2021:9 Sida Decentralised Evaluation

NIRAS Sweden AB

# Evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2), second phase

Final Report

Sida

# Evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2), second phase

**Final Report**
**December 2020**

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**Sida Decentralised Evaluation 2021:9**
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# Abbreviations and Acronyms

| | |
|---|---|
| Agritex | Agricultural, Technical and Extension Services |
| APR | Annual Programme Report (PP2) |
| ARA-Centro | ARA-Centro, Regional Water Administration of Central Mozambique |
| BAGC | Beira Agriculture Growth Corridor |
| BUPUSA | Buzi-Pungwe-Save |
| DDC | District Development Coordinator |
| DNA | National Directorate of Water |
| DNGRH | Direcção Nacional de Gestão de Recursos Hídricos, National Directorate of Water Resource Management |
| EMA | Environmental Management Agency |
| FIPAG | Urban Water Supply Investment and Heritage Fund |
| GEF | Global Environmental Facility |
| GIS | Geographic Information System |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit, German Development Cooperation Agency |
| GoM | Government of Mozambique |
| GoZ | Government of Zimbabwe |
| INGC | Instituto Nacional de Gestão de Calamidades, National Disasters Management Institute |
| INAM | Instituto Nacional de Meteorologia, National Meteorological Institute |
| IUCN | International Union for the Conservation of Nature |
| IWLU | Integrated Water and Land Use |
| IWRM | Integrated Water Resources Management |
| IWRM&D | Integrated Water Resources Management and Development |
| MoF | Ministry of Finance |
| MoU | Memorandum of Understanding |
| MIREME | Ministry of Mineral Resources and Energy |
| MUPB | Management Unit of Pungwe Basin |
| OECD-DAC | Organisation for Economic Cooperation and Development, Development Assistance Committee |
| PP1 | Pungwe Basin Transboundary Integrated Water Resources Management and Development Strategy |
| PP2 | Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme |
| PSCC | Pungwe Sub Catchment Council |
| SADC | Southern African Development Community |
| SGF | Small-scale Grant Fund |
| SMDDS | Small and Medium Dam Development Strategy |
| WMO | World Meteorological Organisation |
| ZINWA Save | Zimbabwe National Water Authority Save Basin |

# Preface

This Evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2) was commissioned to NIRAS Sweden AB by Sida and the Embassy of Sweden in Ethiopia.

The evaluation has had two phases: in **the first phase** the evaluators conducted an initial review of the Programme and created a baseline and set indicators for the final evaluation to be held in 2020. The first phase took place from September to December 2017 and was conducted by:

· Svend Erik Sørensen, Team Leader, Institutional Development Expert

· Troels Kolster, IWRM Expert

· Wellington Dzvairo, IWRM Expert Zimbabwe

· Tjitske Leemans, IWRM Expert Mozambique

· Klas Sandström, Evaluator and IWRM Expert

Johanna Lindgren Garcia managed the review process at NIRAS Sweden. Mats Alentun and Gonçalo Carneiro provided the quality assurance. Annika Karlsson managed the evaluation at Sida.

**The second phase**, the final evaluation of the PP2, took place from September to December 2020 and was conducted by:

· Svend Erik Sørensen, Team Leader, Institutional Development Expert

· Troels Kolster, IWRM Expert

· Wellington Dzvairo, IWRM Expert Zimbabwe

· Helder Domingos, IWRM Expert Mozambique

Matilda Svedberg managed the review process at NIRAS Sweden. Mats Alentun provided the quality assurance. Erik Wallin managed the evaluation at Sida.

# Executive Summary

Sweden has supported joint management of water resources in the Pungwe River basin since 1998 when the preparation of a project for developing an integrated water resources management (IWRM) strategy for Pungwe was initiated by the governments of Mozambique and Zimbabwe with Swedish assistance through Sida.

A comprehensive programme (PP2) was initiated in 2007 with the following development objective:

*To strengthen relevant institutions, stakeholders and systems at all appropriate levels for the joint, integrated and sustainable management of water resources in the Pungwe River basin, and to stimulate and support appropriate development-oriented investments in the basin that contribute to poverty reduction and environmental sustainability.*

PP2 commenced in late 2007 and was completed in 2017 after various extensions. The PP2 constituted 4 main components with sub-components:

1. Institutional development (Staff development, Decentralisation, Stakeholder participation and Information and communication)

2. Poverty reduction (Pungwe Basin Investment Facility, Small-scale dam development, Small-scale IWRM and development grant fund - SGF)

3. Environmental protection (Salinity control, Gold panning management, Flood and drought management, Integrated water and land use development, Environmental flows)

4. Regional cooperation

The purposes of the evaluation of the PP2 were (i) to assess results, i.e. effectiveness, (ii) judge whether the institutions supported have a proper mandate and capacities to fulfil their missions, i.e. outcomes and sustainability, and (iii) to establish the degree to which poverty reduction and environmental protection have been achieved, and the impact on local communities. The evaluation has focused on three key evaluation criteria: Effectiveness, Sustainability and Impact.

The evaluation took place in two phases. The first phase took place in late 2017, in which a review was carried out and baseline indicators established and their values defined for a later evaluation. The review was presented in a 2018 report[1].

The second phase is the final evaluation and it took place from September to December 2020, three years after the completion of PP2. Sida's intention with this set-up has been to evaluate the sustainability and continued ownership of PP2 by the IWRM institutions in the two countries three years after the termination of the Sida support, i.e. ARA-Centro in Mozambique and ZINWA Save in Zimbabwe. The result of the final evaluation is presented in this report.

The approach and methodology chapter presents the evaluation questions, the methods and activities applied, and the sources for data collection – followed by a description of the limitations, risk assessment and mitigation measures. The description highlights, among others, travel restrictions on the international team and the impact of the pandemic on the implementation of the evaluation.

Based on the analysis of the developments covering the period 2017-2020 a *summary of the conclusions* was made from the findings, and then *compared* to the achievements made at the time of termination of the PP2 support in 2017. The result is presented in the below table. The tool for comparison is the 5-point Lickert scale.

**Effectiveness, Sustainability and Impact: Degree of achievement 2017 and 2020**

| ***OECD-DAC evaluation criterion*** | ***Degree of achievement, from 1 (low) to 5 (high): 2017*** | ***Degree of achievement, from 1 (low) to 5 (high): 2020*** |
|---|---|---|
| Effectiveness | 3,0 | 2,8 (2,76) |
| Sustainability | 1,5 | 3,0 |
| Impact | 2,0 | 2,0 |

To summarise the result of the comparison:

- Effectiveness has deteriorated slightly from 2017 to 2020 primarily stemming from lower scores in the Environmental protection component.
- As for Sustainability a clear tick-up was observed particularly due to both governments' strong efforts to effectuate decentralisation as well as an institutional overhaul of the regional water administration (ARA) structure in Mozambique.
- The Impact score for 2020 remains the same as for 2017 due to a mixed picture, including no take-ups of PP2 products (particularly strategies) by government and donors on the one side and the continuous strengths in the regional cooperation component and the small-grant fund model being duplicated, on the other.

The Effectiveness evaluation criterion score has emerged based on the assessment of each of the sub-component of the four components (Institutional development, Poverty

[1] https://publikationer.sida.se/English/publications/160414/evaluation-of-the-pungwe-basin-transboundary/

reduction, Environmental protection and Regional development). The result of this assessment is presented in the below table followed by a brief description and justification for each of the score. The assessment of the Sustainability and Impact criteria is presented after the Effectiveness criterion assessment.

**Effectiveness: Degree of achievement per sub-component, 2017 and 2020**

| ***Sub-component*** | ***Degree of achievement, from 1 (low) to 5 (high): 2017*** | ***Degree of achievement, from 1 (low) to 5 (high): 2020*** |
|---|---|---|
| ***Institutional development*** | | |
| 1. Staff development | 3,0 | 2,0 M ; 4,0 Z |
| 2. Decentralisation | 4,5 | 4,5 |
| 3. Stakeholder participation | 3,0 | 3,0 |
| 4. Information and communication | 4,0 | 4,0 |
| ***Poverty reduction*** | | |
| 1. Pungwe basin investment facility | 1,0 | 1,0 |
| 2. Small-medium dam development | 3,5 | 3,5 |
| 3. Small-scale IWRM&D fund (SGF) | 4,0 | 3,0 |
| ***Environmental protection*** | | |
| 1. Salinity control | 1,0 | 1,0 |
| 2. Gold panning management | 3,0 | 2,0 |
| 3. Flood and drought warning | 4,0 | 4,0 |
| 4. Integrated water and land use | 2,0 | 1,0 |
| 5. Environmental flows | 1,0 | 1,0 |
| ***Regional cooperation*** | 5,0 | 5,0 |

**Institutional development**

Staff development: The evaluation has concluded to give a score of 3,0 to the staff development subcomponent, equivalent to the 2017 score, while at the same time highlights that for ARA-Centro the score is 2,0 and for ZINWA Save 4,0. The reason being that, for ARA-Centro: it has suffered from reduction of staff, limited capacity building, a government freeze on recruitment, inadequate replacements structures and deterioration of staff conditions at decentralised level. As for ZINWA Save a stable staff condition has been strengthened, partly from improved condition for continuous educational opportunities for staff and capacity building strengthened from the establishment of the Runde training centre and collaboration with universities. The three new service centres have temporarily resulted in staffing issues for ZINWA Save.

Decentralisation: The evaluation has concluded to give a score of 4,5 to the decentralisation subcomponent, equivalent to the 2017 score. The reason being that a continuous strong decentralisation process has occurred in both countries and services by the local authorities have continued to the rural communities and the PP2 initiated small scale irrigation schemes (SGFs). Yet, some deficiencies resulted from the decentralisation have occurred at lower levels (e.g. Chimoio in Mozambique).

Stakeholder participation: The evaluation has concluded to give a score of 3,0 to the stakeholder participation subcomponent, equivalent to the 2017 score. The reason being that while no real positive development has occurred as regards dedicated efforts to engage vulnerable groups and women, general engagement in addressing increasing

and critical water conflicts amiably between involved parties, has proven effective. Violent cases have been avoided.

Information and communication: The evaluation has concluded to give a score of 4,0 to the information and communication subcomponent, equivalent to the 2017 score. The reason being that five indicators measured in 2020 were equivalent to the 2017 situation and availability of water management information to managers and other stakeholders had improved through the development and implementation of a communication strategy.

**Poverty reduction**

Pungwe Basin Investment Facility: The evaluation has concluded to give a score of 1,0 to the Pungwe Basin Investment Facility subcomponent, equivalent to the 2017 score. The reason being that Mozambique lacks willingness to invest in capital-intensive projects considered to be financially unsustainable, weighing strongly against a likely capacity of a merged ARA-Centro to provide the necessary monitoring functions to such a project.

Small-medium scale dam development: The evaluation has concluded to give a score of 3,5 to the small-medium scale dam development subcomponent, equivalent to the 2017 score. The reason being that in terms of progress, works have begun again on the Gorongosa dam, but other than that all other aspects remained status quo.

The small-scale IWRM grant fund (SGF): The evaluation has concluded to give a score of 3,0 to the SGF subcomponent, one score-point down from the 2017 score, at 4,0. The reason being that while positive socio-economic development was observed in several of the SGF projects prior to the occurrence of external events (the Idai cyclone and severe droughts) the response of the basin level IWRM system as a whole has shown its inability to guarantee sufficient shelter for the rural communities. While warning systems appear to work well mitigation measures for rural communities affected by droughts or floods have not been addressed effectively as is evident from the SGF field data collection (see Annexes 5 and 6).

**Environmental protection**

Salinity control: The evaluation has concluded to give a score of 1,0 to the Salinity control subcomponent, equivalent to the 2017 score. The reason being that no new initiatives have been implemented. However, ARA-Centro remains alert about the issue and is trying to secure funding for salinity control.

Gold panning management: The evaluation has concluded to give a score of 2,0 to the Gold panning management subcomponent, down one point to the 2017 score, at 3,0. The reason being that of the four demonstration projects implemented only one remains functioning by 2020 and no spin off projects have materialised. In addition, no new projects providing alternative livelihood options for gold miners have materialised and the two SGF funded alternate projects are not operational due to the armed conflict.

Flood and drought management: The evaluation has concluded to give a score of 4,0 to the flood and drought management subcomponent, equivalent to the 2017 score. The reason being that despite the flood forecasting model is not being operational and the two countries not meeting on a regular basis, the information flow via social media and other means has improved and in Mozambique communication has improved substantially via improved coordination with main stakeholders such as INGC.

