stakeholders will be consulted at the different stages of the project. Cognisance has to be taken that a full list of stakeholders through a stakeholder mapping exercise at the onset of project implementation.

94-101. The table below summarises, the different stages of the project cycle and the key stakeholders to be consulted.

| Project Stage | Project formulation | TDA's | JSAPs | Implementation of JSAPs through agribusiness, infrastructure development, resource protection |
|-----------------|---|---|---|---|
| Key Stakeholder | Groundwater national Focal Persons National Focal Groups in the Member States Ministries/Departments responsible for Agriculture Local Authorities within the TBA. Youth and Women organisations Farmer organisations Climate Focal Persons for each Member State. International cooperating partners active in the TBAs | Groundwater national Focal Persons National Focal Groups in the Member States International cooperating partners active in the TBAs | Groundwater national Focal Persons National Focal Groups in the Member States Ministries/Departments responsible for Agriculture Local Authorities within the TBA. Youth and Women organisations Farmer organisations Climate Focal Persons for each Member State. International cooperating partners active in the TBAs Traditional Leadership | Groundwater national Focal Persons National Focal Groups in the Member States Ministries/Departments responsible for Agriculture Local Authorities within the TBA. Youth and Women organisations Farmer organisations Climate Focal Persons for each Member State. International cooperating partners active in the TBAs Traditional Leadership |

In December 2021, Consultations were conducted with international river basin organizations and national entities covering the six project countries. The list of participants and minutes of the proceedings are attached. The representatives from the six countries and the two RBOs welcomed the project and the objectives and clearly indicated the need for the project and their support to ensure the objectives are achieved.

- I. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Justification for Funding

95-102. The programme of work has been developed to balance the needs of research and stakeholder engagement to inform action, with concrete adaptation activities on the ground. One cannot happen without the other, yet this can often take time and is often not the priority for adaptation funding. For this reason, aquifers in two different stages of development have been selected, to be able to build the groundwork for action in one and undertake the implementation and bring about adaptation impact in the other.

96-103. The challenges of a dynamic and declining water availability situation under future climate projections will lead to greater pressure to exploit unrealised and little-known groundwater resources. The project aims to fill an extremely relevant gap linked with the lack of solid data series that can feed the decision-making processes related with underground water resources management. With the strengthening and integration of the monitoring systems, and the capacity building provided, the project will contribute to the development of a robust regional information system, assisting local authorities and farmers to better assess risks and to adopt different approaches to address the impacts of climate change and variability. Comprehensive adaptation actions are required to ensure water security for Africa's most vulnerable smallholder farmers in the face of climate change. However, the investments proposed in this project cannot be undertaken by the countries alone, specially under a post-COVID -19 financial scenario. The economic slowdown caused by the COVID-19 pandemic also reduces the capacity of the countries to make huge financial contributions to development programmes as they must reorient financial resources to mitigate the effects of the pandemic. In addition to investments in urgently needed measures, the project will develop the mechanisms that will allow sustainability of long-term adaptation activities.

- J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.

97-104. Sustainability of project outcomes will be ensured in a number of ways. Implementation of the project will be through existing government structures, in particular through the local leadership and extension network, which will be strengthened to augment the numbers of extension officers and agents on the ground as well as capacities and capabilities to support farmer groups and organisations. This will ensure that there is institutional support for the project activities after the grant ends.

98-105. The TDAs would be undertaken using the most advanced groundwater and climate change modelling techniques, ensuring that the models are built on the highest quality data

available and model future climate predictions appropriately to ensure results will remain relevant under all future scenarios.

99-106. Decision making will be undertaken based on sustainable groundwater abstraction rates in line with the aquifer recharge rates, to ensure that the utilisation of the water resources is sustainable and does not lead to mal-adaptation. While admitting the role of clean energy in abstraction of groundwater for livelihoods, the resultant increased abstraction will need to be managed to safe abstraction limits. Incentives and control measures will be devised for example increasing the irrigation scheduling expertise of the farmers in collaboration with the relevant government departments/agencies and stakeholders, use of water saving interventions such as mulching, use of water efficient irrigation systems (drip/ sprinkler irrigation) and lastly use of legislative instruments (water use licences).

100-107. The SAP process will be based upon tried and tested national stakeholder engagement processes. It will be designed to be equitable, fair and give due time to ensure that all parties buy into the final product, to ensure long term commitment to the agreement. This process is extremely important, and has the potential to uncover potentially conflicting priorities between member states, which if not facilitated appropriately, could diminish the sustainability of the outcomes.

101-108. The sustainability of the groundwater infrastructure will be ensured in a number of ways. Firstly, the infrastructure specifications will be determined based on future water demand and availability under climate change. Secondly, the preparation studies will be robust and adhere to international best practise across all areas, including social and environmental assessments. The SADC GMI has recently developed an Environmental and Social Policy, which is in line with the requirements of the World Bank, Adaptation Fund, GCF, and IFAD's Social, Environmental and Climate Assessment Procedures (SECAP).

102-109. Thirdly, the beneficiaries will be trained on the operation and maintenance of the infrastructure. Fourthly, livelihood projects and components will be implemented and the capacity of smallholder farmers will be built, which will enable them to increase their income and in turn, their ability and willingness to pay for the water, in order to provide revenues for ongoing operation and maintenance.

103-110. Strong and inclusive stakeholder engagement processes will seek to ensure that there is full buy in at each decision making stage, and at implementation. It will be important to identify the infrastructure priorities of each affected party, including government, water authorities, the private sector, residents, farmers, and other beneficiaries, and to duly include them in the prioritisation process.

104-111. The SADC-GMI has commenced formulation of National Focal Groups (NFGs) in the SADC Member States. These NFGs are led by the National Focal person, with NFG including all stakeholders identified in through a stakeholder mapping exercise. Through this structure the SADC-GMI has successfully mobilised stakeholders in the previous TDA/SAP processes that it has undertaken. This structure is very important in consulting with the end users of the infrastructure to be developed and taking on board their aspirations and preferences. SADC-GMI will seek to directly consult the following groups of end users through their local structures: farmer organisations, local authorities, water user associations, indigenous people, youth and women organisations (including the disabled) and the River Basin Organisations. Protocols will be set in place for end user participation in the conceptualisation, design and implementation of the interventions, end user participation will be viewed as an integral process of the selection of

preferred options to ensure sustainability of the infrastructure. Local government structures have worked with the end users and will continue to do so.