Integrated water and land use development: The evaluation has concluded to give a score of 1,0 to the integrated water and land use development subcomponent, down one point to the 2017 score, at 2,0. The reason being that the Integrated Water and Land Use Strategy has not been updated and coordination has deteriorated between relevant authorities, i.e. ARA-Centro and provincial/district authorities due to different priorities.

Environmental flows: The evaluation has concluded to give a score of 1,0 to the Pungwe Basin Investment Facility subcomponent, equivalent to the 2017 score. The reason being that status quo prevails and the component still awaits external financing and implementation support from GEF and IUCN in order to progress in lieu of nationally financed efforts and lack of reaching bilateral agreements on specific environmental flow requirements.

**Regional cooperation**

The evaluation has concluded to give a score of 5,0 to the regional cooperation component, equivalent to the 2017 score. The reason being that the process of the establishment of Joint Water Sharing Agreements between Mozambique and Zimbabwe has been highly successful over the 2017-2020 period. With active and dedicated support of the two governments supported by donors two agreements have come to fruition during the period (Buzi and Save) and the BUPUSA Secretariat for the three basins is being planned and funded for 2021. This successful process can to a large extent be attributed the PP2s efforts to facilitate the agreement process at its initial stages.

**Sustainability**

The evaluation has concluded to give a score of 3,0 to the sustainability evaluation criteria, up 1,5 points compare to the 2017 score, at 1,5. The reason being that while the overall unsustainable nature of the ARA-Centro as found in the 2017 review persisted throughout the 2017-2020 period, including staff instability and underperformance, the *process* over the period towards strengthening the overall performance of the ARA-Centro (and the other four ARAs) is seen as significant improvements to sustaining the new and merged ARA-Centro. This particularly includes improved security of funding from the Ministry of Finance to the ARAs, and the merger of the ARAs into more effectively performing units servicing better water clients and manage better the hydrographical basin. As for ZINWA Save levies were significantly eroded by high inflation rates. However, the overall financial sustainability of ZINWA is not threatened.

## Impact

The evaluation has concluded to give a score of 2,0 to the impact evaluation criteria, equivalent to the 2017 score. The reason being that the IWRM related strategies produced during the PP2 have not been implemented to any significant degree nor been addressed or taken up by the two governments or donors. On the other hand, the regional cooperation component has with significant and speedy progress achieved huge impact. Likewise, the impact of the SGFs have been overall very positive and its model apparently duplicated, yet the positive impact was crushed by the Idai cyclone and droughts, the latter mainly in Zimbabwe.

## The Indicator-Baseline-Values Matrix

In 2017 the review team selected key indicators based on its findings at the time. A baseline was established for each of the project components and evaluation criteria, and values for the 2020 final evaluation were set. This evaluation has, based on its findings, identified factors that have influenced the matrix indicators (from baseline in 2017 to values in 2020) including those that have attributed to successfully or inadequately achieving the values set for 2020. The Matrix is presented in Chapter 3. The result of the assessment indicated that most of the indicators have remained at baseline value and have shown little progress but also few regressive trends. As such in line with the conclusions on achievements of the Effectiveness, Sustainability and Impact criteria.

## Recommendations

The team asked to which extent the recommendations provided in the 2017 review were taken into account, and if so, how and with what results – and what it meant in terms of giving the full picture of recommendations for the final evaluation. Therefore, an analysis of the 2017 recommendations was carried out and presented Chapter 6.1.

Based on the findings, conclusions, lessons learned and the 2017 recommendation analysis the evaluation proposes the following recommendations for Sida and for the two regional water institutions, ARA-Centro and ZINWA Save:

## Recommendations for Sida

1 Sida should take on the approach of dividing the evaluations of projects into two separate stages, the first at the termination of the project (a review) and the second stage three years after the review. Such an approach provides the advantages of observing and measuring developments over a longer period of time and a significantly better opportunity for assessing the impact of Swedish support.

2 Sida should realise that mainstreaming gender into large and complex (IWRM) projects may be less advisable. Rather specific projects or components with assigned budgets and focused objectives and outputs for empowering women are more likely to be effective. The larger project will, if successful, benefit farmer families and communities, thus also women.

3 Sida should when engaged in designing comprehensive and institutionally complicated (including transboundary) IWRM projects apply a high degree of flexibility as regards budgetary allocations for easier to swop between components as these may advance distinctly differently as the project develops.

4 Sida should focus on strengthening the core business of beneficiary organisations (ARA-Centro and ZINWA Save), and not include themes or activities that are outside their mandate or sphere of control.

5 Sida should concentrate on a smaller number of activities with greater potential for impact, and combine interventions targeting the organisations' strategic mandates, capabilities and planning with investments in the implementation of concrete measures. When doing so, it is important to avoid overloading the beneficiaries' staff with additional tasks for which the organisation does not have the capacity.

6 Sida should carry out a more effective monitoring and supervision of programme implementation, using processes and tools as simple as possible for monitoring progress and measuring achievements.

7 Sida should reconsider channelling funds through a national financial system of partners when complications and significant delays are associated with such practice.

**Recommendations for ARA-Centro and ZINWA Save**

**Human resources, marketing, strategies and management**

8 Both organisations should prioritise human resource development and management. The institutional overhaul of the ARAs and the merger process of ARA-Centro and ARA-Zambeze should bring in an update of human resources strategies while addressing new internal communication challenges. ZINWA Save must address its human resource deficiencies (especially in hydrology) in connection with devolution of staff to the new service centres.

9 Both organisations should initiate marketing and public relations efforts to explain clients what they are doing and why clients are requested to pay for the services provided. As such information products and communication channels should be further improved to suit different target groups.

10 Both organisations should consider to hold annual peer reviews on activities carried out in the Pungwe basin and establish key performance measurement on progress for activities agreed to.

11 ARA-Centro should prioritise developing a strategy to deal with projected future water scarcity caused by large agricultural investment projects in the Pungwe basin.

12 ZINWA Save should prioritise developing specific strategies to source maintenance parts e.g. logger batteries to ensure that data is collected continuously. Sourcing should come from local suppliers avoiding foreign currency use to import any parts.

**SGFs / rural communities and associations**

13 Both organisations should prioritise to collaborate with relevant national and local authorities on how best to support farmers and rural communities in their coping with the results of floods and droughts in their localities – in terms of protecting their assets from destruction, including irrigation machinery and equipment, and agricultural produce, through for example increasing the number of small- and medium dams.

14 Both organisations should agree to develop an operation manual for the SGFs. This must also highlight operating pressure, quality of components recommended and the planned and scheduled maintenance of all equipment and reticulation to reduce unforeseen challenges, such that burst water pipes are eliminated.

15 In the support of the PP2 established SGF projects close collaboration between all the parties involved should be continued and sharing responsibilities as per MoU contracts. This could include, for example, technical support for more effective agricultural practices, ensuring benefits for disadvantaged groups in the project areas, and identifying funding mechanisms, such as micro-finance.

16 Both organisations should consider instigating competition among SGF supported farmers and rural communities to facilitate improved IWRM practices. The successful irrigation competitions held by the Department of Irrigation in Zimbabwe could be an inspiration.

**Investment, monitoring network and data management**

17 Both organisations should prioritise investments in equipment and focus on expanding and maintaining their monitoring networks, including water quality and flood and drought monitoring equipment.

18 Both organisations should prioritise the improvement of the rainfall network in order to improving the flood warning system, and coordinate with national meteorological institutes, who should take the lead in this endeavour.

19 Both organisations should consider contracting an information technology specialist to maintain information management systems and/or databases.

20 ARA-Centro should prioritise the implementation of the groundwater monitoring network improvement plan; currently only 3 boreholes are operational.

21 ARA-Centro should prioritise improving cooperation with water relevant partners such as the water utility FIPAG in terms of water demand monitoring.

22 ZINWA Save should prioritising investing in and maintaining an adequate data management system in line with the nationally-adopted database and management platforms, i.e. Hydstra or similar.

23 ZINWA Save should prioritise the mapping of flood risk areas under the Civil Protection Unit, which would require investments in flood modelling software to

produce more targeted flood models. This would provide data such as flooding extent and water depth or water velocity that are essential in providing data for flood risk management.

24 Both organisations should engage local communities in understanding the importance of monitoring equipment, and have data obtained from the measuring devices to be re-packaged and shared at local level to show the importance of having such monitoring gadgets. Currently data is shared with government entities only.

# 1 Introduction

## 1.1 BACKGROUND

Sweden has supported joint management of water resources in the Pungwe River basin since 1998 when the preparation of a project for developing an integrated water resources management (IWRM) strategy for Pungwe was initiated by the governments of Mozambique and Zimbabwe with Swedish assistance through Sida (PP1).

At the same time as the PP1 was finalised in 2006 the preparation of a comprehensive programme (PP2) was initiated based on the result of that strategy. The development objective of PP2 was as follows:

*To strengthen relevant institutions, stakeholders and systems at all appropriate levels for the joint, integrated and sustainable management of water resources in the Pungwe River basin, and to stimulate and support appropriate development-oriented investments in the basin that contribute to poverty reduction and environmental sustainability.*

Five components were identified to meet the objective:

1. Institutional development (with a focus on the two IWRM institutions, ARA-Centro in Mozambique and ZINWA Save in Zimbabwe)
2. Stakeholder participation
3. Information and communication systems
4. Pungwe basin investment facility
5. Critical development projects

Component 5 comprised seven critical development projects:

- Salinity control
- Gold panning management and mitigation
- Flood and drought warning and mitigation
- Sustainable environmental flows in Gorongosa National Park and Lake Urema
- Small and medium dam development strategy
- Integrated water and land use strategy
- Small scale integrated water resources management and development (IWRM&D) grant fund (SGF)

PP2 commenced in late 2007 with an intended period of five years, but due to delays in the inception phases extended to the end of 2013. This programme configuration remained intact up till the end of 2013, but was subsequently restructured during a three-year extension period from 2014 to 2016. While keeping the original development objective the components were redefined as follows:

1. Institutional development
2. Poverty reduction
3. Environmental protection
4. Regional cooperation

The restructuring also included a reshuffle of critical development projects.

The purposes of the evaluation of the PP2 were according to the Terms of Reference (ToR) (Annex 1):

(i) to assess results, i.e. effectiveness,
(ii) judge whether the institutions supported have a proper mandate and capacities to fulfil their missions, i.e. outcomes and sustainability,
(iii) to establish the degree to which poverty reduction and environmental protection have been achieved, and the impact on local communities.

The evaluation took place in two phases. The first phase took place in late 2017, in which a review was carried out and baseline indicators established and their values defined for a later evaluation. The review was presented in a 2018 report[2]. For reasons of clarity the report will be referred to in this document as the 2018 review report.

The second phase is the final evaluation and took place from September to December 2020, three years after the completion of PP2. Sida's intention with this set-up has been to evaluate the sustainability and continued ownership of PP2 by the IWRM institutions in the two countries three years after the termination of the Sida support. The result of the final evaluation is presented in this report.

In order for the reader to have the full benefit of reading this report it is recommendable to be familiarized with the content of the 2018 review report. Yet, this report can be read and understood on its own premise without any prior knowledge of the content of the 2018 review report.

## 1.2 APPROACH AND METHODOLOGY

### 1.2.1 EVALUATION QUESTIONS

The evaluation purpose has been outlined in the ToR for the assignment. It focuses on assessing sustainability and impact of project results. The main evaluation questions were to assess to which extent the PP2 contributed to more sustainable management and development of water resources in the Pungwe basin and to enhancing the collaboration between the two countries as well as to which extent poverty reduction and environmental sustainability were achieved and the impact this has had on the local community, including marginalised groups.

[2] https://www.sida.se/Svenska/publikationer/160414/evaluation-of-the-pungwe-basin-transboundary/

Broken down and referring to the ToR, the evaluation questions addressed were as follows applying the OECD-DAC evaluation criteria:

Relevance: Had the programme conformed to the needs and priorities of stakeholders and target groups?

This question was analysed in the 2018 review report concluding that the PP2 was designed in accordance with both countries' and international policies and beneficiaries needs, giving Relevance a high score. Following the Inception Note Relevance has not been a subject of this final evaluation part but has been briefly addressed in the Matrix evaluation tool (see Chapter 3).

Efficiency: Can the costs for PP2 be justified by its result.

This question was analysed in the 2018 review report concluding that "flaws in and incompatibility of systems are to be expected and cause delay in the release of funds when national financial systems are used for funding a programme of the scale of PP2.". Efficiency was given a low score. Efficiency has not been a subject of this final evaluation part as Swedish funds have not been involved in any financial transactions in any of the PP2 components since 2017.

Effectiveness: Has the PP2 achieved its objectives?

Sustainability: Has there been a continuation or longevity of activities and results of the PP2 after its completion?

Impact: What are the long-term effects of PP2, positive and negative, intended and unintended?

*Effectiveness, sustainability and impact have been the main focus of this final evaluation part.* In addition, the ToR highlighted 'particular important' questions to be addressed. These were:

- Has Swedish support contributed to sustain poverty reduction in the Pungwe basin and what is the impact of this poverty reduction?
- Which socio-economic groups have participated in PP2 and how have different groups benefitted from the PP2 results?
- To what extent have marginalised groups participated and how have they benefitted from the programme results?
- Have women, men, girls and boys participated equally in the PP2 and have they benefitted equally from programme results?
- Has Swedish support contributed to improved water quality (or reduced the deterioration of water quality) and, if so, how has this impacted the local communities and who has benefitted?
- Has the institutional capacity been sustainably enhanced and, if so, has this allowed for effective and co-creational decision-making among stakeholders, as well as implementation of these decisions?

- Has the collaboration between the two countries and among different stakeholders, been sustainably developed, and has it been effective in fulfilling the overall objective of the programme?
- Has there been any replication of methods, ambitions and/or scope in other basins as a result of the programme?

The perspective in answering the above evaluation questions has been to view them from the point of what has been observed *three years after the termination of the PP2* as *compared* to the status of the 2017 situation. All questions have been addressed in this report.

### 1.2.2 METHODS AND ACTIVITIES

Based on the above and the results of the review undertaken in 2017 a Concept Note was prepared and approved by Sida in September 2020. An Inception Note (Annex 2) was subsequently drafted outlining the approach and implementation methodology for the evaluation, its limitations, risks assessment and mitigation, as well as a work plan. It was emphasised that since Sida terminated its support to the PP2 in 2017 the assessment of relevance and efficiency was not to be addressed and that focus would be on effectiveness, sustainability and impact of the results of the PP2 from 2017 to 2020, fully in line with the ToR for the evaluation.

The evaluation captured an all-encompassing approach that aimed at assessing and measuring performance of project results over time and in context. This was done by adopting the following methods and activities:

1 The period from April 2017 to mid-2020 constitutes 3 years between the completion of the review phase and the final evaluation. Developments that have occurred during this period may have influenced the manner in which the results of the PP2 have been made use of by various stakeholders. This includes questions such as: What have been the main changes over the period? – institutional, political, social, economic, environmental, etc. This gave the team a valid context within which the two key institutions, ARA-Centro and ZINWA Save, have been able to execute their work and mandate.

Developments observed during the period 2017-2020 included policy and macro-economic changes in both countries, including accelerated decentralisation processes, and climatic changes, including the cyclone Idai and severe droughts, and the continuation of armed conflicts. These developments have been addressed in context of the analysis and not as separate headings in the report.

2 The Indicators-Baseline-Value Matrix is the key evaluating tool addressing the key evaluation questions. In 2017 the review team selected key indicators based on its findings at the time. A baseline was established for each of the project components and evaluation criteria, and values for the 2020 final evaluation were set. This evaluation has, based on its findings, identified factors that have influenced the matrix indicators (from baseline in 2017 to values in 2020) including those that have attributed to

successfully or inadequately achieving the values set for 2020. The result of the Matrix is presented in Chapter 3.

Concurrently, the team asked to which extent the recommendations provided in the 2017 review were taken into account, and if so, how and with what results – and what it means in terms of giving the full picture of recommendations for the final evaluation. The recommendation analysis is presented Chapter 6.1.

3. In order for the team to answer the evaluation questions our analysis took point of departure in the following sources for data collection and measurement:

A The 2018 Review Report: The report was subject to an in-depth scrutiny of its findings, conclusions and recommendations. All main issues raised in the report were analysed and questions raised on progress and developments over the last three years. *This work was critical for preparing relevant questions to stakeholders and design of a questionnaire*.

An introduction letter and the questionnaire were sent to the directors of the two institutions on 19 October 2020 for them to prepare answers over the following weeks. Remote interviews with the directors and management of the two institutions took place for ARA-Centro on 28 October 2020 and for ZINWA Save 30 October 2020.

B Written documentation: Business plans and annual reports of the two key institutions, ARA-Centro and ZINWA Save, as well as key policy documents on basin developments were at the core of written sources to assess/review. As expected, and pointed out in the Inception Note, accessibility was limited, yet some key policy documentation was provided concerning the merger of the ARAs in Mozambique and otherwise key information was provided to the team verbally (List of documents reviewed, Annex 4).

C Field work and interviews were carried out to a selected number of projects that received small scale irrigation scheme funding (SGFs) from PP2. Interviews and questions were based partly on the findings derived from the analysis of the sources under (A) and (B) above and partly from the questionnaire format used during the review in 2017 and presented in the 2018 review report as annex D, E, F and G. Field visits were carried out in both countries at the end of October and beginning of November 2020. Details of the field visits are presented in annexes 5 and 6.

### 1.2.3 LIMITATIONS, RISK ASSESSMENT AND MITIGATION

The evaluation team was faced with limitations due to the current pandemic – particularly the inability of international consultants to do field work for data collection. Furthermore, one of our two local consultants from the first field mission was not available. For consistency in data gathering and reliability of assessing sustainability and impact, the work should have included visits to the *same places* and meeting as many of the *same people* as possible as during the 2017 field work. Given the new circumstances this overall approach was not entirely feasible.

This was the second stage of the evaluation and our consultants were already well familiar with the overall situation and conditions of the IWRM of the Pungwe Basin. This enabled the team to have a relatively strong point of departure for assessing data that would not have been possible if a completely new team was launched for a final evaluation.

Few cases of Covid-19 in Mozambique and Zimbabwe were observed during the field work and domestic restrictions have been limited. This situation remained stable throughout the evaluation period. Our local consultants conducted in-person interviews, taking the necessary safety precautions.

The Gorongosa District in Mozambique was defined as a risk zone due to tensions between the government and the opposition. Field visits to Gorongosa District to assess the SGFs the team visited in 2017 were therefore not possible.

Access to documentation was a challenge as mentioned above and the limitation further accentuated by the fact that while ZINWA has a website no document subfolder existed and ARA-Centro does not even have a website from where basic information or data could be extracted.

Most of the staff of the ZINWA HQs that participated under PP2 were still available though there have been some changes, including the appointment of a new director in mid-2020. At Save Catchment most of the management and staff were still available. At the ARA-Centro, changes in top management occurred only recently and we interviewed the director-in-charge over the last 3 years. Overall, that left the team with an important source that showed institutional memory from the PP2 years, an advantage experienced during the remote interviews with the management of the two institutions.

### 1.2.4 STRUCTURE OF THE REPORT

Following the Introduction (Chapter 1) covering the background to the evaluation and the approach and methodology of the evaluation, the Findings (Chapter 2) are presented. The chapter includes the analysis of the three main evaluation criteria in three separate chapters: Effectiveness in Chapter 2.1, Sustainability in Chapter 2.2 and Impact in Chapter 2.3. The Effective chapter is divided into the four PP2 component and sub-component and analysed separately.

The Indicator-Baseline-Values Matrix is presented in Chapter 3 followed by the Conclusion on achievement (Chapter 4) which presents the scores of the comparison between the assessment results of the 2017 review and the progress on achievements over the 2017-2020 period. Chapter 5 presents the lessons learned followed by recommendations in Chapter 6. The latter chapter is divided in the assessment of application of the recommendations made in the 2017 review (6.1) followed by the final recommendations for Sida (6.2) and for the two regional water institutions, ARA-Centro and ZINWA Save (6.3).

Annexes comprises the Terms of Reference for the evaluation (Annex 1), followed by the Conception Note (Annex 2). List of People met or Interviewed, and List of

Documents reviewed are presented in Annexes 3 and 4, respectively. Comprehensive data and information are presented on the field visits undertaken by the team to selected SGF projects in the two countries, in Annex 5 for Mozambique, and in Annex 6 for Zimbabwe.

## 1.3 PUNGWE RIVER BASIN

The Pungwe River stretches for 400 kilometres, flowing eastwards from Zimbabwe's Eastern Highlands, through Manica and Sofala Provinces in Mozambique, to the Indian Ocean at Beira (Figure 1). The main river and its tributaries drain a total catchment area of 31,151 square kilometres, of which approximately 5% is within Zimbabwe and 95% in Mozambique. Nonetheless, the Zimbabwean part of the basin is estimated to produce between 25 to 30% of the natural runoff. Where the river starts in the west, there is a humid mountainous climate with relatively lower temperatures and mean annual rainfall above 2000 mm. In the eastern region, especially near Beira, the climate is tropical humid with high temperatures and average monthly rainfall varying from 300 mm in February to 20 mm in September. These characteristics, among others, account for significant annual variations in the Pungwe's perennial flows, contributing to recurring periods of flooding and drought. In the absence of major dams, but also of small and medium dams especially on the Mozambican side of the basin, the negative impacts of floods and droughts are difficult to control and mitigate. The lack of hydraulic infrastructure also limits the capacity to utilise the available water for agricultural development and other economic activities. PP2 represented an endeavour by both governments, with support from Sida of SEK 117 million (equivalent to approx. 11,5 mill Euro), to address key social, economic, environmental and institutional challenges in the Pungwe River basin.

**Figure 1. Pungwe River Basin**

# 2 Findings

## 2.1 EFFECTIVENESS

The effectiveness assessment has followed the structure devised from the analysis undertaken during the 2017 review which related to the implementation of the main PP2 components. As such the effectiveness assessment cover four main headings, namely, Institutional development, Poverty reduction, Environmental protection and Regional development.

The Institutional development component analysis includes the following sub-headings: staff development, decentralisation, stakeholder engagement, and information and communication.

The Poverty reduction component analysis includes the following sub-headings: the Pungwe Basin Investment Facility, Small and medium dam development, and Small scale IWRM&D grant fund (SGFs).

The Environmental protection component analysis includes the following sub-headings: Salinity control, Gold panning management and mitigation, Flood and drought, Integrated water and land use strategy, and Environmental flows.

The Regional cooperation component has a sole focus on the establishment of joint water agreements between the two countries.

### 2.1.1 INSTITUTIONAL DEVELOPMENT

#### a) Staff Development

Review assessment of 2017

The review assessment of 2017 summarised the result of the staff development component of the PP2 and scored it on a scale of 1-5, as follows:

| **Institutional Development Component: Staff development – 3,0** |
|---|
| While the capacity of ARA-Centro and ZINWA Save staff has improved significantly as a result of the large capacity building support, ARA-Centro staff have underperformed and PP2 did not manage to address effectively the causes behind the underperformance, despite the steps taken to address work ethics and the lack of motivation. It is most likely that other structures external to PP2 have influenced the underperformance. Insufficient assessment and documentation of the effects of the capacity building support provided by PP2 was a significant shortcoming in the management of PP2. It would have been necessary to devise a simple results measurement system for ARA-Centro to ensure that the training represented good value for money. |

Development 2017-2020

Little has changed regarding staff development in ARA-Centro since 2017. ARA has lobbied for approval of an internal regulation that gives it autonomy to control the use of funds, including for salaries and staff benefits. No progress has been observed. However, there was an increase of salary over the period while the number of staff have decreased. This was due to the annual salary upgrade approved by the Government and some changes to staff categories allowed by the Council of Ministries. The Motivation and Retention Strategy drafted during the PP2 is still valid but is not implementation.

Since 2017 the Government has imposed a freeze on staff recruitment in public sector institutions and vacancies cannot be filled with new appointees. A so-called 'mobility' approach has been adopted by the Government: in these situations, for example, staff can be seconded from other ARAs or government departments to perform tasks in ARA-Centro, when needed. Previously it was not possible to transfer technical or financial resources from one ARA to the other. Also, a new rule has been introduced: if 3 employees leave positions one person can fill in.

In the period 2017-2020 there has been a 'decrease of overall performance' of ARA-Centro, according to the management. This has derived from a variety of factors, including the following: (i) the governments general financial situation[3], including the continuous recovery from the so-called hidden debt crisis[4], (ii) the on-going armed conflict in the country[5] (iii) limited operational activities of ARA-Centro, (iv) the staff development strategy not being implemented – and the fact that (v) there has been a gradual turn-over of staff since 2017 – with no replacements. For example, in 2019 three staff members left ARA-Centro for other job opportunities offered in the public system, one retired and one passed away.