105.112. The GMI will draw upon its ~~Mainstreaming GESI Guidelines Mainstreaming Strategy and Implementation Plan of 2021~~ and IFAD policy on gender quality and women's empowerment (2021) ~~which is fully aligned with the Adaptation Fund's Gender Policy. The strategy makes provision for~~ that are currently in development and the CRIDF GESI tools, which assessing the impacts of the project on women and vulnerable groups and determine ways to maximise the benefits for these groups and enhance inclusivity. In line with IFAD's target that all projects benefit at least 50% women and 25% youth, the gender aspects will also be taken into account ~~to ensure women's equal access project benefits. Gender-sensitive climate-smart technologies and practices and barriers to participation (e.g. lack of childcare facilities, practices that increase women's workload, and the timing of educational events that interfere with women's daily schedules).~~ These issues including gender-related challenges in agricultural development will be addressed through the project design and will be further investigated in the proposal stage and supported through gender responsive budget allocation.

106.113. The project will produce reader-friendly and eye-catching knowledge products including audio-visual material, based on the evidence generated in English and local languages. The project will provide technical contributions through coordinating structures at the ground water management Hubs on sustainable ground water management practices and the Projects Steering Committee. Workshops will be held for dissemination of results to policy makers in order to advance policy development on ground water management and climate change adaptation practices. This will aid the sustainability and longevity of the support for the overall solutions that are developed.

107.114. Sustainability in the adoption of sustainable ground water practices will be promoted through supporting a motivated and knowledgeable extension service through recruitment of facilitators to fill the gaps, greater technical support from the extension network and investing in work 'enablers' at the extension level to secure greater involvement in results monitoring and reporting. This is intended to improve the institutional support given to the farmer groups and de facto improve the quality of the demonstration plots. Sustainability of adoption rates will be promoted through working with women and men's groups separately. Participatory approaches used for the agricultural component will support farmer own priorities based on farmers' own knowledge of what works and challenges in order to ensure relevance. Sustainability will also be strengthened through agro-biodiverse farming strategies, which is intended to contribute to a stabilisation of production yields, and associated means to continue sustainable livelihood strategies in future years, but with minimum levels being substantially higher than at present, due to improved varieties based on landraces adapted to the availability and sustainable use of groundwater resources and recharge of aquifers. The farming strategies are expected to contribute to improved infiltration of water in the agricultural productive landscape. The project will implement a participatory approach based on indigenous knowledge and farmer to farmer knowledge sharing.

108.115. Sustainability will also be enhanced and supported by technical capacitation on environmental management and monitoring as well as awareness will promote best practices by water end users.

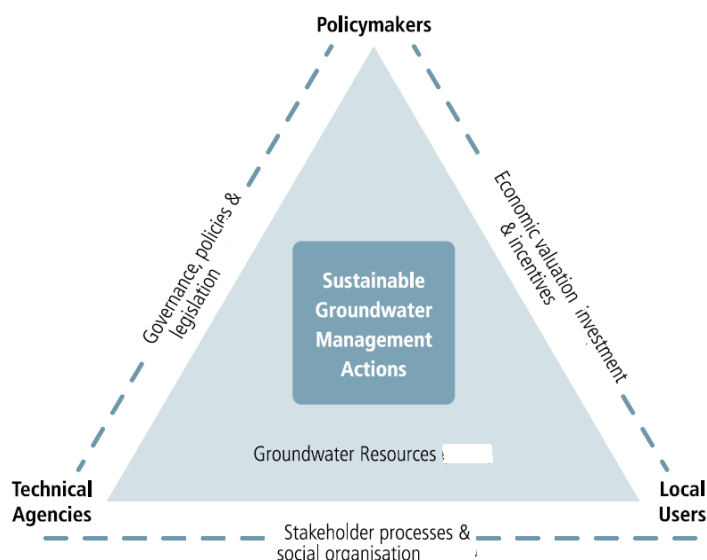
K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

116. The potential negative environmental and social impacts are associated with the agricultural activities and the development of infrastructure in the TBAs ~~are minimal, localized, and reversible environmental and social impacts.~~ Therefore the project is classified as Category B due to the ~~need for further assessment and feasibility studies at the proposal stage.~~ Project activities have been screened against the 15 Environmental Social and Principles (ESP). The risks identified during CN stage are preliminary and an environment and social risk assessment will be conducted at full proposal stage. The expansion or intensification of agricultural activities following the improved water availability may lead to localised land clearing, loss of biodiversity, increased erosion risk, pollution of surface water and land resources and social risks related to competing uses of water resources. The construction of agri-business facilities and agricultural production infrastructure such as irrigation schemes and boreholes may result in vegetation clearing, increased generation of waste, economic displacement and influx of migrant labour with social implications on community health and labour conditions. The use of groundwater for irrigation might result in over extraction resulting in lowering of the water table. Other associated risks include reduction in stream flows, degradation of riparian and wetland ecosystems. Despite the threat to depletion of groundwater deterioration of groundwater quality is also perceived as a risk emanating from the project. These risks if not mitigated will further reduce the resilience of communities to climate change. Achieving sustainable groundwater management demands coordination with surface water management for conjunctive use and that local groundwater users, technical specialists and policy maker's work together to implement multi-actor, collaborative and participatory strategies for sustainable management of groundwater.