3 "The pandemic presents a further setback on the country's economic prospects. The pandemic dims the short-term growth prospects of Mozambique. The COVID-19 crisis will have a heavy impact on economic activity as social distancing and travel restrictions (domestically and globally) affect demand for goods and services. At the same time, reduced demand and prices of commodities are slowing the pace of investment in gas and coal, two key industries for Mozambique. With this, growth is expected to decline to 1.3% in 2020, down from a pre-COVID forecast of 4.3%, with significant downside risks. Mozambique is also expected to experience large external and fiscal financing gaps in 2020 and 2021 in a context characterized by exposure to external shocks and limited fiscal space." https://www.worldbank.org/en/country/mozambique/overview

4 "In 2016, Mozambique's track record for high growth was disrupted when large, previously unreported external borrowing came to light. The revelation of undisclosed debt dented confidence in the country, increased debt levels, and more than halved the average rate of growth." https://www.worldbank.org/en/country/mozambique/overview

5 "A new peace accord was reached in August 2019, and has been violated several times by a Renamo breakaway military faction known as Military Junta. The new peace deal aimed at achieving greater pacification of the country by integrating Renamo residual fighters into the national army, and dismantling Renamo military bases splattered around the country. Meanwhile, the government is grappling with another so-called Islamic insurgency in parts of the gas-rich province of Cabo-Delgado. Initially circumscribed to one locality, the indiscriminate killing of civilians perpetrated by the insurgents has now spread to other districts and towns in the province. Recently (March 2020) the rebels attacked and occupied successively the transport hub rural town of Mocimboa da Praia and the town of Quissinga. Recent estimates show the conflict has killed more than 1,000 people and forced 100,000 from their homes. The risk that violence can spread to other areas of the country should not be underestimated." https://www.worldbank.org/en/country/mozambique/overview

There has been no major donor long-term engagement with ARA-Centro since PP2 terminated in 2017. Donors and government have provided financial and technical support to ARA-Centro HQs in connection with severe damages resulted from the cyclone Idai in March 2019. The Government established the Post-Cyclone Idai Recovery Office that was to financially assist, coordinate and monitor the reconstruction process. However, it was only one year later, by mid-2020, that the technical team of ARA-Centro was able to make a detailed survey of the exact damage that was done in Buzi District – financially supported by the Dutch Blue Deal project. That project also financed the rehabilitation of ARA-Centro HQs office and the replacement of parts of the hydro-climatological network which was destroyed by the cyclone. In the districts of Buzi and Nhamatanda the damages were severe. As for the latter district some cases are described in Annex 5.

There have been no significant skills upgrading programmes for the staff of ARA-Centro HQs and the decentralised entity, Chimoio; yet, government continuously provides opportunities for training of staff. The World Bank has provided some training to technicians for improved monitoring capacity as well as means of transportation. At the same time Chimoio has been forced to vacate its office facility due to failure of paying rent. Current working conditions of staff are poor. Portions of fees collected by Chimoio may be used for constructing a new office facility for the staff.

There has been no focused staff development in ZINWA Save, just like during PP2. However unlike during the PP2, ZINWA now allows its staff to attend higher level courses at their own expenses. This has motivated staff to stay in ZINWA and upgrade themselves, achieving academic degrees, for example in accounting or in technical fields. In September 2020 ZINWA Save opened its own training centre located in Runde catchment and initiated collaboration with national and international universities. Also, the HR Strategy seems still to be valid and concurrently updated to address emerging needs and structural changes. There is still no plan/structure in the institutional set-up that monitors and evaluate the effect of capacity building conducted.

Staff from ZINWA Save has since 2017 been decentralised to 3 new service centres in ZINWA Save catchment, and recruitments of new staff is currently in process covering almost all categories, including engineers, technicians and operators (cost derived from own revenues) and extensive training is carried out to service centre leaders and staff, e.g. in catchment management, GIS, water supply, etc. Apart from the devolution of staff the central workshop at ZINWA HQs has been closed and workshops been constructed in each of the three service centres. The hydrology section is understaffed.

Conclusion

While steps have been taken to improve staff situation in ARA-Centro since 2017, a continuous limited autonomy, reduction in the number of technical staff, Government freeze on staff recruitment and inadequate replacement structures when staff leaves – all has contributed to at best a status quo against the 2017 situation but rather a deterioration of the overall staff conditions for staff of ARA-Centro. Several external factors (armed conflicts, macro-economic situation of Mozambique, etc.) have accentuated the situation further. The Idai cyclone damaged the ARA-Centro HQs and the Chimoio office has been vacated and staff conditions thus deteriorated. Training

and capacity development have been meagre and mainly performed on an ad hoc basis. No effect assessment structures have developed or applied for capacity building.

As for Zimbabwe the situation has developed somewhat different. Now allowing staff to upgrading their skills to higher academic degrees has facilitated a stable staffing situation. Most of the staff and management from 2017 are still within ZINWA Save and the subcatchment council giving stability and providing institutional memory. Recruitments and capacity building have been at the focus of ZINWA, i.e. a training centre has been established and with the 3 new service centres capacity building has been intensified and new staff employed.

## b) Decentralisation

Review assessment of 2017

The review assessment of 2017 summarised the result of the decentralisation component of the PP2 and scored it on a scale of 1-5, as follows:

| **Institutional Development Component: Decentralisation – 4,5** |
| --- |
| The decentralisation process was effective for implementing the water resources management policy at the lowest possible level. The training of staff combined with the procurement of necessary equipment ensured that the decentralised units (including MUPB Chimoio and the stakeholder groups) became operational. The decentralisation efforts also facilitated the engagement of local authorities. Together with the decentralised unit, local authorities will play an important role in the forthcoming support to the people of the basin now that PP2 funding has terminated. |

Development 2017-2020

The on-going decentralisation reform process in Mozambique implies the strengthening of the capacity of central government institutions to steer the decentralisation efforts and concurrently strengthen the decentralised units of government in the provision of infrastructure and local services.[6]

This policy seems to be implemented, as regards the regional water institutions, through

1. the centralisation of the funding of the ARAs in which disbursement of funds for the ARAs are directly channelled from the Ministry of Finance (away from disbursement through the provincial level previously practiced)
2. the merging of the 5 ARAs into 3 ARAs for improved operational effectiveness through, among others, ‘economies of scale’. The merger is discussed in details in the Sustainability section.

6 https://www.worldbank.org/en/news/press-release/2020/06/26/world-bank-announces-117-million-to-strengthen-mozambiques-urban-development

The Chimoio office is the main decentralised entity of ARA-Centro. Its main responsibilities include collecting fees, monitoring water quality and manage operation and maintenance of the water equipment and network.

Regarding the fee collection the Chimoio office have taken steps to work more efficient and effective since 2017. For example, Chimoio now requests water clients/users to pay for services delivered electronically to ARA-Centro's bank account, replacing ARA-Centro/Chimoio staff physically collecting fees. Logistics and staff expenses have subsequently been reduced using less motorised means of transportation. So far, the system has been of mixed experience – some clients are paying using the system, others do not.

Other issues remain as problematic as before 2017. This includes, among others, the issuance of license permits for water use and fines. The former is, in some cases, issued on clients request to ensure a bank loan but then the client never pay for the licence; in case of the latter ARA-Centro/Chimoio is in most cases not able to enforce payments of fines issued.

The water user database was in need of upgrading as observed by the 2017 review. With Dutch financial and technical supports a software programme is being developed and to be completed by end year 2020 and should particularly improve the management of water licensing.

The Chimoio office is understaffed and employs 2 technicians, 2 IWRM engineers and one responsible for planning and human resources – a total 5. As mentioned above the Chimoio office has been vacated and staff is now placed in other public offices in Catandica, in Báruè District.

Since 2013 ZINWA has had a decentralised system in operation. From 2017 there has been a focus to increase the presence of ZINWA in communities as regards water supply management in order to increase revenue. So, since 2017 ZINWA has further decentralized its water management and workshops to the district level. i.e. new service centres have been established to cater for improved water supplies. Most of the staff are housed in Mutare and have been located in the 3 service centres for Save i.e. Birchenough, Rusape and Nyanga, while some core functions remain in the ZINWA HQs. The boundaries of the service centres tend to follow district boundaries rather than catchment and subcatchment boundaries. ZINWA still comprises seven catchments and 47 sub-catchments.

<u>Conclusion</u>

The decentralisation reform process in Mozambique has improved the general conditions for the regional water institutions, the ARAs. Disbursement of funds now are directly transferred from the Ministry of Finance to the ARAs bypassing the provincial level. The 5 ARAs are now being merged into 3, which aims to improve the operational effectiveness of the integrated water resources and basins in the country. The effect on the Chimoio office of the decentralisation process is not clear. The Chimoio office is understaffed and have currently no office, still struggles with fee collection (while some steps have been taken to digitalise the system), issuance of

licenses and fines collection. Dutch donor support should improve the performance these systems.

ZINWA Save has since 2017 further decentralized its water management and workshops to the district level. i.e. three new service centres have been established to cater for improved water supplies and fee collection.

## c) Stakeholder Participation

Review assessment of 2017

The review assessment of 2017 summarised the result of the stakeholder participation component of the PP2 and scored it on a scale of 1-5, as follows:

| **Institutional Development Component: Stakeholder participation – 3,0** |
|---|
| The design of PP2 focused strongly on stakeholder participation as a key prerequisite for successful implementation. Despite the creation of many stakeholder groups, efforts and focus were insufficient for mobilising and supporting vulnerable groups and women. As was the case with the staff development in ARA-Centro and ZINWA Save, the lack of assessing and documenting the impacts of the capacity building support provided to those stakeholder groups was an important limitation to understanding the broader effects within this component. ARA-Centro and ZINWA Save supported a 'face-to-face' approach to resolving water resources conflicts in the basin, something that was regarded by most stakeholders as very useful and successful. |

Development 2017-2020

The ARA-Centro management assumed that living conditions among many farmer associations supported during PP2 have remained to the upside since 2017, including the taking care and involvement of vulnerable groups and addressing gender issues. This claim was however not verified from the data collected from the field visits to the SGF projects undertaken by the evaluation team. A similar situation was observed in Zimbabwe, where focused efforts on strengthening the influence of vulnerable groups and women on developments was absent. Also, there has been no serious efforts to take on further capacity building of these groups and no monitoring and effect assessment made.

According to the management of ARA-Centro there has been an *increase* in the number of water conflicts. Particularly two types of conflicts have emerged: water shortage due to drought and pollution from mining companies in which farmers mainly complain on reduced water quality. As observed during the 2017 review conflicts were solved with positive results through on-site and voluntary arrangement between involved parties. The ARA-Centro management team mentioned that most conflicts today are solved in similar manner with success.

In Zimbabwe the Pungwe Subcatchment Council (PSCC) and ZINWA Save together attend to all water disputes and to illegal mining activities in Nyamukwarara area. Due to the drought experienced over the past couple of seasons countrywide water conflicts have been on the rise. Illegal abstractions have mushroomed in the basin, estimated at 30%.

The Council has identified areas for the construction of common water sources for users as one of the solutions to the conflicts. This solution has at the same time enabled the Council to properly schedule water use, monitor usage and levying, and protect head waters where almost every water user is advancing to. Through this common water point system, they also intend to create transfers from points of higher water yields. The main SGFs that have been affected by a combination of illegal abstractions and persistent droughts were observed in Butsi, Rujeko, Chidzinzwa, Kushinga and Nyamukowero.

Conclusion

Efforts to support and strengthen the influence of vulnerable groups and women into decision-making processes of water related activities has not occurred since 2017. As was the case during the PP2, no serious steps have been taken to mobilising these groups. The situation is the same for both countries.

There has been a significant increase in both countries in the number of water conflicts caused by severe water shortage and pollution from mining companies. The water shortage caused by several seasons of droughts (particularly in Zimbabwe) has caused a dramatic increase in illegal abstraction of water and intensified water conflicts and their numbers. Mediation and on-site arrangements and, in Zimbabwe, constructions of common water sources for users, have been applied apparently successfully as solutions to the conflicts.

## d) Information and Communication

Review assessment of 2017

The review assessment of 2017 summarised the result of the information and communication component of the PP2 and scored it on a scale of 1-5, as follows:

| **Institutional Development Component: Information and communication – 4,0** |
|---|
| There seems to have been a main focus on improving the surface water network which is justifiable given the importance of surface water resources. However, not enough effort has been invested into improving the water quality network, with possible detrimental effects particularly on ARA-Centro's capacity to manage the environmental sustainability of the basins. It may be argued that despite the low production of the Pungwe basin aquifers, more attention could have been paid to improving the groundwater monitoring network |

Development 2017-2020

*(i) Water quality*

Deterioration of water quality continues according to ARA-Centro and stakeholders to be the main problem in the basin, while water availability remains a minor issue. During PP1 and at the start of PP2 water quality was identified as one of the main issues to be addressed especially in relation to water pollution (mercury and suspended sediments from artisanal gold panning).