109-117. During the detailed design phase of the project, the following aspects for compliance with the AF Environmental and social risks will entail Compliance with international and domestic law, provide fair and equitable access to benefits in a manner that is inclusive; avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups; respect and where applicable promote international human rights; promote Gender Equality and Women's Empowerment; meet the core labour standards as identified by the International Labor Organization; not implement projects inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples; avoids or minimizes the need for involuntary resettlement; avoid unjustified conversion or degradation of critical natural habitats; avoid any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species; avoid any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change; maximize energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants; avoid potentially significant negative impacts on public health; prevent the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level; promote soil conservation and avoid degradation or conversion of productive lands or land that provides valuable ecosystem services

140-118. The project's approach to groundwater sustainability is centered around i) understanding the limits/capacities of the groundwater systems ii) working towards policy law and institutions for effective groundwater governance iii) paradigm shift towards economic principles and instruments for sustainable groundwater management and iv) social organisation around groundwater management. The Collaborative model for sustainable groundwater

management is summarized in the figure below. This project will seek to work towards the collaborative model.



Source: Smith, M., Cross, K., Paden, M. and Laban, P. (eds.) (2016). Spring – Managing groundwater sustainably. IUCN, Gland, Switzerland.

444.119. Installation of monitoring systems and the generation of early warning information as a way of mitigating the risk of groundwater depletion and deterioration of quality will be central to managing the risks associated with groundwater mining.

442.120. Prior to developments in the respective TBAs a census of existing water users will be conducted, this approach will mitigate the risk of over allocation of groundwater. This approach takes cognisance of the fact that groundwater resources are diminishing and overexploited in some parts of the region.

443.121. Economic, social and environmental benefits will be further identified and qualified at design stage and included in Environmental and Social Management Framework that will guide the project implementation. The implementing environmental authorities will ensure compliance with pertinent standards and regulations. The ESMFs of the SADC-GMI will guide to manage the environmental and social impacts of infrastructure projects such as Managed Aquifer Recharge sites, agricultural plots, borehole drilling sites etc.

| Checklist of environmental and social principles | No further assessment required for compliance | Potential impacts and risks – further assessment and management required for compliance |
|--|--|---|
| <i>Compliance with the Law</i> | <u>No risk:</u> -Adherence to laws will be ensured by observing the SADC protocols. Necessary approvals will be obtained prior to any infrastructure development. | |
| <i>Access and Equity</i> | | <u>Low risk:</u> The TDAs, SAPs and the stakeholder consultation will ensure improved access to natural resources for different users. Equity will also be ensured by adhering to the protocols and in the implementation of the SAPs. Further assessment on access will be undertaken during the design stage. |
| <i>Marginalized and Vulnerable Groups</i> | <u>No risk:</u> Marginalised and vulnerable groups will be a key target group for the project starting with their identification during the design phase. The targeting strategy that will be developed for the project implementation will ensure social inclusion and the reach of marginalised and vulnerable groups in the TBAs | |
| <i>Human Rights</i> | <u>No risk:</u> Human rights will be respected during the project implementation with specific considerations also made during project design. IFAD as a UN specialized agency will ensure adherence to various conventions with the ratifications made in the different countries where the project will be implemented. Particular attention will be devoted to the right to water and food as basic needs to face the challenges of climate change variability. | |
| <i>Gender Equity and Women's Empowerment</i> | | <u>Low risk:</u> The focus on gender equity and empowerment is illustrated through the target to reach at least |

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| | | 50% women as project beneficiaries. Further assessments will be made during design to articulate specific activities to promote women's empowerment and ensure gender equity. |
| <i>Core Labour Rights</i> | | The ESMF that will be developed to guide project implementation will assess the risk related to labour conditions particularly for the infrastructure development and agri-business facilities. Specific measures will be articulated to adhere to acceptable working conditions and respect labour rights. |
| <i>Indigenous Peoples</i> | | <u>Low risk:</u> Indigenous peoples and their territories are not expected to be adversely impacted by the project activities. However, during design, indigenous peoples in the TBAs will be identified and specific activities to ensure their effective participation in the project activities included. The principles of Free Prior and Informed Consent will also be applied to project activities. |
| <i>Involuntary Resettlement</i> | <u>No risk:</u> The project activities are not expected to result in any involuntary resettlement. The risk will be further assessed during design and avoided through the application of Free Prior and Informed Consent during project implementation. | |
| <i>Protection of Natural Habitats</i> | | <u>Low risk:</u> The project activities are not expected to be implemented in protected areas. Any adverse impacts on natural habitats will be avoided or minimised through specific measures to be articulated in the ESMF. They would include promoting agricultural intensification as opposed to expansion, safe use, handling and disposal of agro-chemicals and restoration of areas following any infrastructure installation. |
| <i>Conservation of Biological Diversity</i> | | <u>Low risk:</u> The conservation of biological diversity will be promoted through diversity on the agricultural production landscape, avoiding or |

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| | | minimising any land clearing and habitat restoration at any infrastructure development sites. |
| <i>Climate Change</i> | | <u>Moderate:</u> Climate change is expected to have an impact on the availability of water resources in the TBAs and thus adversely impact the agricultural productivity of the target beneficiaries. The project activities will improve the climate change resilience of the communities in the TBAs. |
| <i>Pollution Prevention and Resource Efficiency</i> | | <u>Low risk:</u> The agricultural production activities may result in increased use of agro-chemicals and therefore pollution of water and land resources. This will be managed through capacity of smallholders in the optimal use and safe handling and disposal of agrochemicals. Water use efficiency will also be promoted through technologies such as drip irrigation systems. |
| <i>Public Health</i> | | <u>Low risk:</u> The increased use of agro-chemicals and the influx of migrant workforce and the infrastructure development may have adverse impacts on community health. Specific measures to manage dust and noise levels, site waste as well as hygiene during the infrastructure development phases will be articulated in the ESMF. In the context of the COVID-19 pandemic, protocols and messages of prevention will also be articulated during design. |
| <i>Physical and Cultural Heritage</i> | | <u>No risk</u> The project activities are not expected to have any adverse impacts on physical and cultural heritage sites. However, the potential risk will be further assessed during design and specific measures, including for chance finds during the infrastructure development phases, outlined in the ESMF. |
| <i>Lands and Soil Conservation</i> | | <u>No risk : Project activities pose no risk.</u> The land and soil health will be impacted by the agricultural activities and infrastructure development. However to minimise any adverse impacts sustainable intensification of |

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| | | agricultural production, optimal use of agro-chemicals and measures such as integrated soil fertility management will be promoted in the project areas. |
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PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme implementation.

444.122. The project implementation arrangement will comprise IFAD as the Implementing Entity assuming fiduciary responsibility and implementation oversight. SADC-GMI will be the Executing Agency. CRIDF is an Implementing Partner tasked with providing Technical support on Adaptation and resilience building. The River Basin Organisations (RBOs) LIMCOM and ZAMCOM will have the role of Cooperating partners, with the role of Institutionalising Interventions. LIMCOM and ZAMCOM have acknowledged groundwater as their core responsibility. National Focal Groups in each of the Member States will serve the purpose of coordinating national to local level stakeholder input and participation. The Groundwater-National Focal Groups (NFG) bring together groundwater stakeholders across various sectors in the country to support sustainable groundwater resource management, development and use. Membership of the NFG represent relevant mandated government institutions (multiple levels), academic and research institutions, the private sector (including drilling companies and consulting firms), Non-Governmental Organisations (NGOs), community-based organisations, service suppliers and the main user sectors. The NFG structure ensures that all stakeholders are involved and reaches all levels of stakeholders. The proposed project organogram is shown below.

445.123. Member State Partners who will provide national and regional policy integration and facilitation are:

Ramotswa Aquifer:

- Botswana: Department of Water Affairs
- South Africa: Department of Water and Sanitation
- ⁶LIMCOM through the Limpopo Groundwater Committee

Sand and Gravel Aquifer:

- Malawi: Depart. of Water Resources
- Zambia: Min. of Environment, Energy & Climate Change and Water
- ZAMCOM⁷

Limpopo Basin Aquifer:

- Mozambique: National Directorate of Water Supply and Sanitation
- South Africa: Department of Water and Sanitation
- Zimbabwe: Ministry of Environment, Water and Climate
- ⁸LIMCOM through the Limpopo Groundwater Committee

Tuli Karoo Aquifer:

- Botswana: Department of Water Affairs

⁶ SADC-GMI has a MOU with LIMCOM through which the Limpopo Groundwater Committee (LGC) has been established. The project will include the LGC as a key stakeholder.

⁷ SADC-GMI is current working with ZAMSEC to set up a sub-committee responsible for Groundwater. The SADC-GMI will be an ex-officio member of the sub-committee. The Project will be integrated into ZAMCOM through the Sub-Committee.

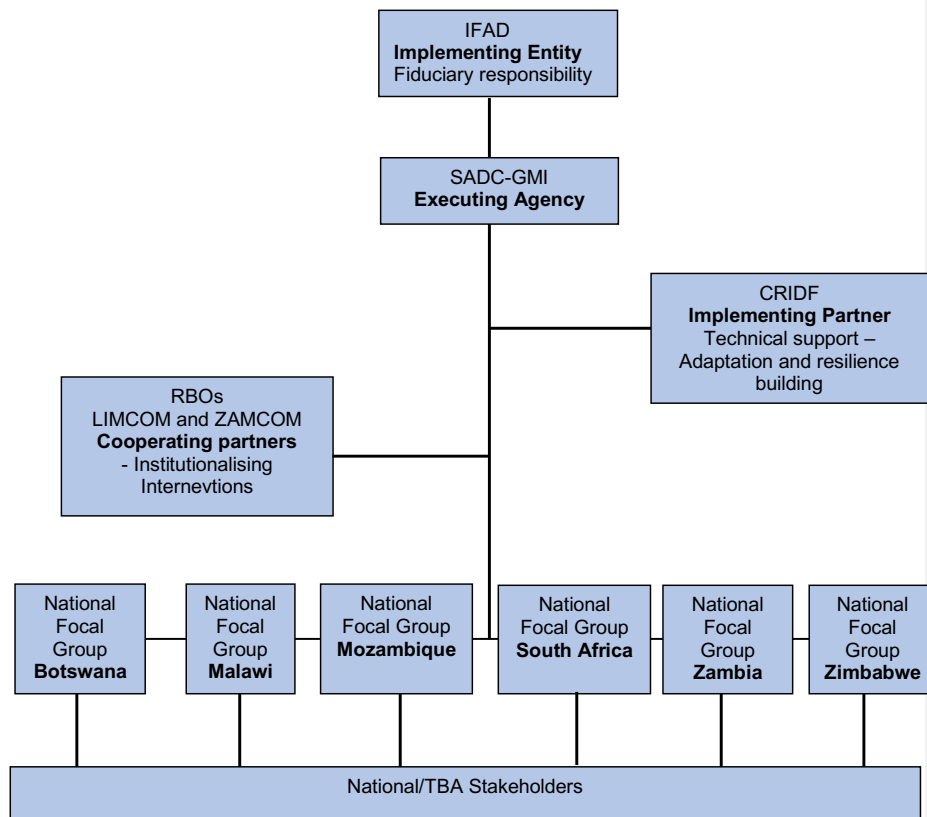
⁸ SADC-GMI has a MOU with LIMCOM through which the Limpopo Groundwater Committee (LGC) has been established. The project will include the LGC as a key stakeholder.

- South Africa: Department of Water and Sanitation
- Zimbabwe: Department of Water Development

116.124. SADC-GMI is a subsidiary of the SADC Secretariat which draws its mandate as a Centre of Excellence for groundwater management in Southern Africa from the Regional Strategic Action Plan on Integrated Water Resources Development and Management Phase 4 (RSAP IV: 2016-2020). It is the key convener able to link local level action to regional policy and scale up.

117.125. CRIDF, is a UKAid funded programme that works across Southern Africa in the SADC region. CRIDF facilitates long-term solutions to water challenges within SADC, delivering water infrastructure and building climate resilience for poor communities. CRIDF is a project preparation facility for climate resilient water infrastructure and projects include water supply, sanitation, irrigation, dams, and hydropower in both urban and rural settings.