ARA-Centro has not constructed the planned water quality laboratory due to lack of funds and continue to only collect and analyse basis samples from the strategic monitoring network using the following five parameters:

- pH
- temperature
- electrical conductivity
- dissolved oxygen
- turbidity (used for indirectly calculation of total suspended solids)

According to the Pungwe Joint Water Agreement between Mozambique and Zimbabwe ARA-Centro should be monitoring at least the additional 12 parameters on a regular basis:

- Alkalinity
- Biological Oxygen Demand
- Chemical Oxygen Demand
- Chloride
- Coliforms
- Conductivity
- Nitrate
- Nitrite
- Phosphates
- Sodium
- Sulphates
- Total Dissolved Solids

The five parameters measured does not constitute an adequate monitoring of river water quality. Also, in relation to the targets set in the bilateral agreement the current system is deficient when considering the pollution sources in the basin, i.e. gold mining and farming. ARA-Centro still does not have a laboratory for water sample analysis and parameters such as heavy metals (mercury and lead), faecal coliform, phosphorus and nitrate are not measured regularly to identify possible source contamination from the above-mentioned pollution risk factors.

The planned 2018 decree that was supposed to regulate illegal effluent discharges has not been approved, which leaves ARA-Centro without the necessary legal handle to address the situation. Currently, the decree is being analysed by a working group composed of members from ministries of Agriculture, Public Works, Environment and Finance.

ARA-Centro has not initiated the work on developing a water quality database and overall the water quality issues remains at the same level as in 2017.

*(ii) The hydromet network modernization and rationalisation*

In terms of rain gauges there has been a slight reduction of the network from 41 in 2015 to 39 in 2020 while the number of evaporation stations continue at the 2015 level in the Pungwe basin. The rainfall network continues therefore to be well below the recommended 61 by WMO to adhere to WMO standards. The improvement of the rainfall network continues to be paramount for improving the flood warning system,

but it requires coordination with the Meteorological Institute (INAM), which is supposed to take the lead on this.

The hydrometric stations network was improved with one station from 27 in 2015 to 28 in 2020 above the recommended 17 by WMO.

**Table 1. ARA-Centro Hydro-meteorological network update**
**(Source: ARA-Centro Business Plan 2017, p.12; Interview with ARA Staff oct. 2020)**

| | 2015 | | | 2020 | | |
|---|---|---|---|---|---|---|
| River basins | Rain gauges | Hydrological Stations | Evaporation Stations | Rain gauges | Hydrological Stations | Evaporation Stations |
| Pungwe | 41 | 27 | 8 | 39 | 28 | 8 |
| Buzi | 29 | 22 | 0 | 32 | 25 | 3 |
| Save | 6 | 4 | 0 | 12 | 5 | 0 |
| Savane | 3 | 0 | 0 | 6 | 0 | 0 |
| Gorongosa | 5 | 0 | 0 | 2 | 0 | 0 |
| TOTAL | 84 | 53 | 8 | 91 | 58 | 11 |
| TOTAL | 145 | | | 160 | | |

Individual station historic data files continue not to be prepared by ARA-Centro for any of the above-mentioned station categories.

The periodic sampling of water quality and sediments was initiated in 2013 and by the time collected from 13 stations in the Pungwe, Buzi and Save river basins of which seven are considered particular strategic locations. The sampling frequency has been improved to cover 27 stations by 2020.

By 2020 ARA-Centro's monitoring system continues to not fully conform with WMO standards. Meteorological data is lacking in terms of availability and accuracy. The small number of available stations and insufficient spatial coverage lead to data not being accurate enough for robust hydrological modelling. The quantity of data from discharge measurement stations was an issue improved substantially with the PP2 investments in the hydromet network. However, the quality and availability of both meteorological and discharge data are inadequate for enabling more detailed hydrological assessments in the future.

*(iii) Water resource database and data management*

The Hydstra hydromet database software was installed in 2010 at both DNA (DNGRH) and ZINWA HQs through the SADC HYCOS project. Training was provided to ARA-Centro and ZINWA Save staff in 2010 and 2012 but the software was only used for approximately one year as DNGRH did not allocate funds to renew the license. This continues to be the case by 2020 and no further work has been carried out on the WR database and ARA-Centro continue to use Excel to store and manage hydromet data.

Nine groundwater-monitoring boreholes had been established by 2017, and two more added by 2020. However, the Idai cyclone rendered majority of the boreholes non-operational and by end 2020 only 3 are operational. ARA-Centro has developed an investment plan for rehabilitation but has not secured funding for its implementation.

The borehole data management information system continues to be organised using Excel.

ZINWA is not using Hydstra due to complications in importing files, and only 10% was migrated. It still uses its proprietary WRS software for stream flow data processing and a Microsoft Access-based database. The data file formats, especially the way the stations are rated, are completely different. By 2020 the license has expired and the whole package is not being applied.

There are no new developments in groundwater monitoring in Pungwe subcatchment and it continues to be non-existent. Groundwater monitoring in Zimbabwe is concentrated in areas where there are known aquifers and higher concentration of boreholes. These places include Nyamandlovu in western parts of the country and Lower Save.

Water quality is being monitored by the Environmental Management Agency (EMA). There are 6 ambience monitoring points in the Pungwe subcatchment where they monitor 9 parameters at each site. The quality of water is generally good as it falls within the blue and green bands. However, sampling and analysis have not been carried out regularly.

**Figure 2. F24 (Murara) on Pungwe river**


**Figure 3. F24 (Honde) on Honde river**

The Catchment continues to monitor water levels and water quality in the basin. There is need to add to rainfall station in the area. A rainfall station could be installed at F24 (Murara) as this station is generally safe from vandalism or alternatively at the subcatchment council offices in Hauna. Data is disseminated through emails to Mozambique and the region. However, the catchment has not been receiving any information from their Mozambique counterparts.

Both surface and water quality stations numbers satisfy WMO standards but more awareness campaigns are required to ensure vandalism is reduced to a minimum. The challenge of replacing batteries is already affecting data dissemination for the project which may render the project not sustainable. ZINWA has to find a strategy of replacing these batteries so that data is not lost.

*(iv) Water resources demand and allocation management*

By 2011 ARA-Centro had registered and issued water permits to 32 water users and the annual demand in the three basins was estimated at 176 million cubic meters, of which 77% was in the Pungwe basin. By 2020, 166 water users are presented in which 71 users are registered and the estimated annual water demand in the three basins is 256 million cubic meters, of which 75 % is in the Pungwe basin.

Investment project expect to increase the demand substantially in the future. The Beira Agricultural Growth Corridor (BAGC) project, for example, aims to develop 190,000 ha of irrigated agriculture. By 2020 ARA-Centro is still to develop a comprehensive strategy to deal with the expected substantial increase in future demand. Currently the planning is based on a forecasted annual increase of water users in the range 10-20 users, but with no specification of the type of users or estimate of individual demand.

*(v) Data and water management information products and dissemination*

ARA-Centro has not implemented changes to the hydrological products and dissemination channels since 2017, and they remain the same. The following bulletins are issued in 2020 by ARA-Centro:

- Hydrological bulletin (daily from October to March)
- Dry season bulletin
- Water flow bulletin (issued when flows are low)
- Dam bulletin (weekly, DNGRH has elaborated a standard format to be used, which will be adapted to the dams in the ARA-Centro basins)
- Water quality bulletin (issued when samples are taken)

Within ARA-Centro and ZINWA Save there are no qualified information technology specialists to maintain information management systems or databases.

The catchment and subcatchment in Zimbabwe have faced a number of challenges in the past 3 years, including drought. Rainfall has been below normal and the flows in the river reduced. Most of the water users have resorted to irrigation to sustain their livelihoods with the proliferation of illegal abstraction. This has caused a lot of competition among water users creating water conflicts. These conflicts have been addressed and have included various stakeholders, including the DCC, ZINWA and PSCC.

Conclusion
The network of hydrometric and pluviometric stations, and of automatic stations for real-time communication were substantially upgraded and expanded during PP2, and since 2017 there has been a slight improvement of the hydrometric station network.

In Mozambique the number of hydrometric stations continues to be well above the targets set for PP2, and in Zimbabwe the targets have also been achieved.

Efforts still need to be made in 2020 to improve the coverage of rain gauges and evaporation pans. However, it should also be noted that the installation of rain gauges in Mozambique falls under the responsibility of the Meteorological Institute (INAM), but the institution is still weak, and the ARAs have had to compensate for some of INAM's shortcomings in that regard, in order to be able to produce reliable information on water resources. A similar situation was observed in Zimbabwe, as the mandate is under the auspices of a different institution.

Data quality continues to significantly improve following observer training, supervision of observers, geo-referencing of hydrometric stations and installation of the data management software Hydstra. However, the sustainability of the interventions has been jeopardized by the lack of financial resources to pay for the Hydstra license, such that Hydstra is currently not in operation.

The capabilities to carry out water resource assessments have been substantially improved by PP2, but ARA-Centro is by 2020 still to develop a strategy to deal with expected water scarcity in the Pungwe basin.

Water quality monitoring has improved following almost a doubling of the number of parodic samples being implemented. However, the lack of an adequate laboratory in Mozambique to carry out more advanced water sampling, e.g. for heavy metals and pesticides, continues to constitute a barrier towards effective water quality monitoring and protection of the environment.

The quality and quantity of water management information produced by ARA-Centro continues at the 2017 level, and the information products and communication channels could still be further improved to suit different target groups.

### 2.1.2 POVERTY REDUCTION

#### a) Pungwe Basin Investment Facility

Review assessment of 2017
The review assessment of 2017 summarised the result of the Pungwe Basin Investment Facility component of the PP2 and scored it on a scale of 1-5, as follows:

| Poverty Reduction Component: Pungwe Basin Investment Facility – 1,0 |
| --- |
| Since ARA-Centro was to be the responsible body for the management of the Investment Facility, the decision not to proceed with the setting-up and implementation of the fund appeared correct. At the time ARA-Centro presented a number of important weaknesses and the likelihood of it not being able to manage the fund satisfactorily was high. Moreover, there was no clarity about the viability of large-scale commercial water infrastructure projects. Even with the complete outsourcing of the management of the Facility, ARA-Centro would still have been required to perform important monitoring functions and quality assessments, for which it lacked capacity. PP2 subsequently prioritised the small-scale grant fund activities to 'compensate' for the cancellation of this pro-poor facility. |

Development 2017-2020

No large-scale commercial project of the type planned during PP2, i.e. the Pungwe Basin Investment Facility has been planned or taken up by donors or the government since 2017. This may well reflect Mozambique's lack of willingness to invest in capital intensive projects – projects that most likely cannot be sustained financially. That assessment was spotted early on in the PP2 and thus the Facility was discarded – a right decision taken at the time, yet, as pointed out by the 2017 review, should have been realised already at the design stage.

From a counterfactual perspective, i.e. that such an investment would have been financially supported by an investor after 2017, ARA-Centro would still not have been in a position to carry out required monitoring functions and water quality assessments. The assessment of staff situation described in the Staff development section above confirms this.

Conclusion

With no major government or donor funded plans to initiate large scale commercial basin investment other measures for pro-poor efforts must be pursued. However, with the likely improved technical and financial conditions of the merged ARAs it may be possible for a new and re-organised ARA-Centro to carry out needed monitoring functions and water quality assessments required for large-scale infrastructure investment.

## b) Small and Medium Dam Development

Review assessment of 2017

The review assessment of 2017 summarised the result of the Small-medium dam development component of the PP2 and scored it on a scale of 1-5, as follows:

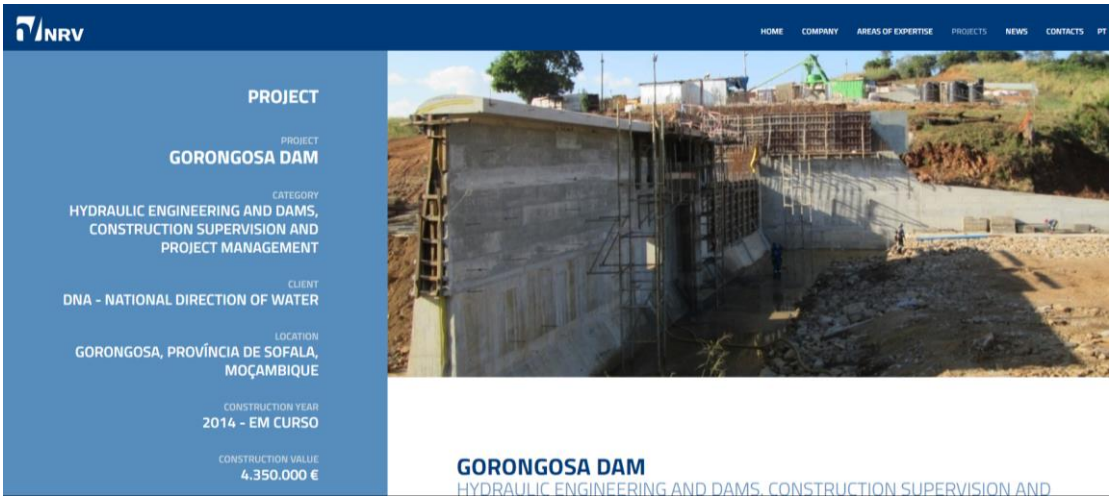
| Poverty Reduction Component: Small-medium dam development – 3,5 |
| --- |
| For the elaboration of the SMDD Strategy a very practical approach was chosen, which facilitated the inclusion of the strategy in the district and national planning process. Options for funding were defined, but it is still necessary to conduct a feasibility study for each of the dams in order to attract funding for dam construction. The realisation of such studies could have been included in PP2 to facilitate for the government of Mozambique to attract funders and investors. |

Development 2017-2020

Since the start of PP2 the focus has been on the realization of three dams, the Nhacangara, Gorongosa and Metuchira dams.