ORGANOGRAM FOR IMPLEMENTATION



B. Describe the measures for financial and project / programme risk management.

418-126. SADC GMI has implemented projects from various development partners and in the process developed well-established procedures for reporting on funds. These procedures with the financial management of IFAD as the implementing entity will guide the financial and procurement operations of this Project. Adherence to the Adaptation Fund reporting requirements will be ensured by IFAD's oversight. Specific financial and project risk management measures will be assessed throughout the implementation of the project particularly during the supervision missions to be conducted by IFAD. A comprehensive and detailed risk management framework will be developed during design including measures to manage any identified risks and fill any capacity gaps. The risk management framework will take into account the fiduciary procedures of IFAD and the Adaptation Fund.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

419-127. The environmental and social risk management will be fully articulated during the design phase and build on the screening exercise outlined in Part II section K. The articulation will be done through the development of an ESMF given that specific sites for some of the project activities are unknown and will remain as such until the SAPs are formulated.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

420-128. Specific M&E arrangements and budget will be outlined during the full design of the project. The implementation team in SADC GMI will include an M&E specialist that will be responsible for the selection and reporting on key indicators from the results framework that will be developed and the project M&E system.

E. Include a results framework for the project proposal, including milestones, targets and indicators.

421-129. The results framework will be developed during the design phase of the project. The key results will include the number of beneficiaries reached (disaggregated by age and sex), the number of beneficiaries adopting climate change adaptation technologies, the SAPs developed, the number of prioritised SAPs implemented etc.

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

422-130. The alignment of the project with the Adaptation Fund Results Framework is outlined below. Further analysis of the alignment will be done during the design phase of the project. The specific indicators for the project objectives and outcomes as well as the grant amounts will be determined during design.

| Project Objective(s) ⁹ | Project Objective Indicator(s) | Fund Outcome | Fund Outcome Indicator | Grant Amount (USD) |
|--|--------------------------------|--|--|--------------------|
| Increase technical knowledge and understanding of transboundary groundwater resources to inform policy development and investment decision making | TBD | Improved policies and regulations that promote and enforce resilience measures | Climate change priorities are integrated into national development strategy | TBD |
| Develop strong and mutually agreed governance and cooperation frameworks, strategies and policies for sustainable use, management and protection of shared groundwater resources | TBD | Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses | 2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased | TBD |
| Develop information systems that provide robust, real time data that can be used for investment decision making | TBD | Support the development and diffusion of innovative adaptation practices, tools and technologies | Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level. | TBD |
| Develop equitable, fair and climate resilient access to groundwater resources for smallholder farmers and agribusiness in local Resilience Hubs | TBD | Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level | 3.2. Percentage of targeted population applying appropriate adaptation responses | TBD |
| Project Outcome(s) | Project Outcome Indicator(s) | Fund Output | Fund Output Indicator | Grant Amount (USD) |
| Policy makers and country level institutions have robust, scientific and reliable data to enable decision making on transboundary groundwater management | TBD | Output 7: Improved integration of climate-resilience strategies into country development plans | 7.2. No. of targeted development strategies with incorporated climate change priorities enforced | TBD |
| Smallholder farmers and agribusinesses are more resilient to climate change in | TBD | Output 2.1: Strengthened capacity of | 2.1.2 No. of targeted institutions with increased capacity to | TBD |

⁹ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

| | | | | |
|--|-----|---|---|-----|
| the prioritised aquifers through the implementation of priority adaptation actions and infrastructure | | national and sub-national centers and networks to respond rapidly to extreme weather events | minimize exposure to climate variability risks (by type, sector and scale) | |
| Climate resilience is built for smallholder farmers and agribusinesses through climate smart practices | TBD | Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated. | 8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated | TBD |
| Appropriate measures are in place for the management of water for communities to support climate resilient access to water and the ability to develop resilient agricultural livelihoods | TBD | Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning | 3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders | TBD |

G. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

423-131. The detailed budget and notes will be provided as part of the design of the project. Estimated costs have been provided for each of the project sub-components under Part I of this Concept note. The cost estimates included in this proposal are based on previous costs as experienced by SADC-GMI while implementing similar TDA, JSAP and groundwater infrastructure projects in the region. SADC-GMI already implemented about 4 TDA and JSAP projects in the region. Moreover, monitoring networks and small scale livelihoods supporting projects were also implemented in several SADC Member States in the last 5 years as part of the World Bank supported Sustainable Groundwater in SADC member States project, which ended in June 2021. Given the World Bank's insistence on value-for-money procurement processes, the costs adopted from that project to inform this Concept Note demonstrate cost effectiveness.

H. Include a disbursement schedule with time-bound milestones.

The disbursement schedule and time-bound milestones will be provided as part of the design of the project. Based on the estimated timeline for project implementation the first disbursement would be expected in Q4 of 2021 and the final one in Q2 of 2026.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government¹⁰ *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Zambia: _____ Date: 24 January 2022
Mr Francis Mpampi,
National Coordinator-National
Designated Authority for GCF
and AF
Ministry of National
Development Planning

Mozambique: _____ Date: 14 February 2022
Ms. Emilia Dique Fumo
Permanent Secretary
Ministry of Land and
Environment

Botswana: _____ Date: 01 April 2022
Mr. Balisi Gopolang
Senior Climatologist
Department of Meteorological
Services
Ministry of Environment, Natural
Resources conservation and
Tourism

⁶ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Zimbabwe
Mr. Washington Zhakata
Director, Climate Change
Management Department,
Adaptation Fund Focal point
Ministry of Environment,
Climate, Tourism and
Hospitality Industry

Date: 07 February 2022

Malawi
Mr. Peter K. Simbani
Designated Authority for the
Adaptation Fund in Malawi
Ministry of Industry

Date: 27 January 2022

South Africa
Ms. Nomfundo Tshabalala
Director General
Department of Forestry,
Fisheries and the Environment