The construction of the *Gorongosa dam* commenced in 2014, fully financed by the government of Mozambique, and was to be completed in 2016. As of November 2017, the dam was almost complete, but because of lack of funding the work has stopped. According to ARA-Centro 2019 annual report a new contractor has been contracted and is continuing the works. By 2020, the dam is 95% complete. The physical structure is practically finished, components such as floodgates, electrical components and others are missing. A water pumping station will be installed in the dam to supply the villages. The water supply station is currently operating but on a provisional basis. When finalised the dam is expected to provide water to approximately 4.000 people, for irrigation purposes and produce 0,4MW.

**Figure 4. Screen dump from contractor NRV's website**




According to the PP2's Annual Programme Report (APR) 2015, the *Metuchira dam* had secured funding from the government of Mozambique to commence construction in 2016. As of November 2017, the detailed design and feasibility study were ready, but there was still no progress because of lack of funding. The design was not considered adequate and the government is currently investigating alternative placement of the dam further upstream requiring a new feasibility study. In 2018 new studies of the design were carried out to investigate the option of increasing the capacity from 0.3M m3 to 6M m3.

From the APR in 2008 the construction of the *Nhacangara dam* was mentioned as one of the major developments in the Pungwe basin. According to APR 2015, negotiations for the funding of the design and construction of Nhacangara dam were in an advanced stage with potential donors, after the Italian government had withdrawn its commitment to finance dam construction, as it did not consider it economically sustainable.

No multi-purpose dams have been built or planned for in the near future in Pungwe.

Conclusion
Progress has been made on Gorongosa dam in terms of securing a contract for a new contractor and plans are in development to improve the design of the Metuchira dam to increase the planned capacity 20 times.

## c) Small-scale IWRM&D grant fund (SGF)

Review assessment of 2017
The review assessment of 2017 summarised the result of the Small-scale IWRM&D grant fund component of the PP2 and scored it on a scale of 1-5, as follows:

| **Poverty Reduction Component: Small-scale IWRM&D grant fund (SGF) – 4,0** |
|---|
| While women were *specifically* addressed in the fund design (article 7 in standard MoUs for the SGF beneficiaries) only few benefits were observed and the women's role in the decision-making bodies remained unclear. Notwithstanding those facts, the support to the construction of irrigation schemes facilitated a pro-poor approach that led to tangible results, such as increased income and agricultural production, which in turn strengthened women's capacity to pay for social services (e.g. school fees). The success of the support benefitted from the districts' engagement in extension services to farmers, as well as by a dynamic market with good prices for agriculture products. Support to irrigation projects with immediate benefits for the farmers comprised a relatively small part of PP2. The armed conflict affected Programme implementation and limited the success of some of the projects. |

Development 2017-2020
The 2017 review questioned to which extent it would be possible to continue and sustain the progress and achievements of the associations supported through the PP2 intervention. The review provided a high score to the SGF sub-component.

**Mozambique**

The assessment of the ARA-Centro management was that all 23 SGFs supported during the PP2 were in operation prior to the destruction caused by the Idai cyclone in March 2019. It estimated that about half the 23 SGFs were active as of November 2020.

Boxes 1 and 2 present in summary developments of the PP2 supported SGF projects since 2017 based on field visits undertaken to seven SGFs by the evaluation team in late November 2020, in Barue and Nhamatanda districts in Mozambique. Detailed information is presented in Annex 5.

| **Box 1. Developments of selected SGFs in Barue District, Mozambique** |
|---|
| Three years after the end of the PP2 project in Barué district distinct situations have been experienced by each of the associations.<br><br>The support provided by PP2 was as indicated in the review of 2017 positive from the point of view of materials and knowledge transmitted in the community, while some associations suffered external influences, such as outbreaks of armed conflicts. Associations that did not suffer from the war directly continued after 2017 to have good results with the materials invested by PP2, for example increase in production and increase in number of employees to cultivate the land in the associations of Nhamuzaraza 1 and Nhamuzarara 2. |

The replacement of the materials left by PP2 have been very unsatisfactory. The associations in many instances do not have funds to replace the parts, and where associations that do have some funds have not been able to find good quality materials in the local market.

Overall improvements in farmers' livelihoods in the SGFs seem evident from the field visits. For example, earnings resulting from the sale of lychees, the association members were able to invest and improve their housing, support better their children's education, and diversify their food intake as well as expand land coverage buying up additional agricultural land.

Those associations that have been affected by armed conflict had their activities interrupted for a long period. The communities were forced to leave the areas of work for some time, and today they are trying on their own to resume activities. The Nfudzi dam association in de Nhapepe suffered from both the impact of the war and with the cyclone Idai resulting in the whole system was silted up and flooded with water.

**Box 2. Developments of selected SGFs in Nhamatanda District since 2017**

Three years after the end of PP2 the associations of Nhamatanda had experienced three distinct problems, one related to conservation and sales of products, the other to maintenance and purchase of materials and equipment, and the latter to the cyclone Idai.

Some associations faced problems in the conservation of products that had not been sold and problems in determining prices on products. For example, the Tamba Wa Guta association, faced problems with its first customers who only wanted to buy tomatoes of a certain quality thus leaving a large quantity behind. Through its own effort the association was able to find a buyer who could buy all the production without specific selection, but prices were then much lower. At the same time there is an increase in the number of customers and sales partners coming from Beira and Chimoio.

Associations often cannot get the right equipment parts in the local market. For example, the association of young farmers from Macalaure had to procure parts outside Mozambique to replenish the stock of equipment. Five motor pumps were received from PP2, and currently 3 of those have broken down and remain without service for lack of adequate parts – not for lack of funds to purchase parts.

The district of Nhamatanda suffered greatly from the floods of the cyclone. All water systems were damaged, production was lost, the irrigation pipes were dragged and motor pumps displaced by the waters. All motor pumps are currently damaged and have not been serviced yet.

In the period after the cyclone Idai, members received humanitarian aid from different NGOs but without support in the agrarian area. Many returned to use the canal system for irrigation of their fields and gradually make individual efforts to recover the equipment.

From the above boxes we see positive and negative developments for the PP2 supported SGFs since 2017.

On the positive side increased livelihoods from increase in production, increase in hired labour (employment), access to education, maintenance and improvement of farmers'

homes/houses, and expanding of land for increased production, and improved nutritional behaviour.

On the negative side we see the armed conflict and the cyclone as key external factors affecting the livelihoods of the communities.[7] Also, for both districts maintenance of agricultural equipment provided by PP2 is a serious problem due to lack (and quality) of parts at the local market. In addition, it seems that storing and marketing of agricultural produce can be a challenge for some associations.

From ARA-Centro management it was informed that some new SGFs have been established with the support of the Climate Resilient Infrastructure Development Facility (CRIDF)[8] and the USAID funded Resilient Water Program (RWP) 2018-2022.

As pointed out in the Stakeholder participation sub-component women were not specifically addressed in practice in the PP2 and also in the SGFs, the latter confirmed by the field work carried out by our local consultant in October-November 2020.

The MoUs established, operated and handed-over during the PP2 are still active. The MoUs outlined the responsibility sharing between ARA-Centro, the local government and the associations in the development and O&M of water supply, irrigation and agricultural production. The ARA-Centro management found that the MoUs had overall been implemented as per MoU contracts, though observations from the field visits showed no clear picture. The ARA-Centro management underscored that it mainly engages when major water related issues arise and not in matters in the short-term or on day-to-day challenges. ARA-Centro also participate in regular district (and provincial) planning meetings.

Generally, funding limitations have reduced the engagement of the ARA-Centro in its support to the associations. Also, for both water institutions, there has been no systematic monitoring and recording of progress and achievements of the performance of the associations in their efforts to build sustained livelihoods, including the empowerment of women and young farmers. Data may be found at local levels, i.e. in associations' logbooks and/or in district records.

7 Following the Idai cyclone damages local government and various donors have subsequently taken steps to support the rebuilding of infrastructure and providing humanitarian support to the rural population.

8 CRIDF is a DFID (UK Aid) supported programme working to provide long-term solutions to water issues that affect poor commitment in the Southern African region.

## Zimbabwe

Box 3 presents in summary developments of the PP2 supported SGF projects since 2017 based on field visits undertaken to seven SGFs by the evaluation team in late November 2020, in Zimbabwe. Detailed assessment is presented in Annex 6.

**Box 3. Development of selected PP2 supported SGF projects since 2017**

**Chidzinzwa Irrigation Scheme**
Apart from the water shortages as a result of the drought, Chidzinzwa is still one of the well organised schemes. Sincerely need support for an additional water source. Some communal farmers have resettled into the head water areas resulting in conflicts for water. ZINWA, DCC and Agritex need to address these challenges in order to sustain agricultural activities.

**Butsi Irrigation Scheme**
The situation at this scheme has not improved since the last visit. The same management committee is still in charge. Some of the beneficiaries, especially the school, feel being side-lined. Most of the committee members did not attend the meeting. Water availability is a serious challenge as the sources have dried up. The scheme was advised to cut down on all production and prioritise the school. Lots of confusion on the ground.

**Gatsi Primary School**
Well managed project. The Ministry of Education has shown interest with the Permanent Secretary for Education for the Ministry personally sourcing markets for their produce. Need to fence of their plantations as they are close to the community centre. The school need to employ more hands for the plantation. The scheme had been affected by Covid 19 as pupils who used tend in the garden were not available for over 6 months.

**Kushinga Irrigation Scheme**
Good scheme. Low production has caused animosity due to water shortages. Now fighting with PSCC on payments of levies. There has been poor communication with PSCC. Severe conflicts of water use with other farmers outside the scheme. ZINWA and PSCC must carry out awareness campaign for the schemes to understand why levies are being paid for.

**Nyamandwe Irrigation Scheme**
Very good scheme. Well run committee and good understanding of water allocation. Paying all levies to PSCC. The good results from the project have resulted in other villagers developing their own scheme using the same concept used by the Nyamandwe irrigation schemes.

**Nyamakowero Irrigation Scheme**
Very impressive scheme but being affected by water shortages. Scheme comprised mainly of the elderly who have transformed their lives through hard work and dedication. They are sending their children to school and have improved houses. The good results from the project have resulted in other villagers developing their own scheme using the same concept used by the Nyamakovero irrigation schemes

**St Columbus Primary School**
Our local consultant once visited the scheme in 2015. It was then a thriving plantation. This time it was really 'sorry site' because of water challenges.

From Box 3 we see positive and negative developments for the PP2 supported SGFs since 2017.

On the positive side, apart from one irrigation scheme, all of the visited SGFs were considered to be managed well. The schemes have not been affected by the cyclone Idai to any significant extent. The good results from of the Nyamandwe and Nyamakowero irrigation schemes have sparked new initiatives among other villagers developing their own schemes using the same concept used by the two irrigation schemes.

Additional data from the field work indicate the SGFs were serviced adequately by various public entities, including The Department of Irrigation of Manicaland Province which continuously monitors the irrigation standards at all the schemes of the SGF projects. In that sense all MoUs are valid with public stakeholders at provincial and district levels continuously supporting the SGFs within their specific areas of responsibilities. This counts for, for example, the Agritex offices, the Development Coordinator offices and the Environmental Management Agency (EMA).

On the negative side severe water shortage has occurred in all SGFs resulting from drought which have forced farmers to cut down on their land under irrigation. In some cases, the drought also has forced farmers to resettle, including in head water points which has caused the emergence of water conflicts. Internal community conflicts due to this situation have also emerged.

Furthermore, the water shortage has resulted in low agricultural produce and sale. One association showed resistance to pay the levies imposed by the subcatchment council. Proper maintenance is lacking in all of the SGFs and a lot of pipes have busted, which might have been due to poor quality pipes or excessive pressure. All the SGFs except Nyamandwe are already investigating the possibilities of setting up new water sources to enable their schemes to thrive.

Conclusion

The 2017 review questioned to which extent it would be possible to continue and sustain the progress and achievements of the associations supported through the PP2 intervention. The picture in 2020 is rather mixed pointing to several internally strong features for sustained developments but several mainly external factors that have deteriorated the conditions for sustainability and prosperity of the rural communities supported by the PP2.

In Mozambique armed conflicts, the cyclone Idai and water shortages due to drought constituted the most deteriorating external factors that impacted the SGFs degree of progress and the sustaining their often-positive results. The latter being in all aspects of socio-economic developments, including improved housing, increased income, accessing education, expanded land for increased agricultural production and marketing. On the negative side we see highly insufficient maintenance of PP2 delivered irrigation equipment as a particular issue, i.e. especially parts as well as parts of quality not accessible at the local markets. The Idai cyclone has sparked the need for machinery parts and pipes skyrocketing. Also, challenges have been observed in storage and marketing of agricultural produce.

In Zimbabwe the water shortages over the 2017-2020 period have caused significant damage to the future prosperity of the SGFs. It has forced farmers to cut down on their

land under irrigation and forced farmers to resettle, including in head water points which has caused the emergence of water conflicts. Internal community conflicts due to this situation have also emerged. The water shortage has resulted in low agricultural produce and sale causing resistance to payment of water levies. Proper maintenance of equipment is lacking in all of the SGFs and they are investigating the possibilities of setting up new water sources.

For both countries it seems that the MoUs are still active and apparently overall functioning according to their mandate, i.e. the different stakeholders devoted to execute their assigned responsibilities.

New SGFs have been established with donor support and new initiatives among other villagers developing their own schemes using the concept used by the PP2 irrigation schemes.

Performance of the associations in their efforts to build sustained livelihoods are not systematically monitored or recorded.

### 2.1.3 ENVIRONMENTAL PROTECTION

#### a) Salinity control

Review assessment of 2017

The review assessment of 2017 summarised the result of the Salinity Control component of the PP2 and scored it on a scale of 1-5, as follows:

| **Environmental Protection component: Salinity control – 1,0** |
|---|
| The cost of the salinity control construction was underestimated in the PP2 budget. The movement of the intake for drinking water was already foreseen in the project proposal for PP2 (2006). The programme did not want to invest in the improvement of the water quality for the Sugar Estate. These considerations should have been made before the programme started, also to not raise expectations with stakeholders that could not be met afterwards. Alternatively, a public-private partnership or similar scheme could have been considered. |

Development 2017-2020

No progress has been registered during the period due to lack of funds and no private initiatives have emerged. Additionally, ARA-Centro is linking decreased water abstraction fees received from the Mafambisse Sugar Estate to complaints about bad water quality due to salinity issues.

Conclusion

PP2 did not provide appropriate protection against saline water intrusion in the lower Pungwe basin to protect irrigation and industrial activities dependent on water supply from the river, and to ensure the availability of safe drinking water. ARA-Centro has not managed to secure funding for any salinity protection investments, but are aware of the issue especially as it has an effect on water users' satisfaction.

## b) Gold panning management

Review assessment of 2017

The review assessment of 2017 summarised the result of the Gold panning management component of the PP2 and scored it on a scale of 1-5, as follows:

| **Environmental Protection component: Gold panning management – 3,0** |
| --- |
| The gold panning strategy helped raise awareness amongst stakeholders about the environmental and social impact of gold panning. It could probably have had a greater impact if the ministries with the primary responsibility for this activity (mineral resources and/or environment) had led this project, as they could have taken more rigorous control and enforcement measures. The demonstration projects showed very practically how things worked and proved that production can increase if the activity is well operated and maintained. However, to change the gold panners either to use other technologies or to take up alternative income generating activities was a big challenge. PP2/PCU did what they could to show alternatives, but the incentives to maintain existing practices, and the magnitude of the problem proved too overwhelming for PP2 to counter. |

Development 2017-2020

Water quality has not improved since the start of PP2, rather it has worsened due to increased mining and gold panning activity and especially an increase in large scale mining.

ARA-Centro has not engaged in any gold panning mitigation activities after the end of PP2 and is finding it difficult to control larger companies as licenses are issued by the Ministry of Mineral Resources and Energy (MIREME) without involving ARA-Centro. Attempts at entering into dialogues with polluting companies have failed. No further work has been carried out in terms of updating and implementing the Gold Panning Strategy and action.

One of the four PP2 supported demonstration projects on alternative technologies is operational. The remaining three suffered from vandalism carried out as part of the armed conflict in the region. The two PP2 supported alternative income generating activities were also abandoned due to the armed conflict.

No progress has been made since 2017 in terms of specific monitoring of water quality parameters related to pollution from gold panning. The Strategy has not been fully customized into the Zimbabwean context. Gold panning continues in new areas where problems were never experienced.

Conclusion

The development of the gold mining strategy through PP2 increased awareness about the impact on water resources on governmental level and with local stakeholders. Sustainable technologies and alternative livelihoods were promoted through demonstration projects and alternative income projects for small scale mining groups, but due to the armed conflict only one of the demonstration projects is still active. The overall impact of the gold panning management and mitigation effort of PP2 have deteriorated substantially since 2017.

Interventions carried out by various authorities to control and regulate gold mining in addition to the PP2 activities seem not to have had a visible effect, and gold panning activities have increased with detrimental effects on water quality. The big mining companies are not sensitive to any authority and difficult to convince to change their way of working.

PP2 could have had more impact if the involved ministries would have had more formal/leading role in the process because they have more authority and legal instruments (licenses and concessions) and means (police force) to intervene than ARA-Centro.

## c) Flood and drought management

Review assessment of 2017

The review assessment of 2017 summarised the result of the Flood and drought management component of the PP2 and scored it on a scale of 1-5, as follows:

| **Environmental Protection component: Flood and drought warning – 4,0** |
|---|
| The Programme has been successful in building the necessary mechanisms and capacity for flood warning and mitigation at ARA-Centro. It is however important to strengthen the institutional arrangements, involve other stakeholders and ensure that they are also able to provide, collect and share relevant information, other than just focusing on building the capacity of the river basin organisation itself. |

Development 2017-2020

By 2017 ARA-Centro was applying a simple GIS-based flood forecasting model using the DNGRH open source Geospatial Stream Flow Model (GeoSFM) for the Pungwe basin. The main input into the model is rainfall forecasts. The main output is flow magnitude for the given rainfall estimates. At the time DNGRH was considering what modelling software to promote.

Currently ARA-Centro is updating the model and hoping to be able to run it for the 2020/21 rainy season for Pungwe basin. DNGRH is currently in the process of developing HEC-RAS models for Buzi and Save basins, which are expected to be operational by 2021. ARA-Centro still have staff capable of working with the models, but a dedicated modelling room has not been built as planned. The Hydstra database promoted by DNGRH, remains non-operational due to non-payment of licensing fees.

ZINWA has mapped flood risk areas, but has not proceeded to quantifying the population in risk. The work is to be carried out under the Civil Protection Unit, which ZINWA is a member of. However, local government through the Civil Protection Unit is carrying out different information efforts to inform vulnerable population about flood risks. Since 2017 ARA-Centro has initiate the work with support from GIZ of quantifying and map the areas vulnerable to flooding, with the intention of demarcating areas where settlements should be avoided and in order to produce flood risk maps.

The *dissemination system* continues to be working well, and a data exchange has improved between ARA-Centro and relevant authorities such as INGC, INAM and provincial authorities and formal protocols have been established governing exchange via signing of MoUs. The data exchange with ZINWA/Zimbabwe is now only happening electronically using social media platforms, i.e. WhatsApp and e-mail. ARA-Centro receives upstream information such as dam storage capacity and water flow and levels. The BUPUSA website which was used for dissemination continues non-operational and has not been replaced by an alternative.

The 2019 Idai cyclone demonstrated weaknesses in the dissemination and warning system as it wiped out the applied communication channels such as phone lines and internet, and ARA-Centro was not able to communicate internally in Mozambique with relevant stakeholders and with Zimbabwe stakeholders. In order to avoid a similar communications black out in the future ARA-Centro has purchased satellite phones and invested in radio communication systems.

*Droughts* had not been an issue during the PP2 implementation period and there are no droughts registered since 2017, and it remains mainly an issue for the Southern part of the country. However, there are several arid regions in the Buzi basin, which could potentially be an issue if climate variability dictates it. There continue not to be any structural mitigation measure for a possible future drought situation. ARA-Centro has initiated the work on developing a drought strategy.

Conclusion

The component outcome continued to be achieved as flood management is largely operational, which can be considered a major achievement of the PP2 via investments in capacity building of ARA staff and improvement of the hydromet network. Information exchange has improved substantially, and ARA-Centro is working on producing flood risk maps in order to improve disaster risk response and mitigation measures.

Preliminary work on improving drought management via the drafting of a strategy has been initiated.

## d) Integrated water and land use management

Review assessment of 2017

The review assessment of 2017 summarised the result of the Integrated water and land use development component of the PP2 and scored it on a scale of 1-5, as follows:

| Environmental Protection component: Integrated water and land use development – 2,0 |
| --- |
| The IWLU Strategy was technically sound, but did not result in the implementation of any policies or regulations. The governance structure in Mozambique could have been considered right at the start of the Programme, in order to get more support for the content of the strategy and proposed coordination mechanism. The promotion of water and land use goes well beyond ARA-Centro's mandate, competence and capacity. Other governmental institutions could have been invited to take the lead, given the cross-sectoral nature of the strategy. |

Development 2017-2020

The Integrated Water and Land Use (IWLU) Strategy was completed in 2010, key institutions responsible for water and land use issues in the basin from both Zimbabwe and Mozambique were consulted and their views were taken into consideration during the formulation of that strategy**.** The strategy has not been updated.

ARA-Centro have actively tried to engage with provincial and district authorities to cooperate around the strategy and to disseminate it, but with no result. The devastation and losses to the agricultural sector caused by the Idai cyclone led to farmers initiating, apparently with the approval from provincial and district authorities, riverbank cultivation, which goes against the recommendation of the strategy. ARA-Centro does not have funds to carry out demarcation, which also provides a challenge in terms of the implementation of the strategy.

Conclusion

There continue to not be an effective coordination mechanism in place for promoting and monitoring sustainable water and land use in the basin. Also, there does not seem to be political support from relevant provincial and district authorities to important parts of the strategy. The promotion of water and land use goes well beyond ARA-Centro's mandate as well as its competence and capacity, and with the limited involvement of other governmental institutions it has a detrimental effect on the river basin in terms of erosion and increased sedimentation due to riverbank cultivation.

## e) Environmental flows

Review assessment of 2017

The review assessment of 2017 summarised the result of the Environmental flows component of the PP2 and scored it on a scale of 1-5, as follows:

| Environmental Protection component: Environmental flows – 1,0 |
| --- |
| The environmental flow requirement study was downsized and terminated because support was provided by IUCN, at the same time as PP2 funds for this study were insufficient. The project appraisal for the environmental flows should have elaborated on budget institutional and legal limitations. This would have enabled for a more informed decision to be made during the design phase of the study in terms of the viability, cost and financing from other partners. |

Development 2017-2020

The strategy and action plan for monitoring and preserving environmental flows in Gorongosa Park and Lake Urema was developed together with an assessment of land use practices on Gorongosa Mountain. However, by 2012 the project was downsized and terminated and has not been taken up again. ARA-Centro has however submitted a proposal to the Global Environmental Facility (GEF) seeking funding for environmental flow studies for Pungwe, Save and Buzi basins with technical support from IUCN, and are awaiting a funding decision. The assessment in 2017 indicated that funding was secured from IUCN, yet this was not the case.

ARA-Centro has communicated to ZINWA that they for now would like an environmental flow buffer of 50%, which has been denied by ZINWA as excessive and the negotiation process is ongoing with regard to setting basin specific flow requirements. ZINWA is applying 10% for primary environmental flows in their demand modelling.

Conclusion

Status quo prevails and the component still awaits external financing and implementation support from GEF and IUCN in order to progress in lieu of nationally financed efforts and lack of reaching bilateral agreements on specific environmental flow requirements.

### 2.1.4 REGIONAL COOPERATION

Review assessment of 2017

The review assessment of 2017 summarised the result of the Regional Cooperation component of the PP2 and scored it on a scale of 1-5, as follows:

| **Regional cooperation – 5,0** |
| --- |
| With the successful signing of in the Joint Water Sharing Agreement in July 2016 a significant basis was established for the continuous strengthening of regional cooperation between the two countries – including the mobilisation of future GIZ support to the implementation of the Agreement and the BUPUSA project. Without the signing of the agreement it is questionable if other donor would have provided support. The success of this component also was facilitated by the efforts of the Mozambican and Zimbabwean governments. |

Development 2017-2020

The review carried out in 2017 found that the Regional Cooperation component was successful.