Date: 04 April 2022

B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

| | |
|--|---|
| <p>I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans of Botswana, Malawi, Mozambique, South Africa, Zambia and Zimbabwe and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p> | |
| <p>Tom Mwangi Anyonge Implementing Entity Coordinator</p> <p><i>Director, OiC, Environment, Climate, Gender and Social Inclusion Division (ECG), IFAD</i></p> | |
| <p>Date: <u>22/0431/05/2022</u></p> | <p>Tel. and email: 06 5459 2519– t.anyonge@ifad.org</p> |
| <p>Project Contact Person:</p> <p>Paxina Chileshe, <i>Regional Climate and Environment Specialist, East and Southern Africa</i> IFAD</p> | |
| <p>Tel. and email: +254 207621035 - p.chileshe@ifad.org</p> | |
| <p>IFAD HQ focal point:</p> <p>Janie Rioux <i>Senior Technical Specialist (Climate Change), ECG Division, IFAD</i> Email: j.rioux@ifad.org</p> | |

All communication should be addressed to the
Permanent Secretary
Telephone: (260 211) 252395
(260 211) 252394
(260 211) 252391



REPUBLIC OF ZAMBIA

In reply please quote:

No.:

NDA/71/21/9

MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

OFFICE OF THE PERMANENT SECRETARY
CORNER OF JOHN MBITA & NATIONALIST ROADS
P.O. BOX 30147
LUSAKA, ZAMBIA

24th January, 2022

The Adaptation Fund Board
C/O Adaptation Fund Board Secretariat
Email: Secretariat@Adptation -Fund.org
Fax 202 522 3240/5

Endorsement for the SADC-GMI/IFAD/CRIDF Regional Proposal to the Adaptation Fund titled "Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region"

In my capacity as a National Focal Person representing Zambia on the SADC Sub-Committee on Hydrogeology, I confirm that the above regional project is in accordance with our national priorities to implement adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Zambia, as well as the broader region. The project also advances the role of groundwater in climate proofing the vulnerable communities in the rural and remote areas.

Accordingly, I am pleased to endorse the regional project concept note for submission to the Adaptation Fund. I am aware that if approved, the project will be implemented by the SADC-GMI, IFAD and the CRIDF.

Please accept the assurances of my highest consideration.

Yours Sincerely,

Francis Mpampi
National Coordinator-National Designated Authority for the GCF and AF
MINISTRY OF GREEN ECONOMY AND ENVIRONMENT



REPÚBLICA DE MOÇAMBIQUE
MINISTÉRIO DATERRA E AMBIENTE
Gabinete do Ministro

The Adaptation Fund Bord
C/o Adaptation Fund Borde Secretariat
Email: Secretariat@AdaptationFund.org
Fax: 2025223240/5

Maputo

NRefª 21 /GD/DMC/MITA/ 900 /22

Maputo, 14 de Fevereiro de 2022

Subject: Endorsement for the SADC-GMI/IFAD/CRIDF regional proposal to the Adaptation Fund titled "Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Regional"

In my capacity as the Designated Authority for Adaptation Fund in Mozambique, I confirm that the above regional project is in accordance with our national priorities in implementing adaptation activities to reduce adverse impact of, and risks, posed by climat change in Mozambique, as well as the broader region.

Accordingly, I am pleased to endorse the regional project concept note for submission to the Adaptation Fund. If approved, the project will be implemented by the SADC-GMI, IFD and the CRIDF.

Plse acctpt the assurances of my highest consideration.

Yous Sincerely

Emilia Leonor Dique Fumo



(Permanent Secretary)

TELEPHONE: 3956281/3612200
TELEGRAMS: METOFF
TELEX: 2533 WTHR BD
FAX NO. 3956282
EMAIL: meteo@gov.bw
REF:



REPUBLIC OF BOTSWANA

BOTSWANA METEOROLOGICAL SERVICES
P.O. BOX 10100
GABORONE
BOTSWANA

ALL CORRESPONDENCE TO BE ADDRESSED TO THE DIRECTOR

OUR REF NO: DMS 1/10/2 X (138)

01st April, 2022.

**The Chairman
Adaptation Fund Board,
C/O Adaptation Fund Board Secretariat
1818 H Street NW
Washington DC 20433.
USA.
Email: Secretariat@Adaptation-Fund.org
Fax: + 1 202 522 3240/5**

Dear Sir,

**Endorsement for the SADC-GMI/IFAD/ CRIDF Regional Proposal to the
Adaptation Fund titled “Enhancing Water and Food Security through
Sustainable Groundwater Development in the SADC Region”**

In my capacity at the Designated Authority for the Adaptation Fund in Botswana, I confirm that the above regional project is in accordance with our national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Botswana as well as the broader region.

Accordingly, I am pleased to endorse the regional project concept note for the submission to the Adaptation Fund. If approved, the project will be implemented by the SADC-GMI, IFAD and the CRIDF.

Please accept the assurance of my highest consideration.

Yours Sincerely

A handwritten signature in blue ink, appearing to read 'B.J. Gopolang', written over a horizontal line.

B.J. Gopolang

Adaptation Fund Designated Authority for Botswana

Our Vision: A modern weather service that nurtures and harbours innovation and creativity in the provision of quality weather and climate information



All communications should be addressed to

"The Secretary for Environment, Climate, Tourism and Hospitality Industry"

Telephone: 701691/2

Telegraphic address: "TOURISMT"

Fax: 702054



ZIMBABWE

**Secretary for Environment,
Climate, Tourism and Hospitality
Industry**

11th Floor, Kaguvi Building

Corner 4th and Central Avenue

Harare

ZIMBABWE

7 February 2022

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax 202 522 3240/5

Subject: Endorsement for the SADC -GMI-IFAD/CRIDF regional proposal to the Adaptation Fund titled "Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region"

In my capacity as the Designed Authority for the Adaptation Fund in Zimbabwe, I confirm the above regional project is in accordance with our national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Zimbabwe, as well as the broader region.

Accordingly, I am pleased to endorse the regional project concept note for submission to the Adaptation Fund. If approved, the project will be implemented by the SADC-GMI, IFAD and the CRIDF in collaboration with national institutions.

Please accept the assurances of my highest consideration.

Sincerely,

A handwritten signature in black ink, appearing to be 'W. Zhakata'.

W. Zhakata
Director Climate Change Management
Adaptation Fund Focal Point



Telephone: +265-(0)1- 774 266
Fax No.: +265-(0)1- 774 110



DEPARTMENT OF
STATUTORY CORPORATIONS,
P.O BOX 30061,
LILONGWE 3,
MALAWI

Ref. No. DSC/3

27th January, 2022

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax 202 522 3240/5

Dear Sir/Madam,

**ENDORSEMENT FOR THE SADC-GMI/IFAD/ CRIDF REGIONAL
PROPOSAL TO THE ADAPTATION FUND TITLED “ENHANCING WATER
AND FOOD SECURITY THROUGH SUSTAINABLE GROUNDWATER
DEVELOPMENT IN THE SADC REGION”**

In my capacity as the Designated Authority for the Adaptation Fund in Malawi, I confirm that the above regional project is in accordance with our national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Malawi, as well as the broader region.

Accordingly, I am pleased to endorse the regional project concept note for submission to the Adaptation Fund. If approved, the project will be implemented by the SADC-GMI, IFAD and the CRIDF.

Please accept the assurances of my highest consideration.

Yours sincerely,

A handwritten signature in blue ink, appearing to be 'P. Simbani', written over a circular blue stamp.

Peter K. Simbani
**DESIGNATED AUTHORITY FOR THE
ADAPTATION FUND IN MALAWI**



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +86 625 1042

Ref: EDMS 202621

Enquiries: Shahkira Parker

Tel: 012 399 9240 Email: sparker@environment.gov.za

The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat

Email : Secretariat@Adaptation-Fund.org
Fax 202 522 3240/5

ENDORSEMENT FOR THE PROPOSAL TO THE ADAPTATION FUND TITLED “*ENHANCING WATER AND FOOD SECURITY THROUGH SUSTAINABLE GROUNDWATER DEVELOPMENT IN THE SADC REGION*”

In my capacity as the Designated Authority for the Adaptation Fund in South Africa, I confirm that the above regional project is in accordance with our national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in South Africa, as well as the broader region.

Accordingly, I am pleased to endorse the regional project concept note for submission to the Adaptation Fund. If approved, the project will be implemented by the SADC-GMI, IFAD and the CRIDF.

Please accept the assurances of my highest consideration.

Yours Sincerely

Ms. Nomfundo Tshabalala
DIRECTOR-GENERAL
DATE: 07/04/2022



Batho pele- putting people first

The processing of personal information by the Department of Forestry, Fisheries and the Environment is done lawfully and not excessive to the purpose of processing in compliance with the POPI Act, any codes of conduct issued by the Information Regulator in terms of the POPI Act and / or relevant legislation providing appropriate security safeguards for the processing of personal information of others.

Enhancing Water and Food Security through Sustainable Groundwater Development in the SADC Region

Consultation held with international River Basin Organizations and national entities

| Country: Malawi 01 December 2021 09.30 – 10.33am | |
|--|--|
| Participant Name | Issues Raised |
| Steve Kumwenda, Program Hydrogeologist at BASEflow. BASEflow is the current NFG host institution. steve@baseflowmw.com , +265999302669 | 1. All participants acknowledged the importance of the project |
| Hopeson Chaima Programs officer-Policy and advocacy Water and Environmental Sanitation Network hopeson.chaima@gmail.com | 2. Participants requested that moving forward, the capacity building component should also include a postgraduate academic programme for PhD and MSc students |
| Macpherson Nkhata from Water Resources dept, Groundwater Division in Malawi. macpherson.nkhata@gmail.com | 3. The composition of the National Focal Group in Malawi was considered as sufficient to engage the grassroot communities in the Sand and Gravel TBA |
| Brighton Chunga, Mzuzu University, Malawi - bachchung@gmail.com | 4. The Department of Water Resources is currently collaborating with UNICEF to update the Malawian Hydrogeological Atlas and the resultant product will be an input into the planned project |
| Zione Butao, Department of Water Resources, SADC GMI Focal person Malawi | 5. Malawi has been engaging with Zambia to develop the TBA in question. The proposed project should also consider delineation of the TBA boundaries |
| Prince Mleta, Deputy Director, Department of Water Resources, Malawi | 6. Data collection and management is an inhibitor to groundwater development and management in Malawi and hence this project will assist to build national capacity |
| Jackson Ndayizeye, Water Engineer in UNICEF MALAWI. jndayizeye@unicef.org | |
| Paxina Chileshe-Toe, Regional Climate and Environment Specialist, IFAD: p.chileshe@ifad.org | |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| Brighton Munyai - SADC-GMI Senior Groundwater Specialist, brighton@sadc-gmi.org | |
| Hannah Siame Environmental Affairs Department Malawi | |
| Hopeson Chaima Programs officer-Policy and advocacy Water and Environmental Sanitation Network hopeson.chaima@gmail.com | |
| James Sauramba - SADC-GMI Executive Director, james@sadc-gmi.org | |

Field Code Changed

| Country: ZIMBABWE 01 December 2021 11.30 – 12.52PM | |
|---|---|
| Participant Name | Issues Raised |
| Wellington Dzairo - Glimss Consulting, Member of Zimbabwe NFG - wdzairo@gmail.com | 1. In order to reach the grassroot communities in the Tuli-Karoo TBA, the sub-catchment councils in the Umzingwane river basin should be included amongst the stakeholders |
| Japson Siwadi, Member of Zimbabwe NFG, Hydrogeologist, japsiwadi@hotmail.com | 2. The Local Government structures, through the District and Provincial Administrators must be included in the stakeholders' list |
| Zira Mavunganidze -Climate and Environment Specialist - IFAD - z.mavunganidze@ifad.org | 3. The project aligns very well to the Zimbabwe National Water Policy and the focus on groundwater as testified by the ongoing project to drill 35 000 boreholes nationwide |
| Constance Matsaira - Upper Manyame Sub-Catchment Council - mhuroconstance@yahoo.com | 4. The project areas are in the Limpopo basin which is a national |
| Lynette Ncube – Zimbabwe National Water Authority, ZINWA | |
| Paxina Chileshe-Toe, Regional Climate and Environment Specialist, IFAD: p.chileshe@ifad.org | |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| Brighton Munyai - SADC-GMI Senior Groundwater Specialist, brighton@sadc-gmi.org | |
| James Sauramba - SADC-GMI Executive Director, james@sadc-gmi.org | |

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|--|--|
| | priority due to the impacts of climate change and droughts |
|--|--|

Institution: LIMCOM **01 December 2021** **14.00 – 15.27**

| Participant Name | Issues Raised |
|---|---|
| Zvikomborero Manyangadze - Limpopo Watercourse Commission zmanyangadze@limpopocommission.org | 1. LIMCOM supported the selection of Ramotswa, Tuli-Karoo and the Limpopo Gravel Aquifer for this project |
| Ebenizario CHONGUICA - Limpopo Watercourse Commission ebenc@limpopocommission.org | 2. LIMCOM emphasised the need to leverage on other initiatives being implemented by UNESCO-IHP, the World Bank through the Southern African Drought Risk Initiative (SADRI) as well as the development of the LIMCOM groundwater Strategy being pursued by SADC-GMI which builds on the LIMCOM Monogram |
| Zira Mavunganidze -Climate and Environment Specialist -IFAD - z.mavunganidze@ifad.org | 3. Definition of resource protection should be expanded to include the catchments from where the groundwater is recharged |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| Brighton Munyai - SADC-GMI, Senior Groundwater Specialist, brighton@sadc-gmi.org | |

Field Code Changed

Field Code Changed

Country: ZAMBIA **02 December 2021** **11.30 – 12.33PM**

| Participant Name | Issues Raised |
|---|--|
| Pasca Mwila, Principal Hydrogeomatics Officer, Zambia pmwila69@gmail.com | 1. Zambia confirmed that the Sand and Gravel TBA is a priority as some work had already been initiated on the Zambian side of the TBA |
| Rakotovololona, B. Lucia – Program Analyst, IFAD | 2. The proposed project is well aligned to the second phase of the Zambian National Development Plan which has a component on transboundary waters and a component on climate change |
| Beatrice Pole – Zambia Ministry of Water – Hydrogeologist | 3. Zambia is in the process of reviewing the National Water Policy to also incorporate transboundary waters |
| Andrew Takawira, CRIDF, South Africa, andrew.takawira@cridf.com | |
| Paxina Chileshe-Toe, Regional Climate and Environment Specialist, IFAD; p.chileshe@ifad.org | |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| Brighton Munyai - SADC-GMI Senior Groundwater Specialist, brighton@sadc-gmi.org | |
| James Sauramba - SADC-GMI Executive Director, james@sadc-gmi.org | |

Field Code Changed

Field Code Changed

Country: SOUTH AFRICA**02 December 2021****09.00 – 10:19Hrs**

| Participant Name | Issues Raised |
|---|--|
| Shahkira Parker - Department of Forestry, Fisheries and the Environment email sparker@dffe.gov.za | <ol style="list-style-type: none"> 1. The proposed project is aligned with the RSA National Development Plan 2030, National Water Resources Strategy and the National Groundwater Strategy 2. Emphasis was given to accommodate irrigation efficiency in the project 3. The process of developing the TDAs and JSAPs for Ramotswa and Tuli-Karoo was an effective way of doing a comprehensive stakeholder identification 4. As part of the project implementation, it was recommended to engage the regional offices of the Department of Water and Sanitation 5. Moving forward, the capacity building component should also include a postgraduate academic programme for PhD and MSc students |
| Smangele Mqguba, Dept of Water and Sanitation, mqgubas@dws.gov.za | |
| Alinah Mthembu, Department of Forestry, Fisheries and the Environment. Chief directorate: Climate Change Adaptation | |
| Zira Mavunganidze -Climate and Environment Specialist - IFAD - z.mavunganidze@ifad.org | |
| Ernest Malatsi Department of Agriculture, Land Reform and Rural Development ErnestMAL@dalrrd.gov.za 012 8468560 /0660846101 | |
| Mr Ramusiya Fhedzisani, DWS RSA, ramusiya@dws.gov.za , +27 63 407 4021 | |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| Brighton Munyai - SADC-GMI Senior Groundwater Specialist, brighton@sadc-gmi.org | |
| James Sauramba - SADC-GMI Executive Director, james@sadc-gmi.org | |

Field Code Changed

Institution : ZAMCOM**02 December 2021****11:30 – 12:38Hrs**

| Participant Name | Issues Raised |
|---|--|
| Evans Kaseke - Programme Manager – Strategic Planning Zambezi Watercourse Commission (ZAMCOM) - evans@zambezicommission.org ; Mobile: +263772515587 or +263773214558 | <ol style="list-style-type: none"> 1. ZAMCOM and SADC-GMI signed an MOU which will allow smooth implementation of the project and the proposed project is aligned to the ZAMCOM strategic business plan 2. ZAMCOM has several other TBAs and the work that will be done in the Sand and Gravel Aquifer will serve as a pilot for the RBO on similar work 3. In addition to the National Focal Groups established by SADC-GMI, ZAMCOM will also avail the project the opportunity to be coordinated through the National Stakeholder Consultation Committees in Zambia and Malawi 4. Partnerships should be a critical vehicle for the project's implementation 5. The proposed project should also leverage on the investment initiatives provided for under PIDACC |
| Paxina Chileshe-Toe, Regional Climate and Environment Specialist, IFAD; p.chileshe@ifad.org | |
| Thokozani Dlamini - SADC-GMI, thokozani@sadc-gmi.org | |
| James Sauramba - SADC-GMI Executive Director, james@sadc-gmi.org | |

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