The Pungwe Agreement formed the basis for the continuous institutional support for new agreements from other donors, including the GIZ, which assisted in the bridging phase after Sida funds came to an end in 2017. Other cooperating partners have since entered the group of donors for the preparation and implementation of the agreements, including Resilient Waters (USAID), Global Water Partnership South Africa (GWPSA), GEF, and IUCN.

The two countries currently share information and data on water levels, but they do not participate in the joint water quality monitoring as that was financed by PP2, the reason being, most likely, lack of funds, travel restrictions due to the pandemic, and, in the case of ARA-Centro, barely being able to monitor its own water quality.

A new Joint Water Agreement between Zimbabwe and Mozambique was signed in July 2019 for the Buzi Basin and as was the case of the Pungwe Agreement the key features of the agreement were as follows:

”to promote coordinated cooperation between the Parties and to ensure the sustainable development, management and use of water resources in the Buzi watercourse, taking into account the increasing demand for water in both countries, the climate change scenario that impact on the gradual reduction of water availability and socio-economic development in the basin.” [9]

ZINWA Save and ARA-Centro is currently working on logistics to finalise the Save Agreement which is planned to be finalised by the end of 2020. The final stage in the regional cooperation is the establishment and operationalisation of the BUPUSA Secretariat, which is expected to gain momentum in 2021. Legal instruments are currently being crafted.

Conclusion

The signing of the Joint Water Sharing Agreement in July 2016 could probably be considered the most successful outcome of PP2 and expectation for the continuation have been high. The expectations have come to fruition in that (with the support of several donors and the two governments) a joint water agreement between Zimbabwe and Mozambique was signed in July 2019 for the Buzi Basin and one to be signed for the Save basin in December 2020. This successful process can to a large extent be attributed the PP2s efforts to facilitate the agreement process at its initial stages. While the process towards final agreements and the establishment of the BUPUSA secretariat is on the agenda the realisation of the agreement ‘on-the ground’ is still to be questioned as joint water quality monitoring is not implemented.

## 2.2 SUSTAINABILITY

Review assessment of 2017

The review assessment of 2017 summarised the result of the Sustainability of the PP2 and scored it on a scale of 1-5, as follows:

9 https://www.dngrh.gov.mz/en/mozambique-and-zimbabwe-sign-memorandum-for-sharing-buzi-river-waters/

| **Sustainability – 1,5** |
| --- |
| The potential fee collection from the selling of raw water from the future dams will be the key to ensuring the sustainability of ARA-Centro. Increases in fees or tariffs will be too small to have a significant impact on sustainability. The continuous instability of the staff situation at ARA-Centro and the extent to which the current financial crisis in Mozambique will impact on the overall budget allocation to ARA-Centro from the government are both factors that endanger sustainability. For example, ARA-Centro may not, as has been previous practice, be able to retain the fees it collects, and instead be requested to transfer (parts of) them to the central state administration. |

Development 2017-2020

Developments have been divided into two sections, one for each of the two countries.

**Mozambique**

The main business of ARA-Centro is to provide sufficient quality and quantity of water for water users and to collect fees for this service. According to the ARA-Centro management controlling flooding and dam construction are key to this effort and essential for financial sustainability of ARA-Centro. The dams provide security of water availability to ensure adequate consumption of water for irrigation, farming, fishing, water supply and power generation, leading to increased social and economic development in rural communities. The Beira Agricultural Growth Corridor (BAGC) project plans to develop 190,000 ha of irrigated agriculture and the provision and security of water to this project can increasingly sustain financially ARA-Centro.

With an increasing number of water clients (estimated at 10-20 annually) and security of water availability conditions for collecting water fees will improve significantly. While the numbers have increased incrementally the fees collected have basically stagnated up till 2017 (Table 2). In 2018 there was an increase in the collected fees due to the collection of debts by water users carried over from previous years. The low amount of fees collected in 2019 was mainly due to water users postponing their payment as the Idai cyclone destroyed many assets (irrigation schemes, land, etc.). The water fee collection will improve as new software to be installed will harmonize procedures.

Over the period 2017-2020 ARA-Centro has managed to undertake some investment to sustain its infrastructure. This included the maintenance of monitoring network, rehabilitation of small dams, the construction of boreholes for aquifers monitoring and for building the Buzi Office. Yet, planned investment in a water quality laboratory has not taken place.

Table 2 presents the number of users and the revenue collected by ARA-Centro in the period 2009 to 2020.

Table 2. ARA-Centro Revenues collected 2009-2020

| YEAR | No. of USERS | REVENUE (MZN) |
|---|---|---|
| 2009 | 15 | 2,130,406 |
| 2010 | 20 | 3,138,651 |
| 2011 | 25 | 3,965,729 |
| 2012 | 35 | 6,926,899 |
| 2013 | 38 | 4,976,551 |
| 2014 | 38 | 4,886,362 |
| 2015 | 38 | 6,644,229 |
| 2016 | 50 | 4,776,420 |
| 2017 | 78 | 4,712,286 |
| 2018 | 85 | 12,273,445 |
| 2019 | 100 | 5,523,199 |
| 2020 | 74 | 9,543,027 |

Source: PP2 Annual Progress Report 2016, p.50; Questionnaire response 2 Nov. 2020, and email correspondence 25 November 2020.

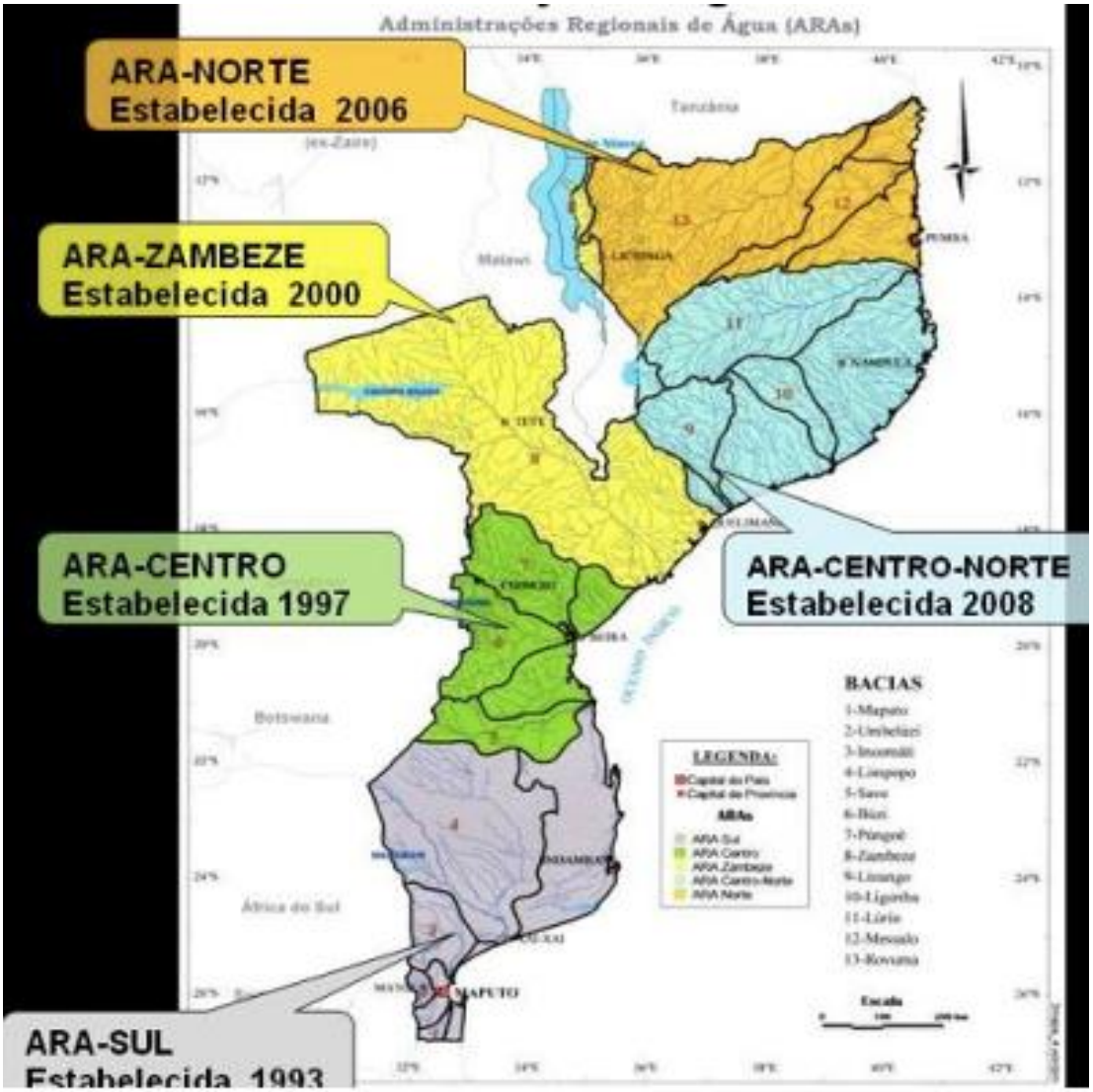
ARA-Centro is still allowed to retain collected fee for its budget. While budget approval procedures appear to remain as previously, the transfer and disbursement of funds now comes directly from the national level, i.e. the Ministry of Finance. Previously funds were disbursed qua the provincial level. The change has secured that the full budget is going directly to ARA-Centro avoiding risky deviations of fund transfers from the province. This is in line with current decentralisation efforts in which the role of central government bodies is strengthened to facilitate better support and services to decentralised units in government. It is assumed that the new decentralised funding mechanism will apply to the new structure described below, i.e. the Ministry of Finance funding directly the new ARAs.

In July 2020 the government decided to merge four of the five regional ARAs. This included the merger of ARA-Centro with ARA Zambeze (to be named ARA-Centro) and the merger of ARA-Centro-Norte with ARA-Norte (to be named ARA Norte). ARA-Sul remains as previous.[10] [11] Thus three ARAs will be responsible for the regional water resources management in the future. Currently statutes are drafted while at the technical level the process is yet to take off. One source mentioned that the HQs of the new ARA-Centro will be in Tete City, but this has not been confirmed by any authoritative body.

10 https://clubofmozambique.com/news/government-to-merge-ara-zambeze-with-ara-centro-and-ara-centro-norte-with-ara-norte-165766/#:~:text=The%20government%20decided%20on%20Tuesday%20to%20merge%20by,institutions%20would%20be%20called%20ARA-Centro%20and%20ARA-Norte%20respectively.

11 A new decree was issued on 20 August 2020 outlining the mandate for the merged ARA-Centro and ARA-Zambeze. These responsibilities do not deviate from what has been the mandate from the ARAs before the merger. *Decreto no.73/2020, Boletim da Republca, Quinta-faira, 20 dee Agosto de 2020, 1 SERIE-No. 160*. This document was provided the evaluation team on 2 November 2020 by the ARA-Centro management.

Figure 5. Regional Water Institutions in Mozambique – The ARAs.




According to the management of ARA-Centro the merger was necessitated due to the organisation's inability to develop and sustain a satisfactory performance. This assessment is a confirmation of the low rating on sustainability of ARA-Centro by the review team in 2017.

The justification for the merger has been outlined in an official document (*FUNDAMENTACÄO, Republica de Mozambique, no date*)[12]. The document clarifies that while the five ARAs were assigned as legal autonomous entities, administratively and financially, they developed differently from their establishments till today. ARA-Sul, ARA-Zambeze and ARA-Centro-Norte were able to develop and maintain sufficient technical and financial capacity to achieve their mandates to manage water resources satisfactorily.

12 This document was provided the evaluation team on 2 November 2020 by the ARA-Centro management.

The document claims that this was not the case for ARA-Centro and ARA-Norte. However, the 2017 review found that the technical capacity of the ARA-Centro was high, facilitated in part by the massive capacity building provided by PP2, and that the underperformance of ARA-Centro was due to other causes not fully identified (see intro box to Staff development section, 2.1.1.a).

At the same time, it was prohibited by law to transfer technical and financial resources from one ARA to the other. This caused an imbalance in the development of the river basins thus challenging effective water resources management. Therefore, the merger of the two insufficiently performing entities into two of the more effectively performing ones was seen as a rationalisation exercise in which human, technical and financial resources could be optimised ('economies of scale'), and in so doing service better water clients and manage better the hydrographical basin.

The merger is claimed to have several advantages. These include the following:

- Improve flood and drought challenges and their management
- Reduce the asymmetries in the development of the hydrographical basins by redistributing equitably technical, material and financial resources among fewer ARAs
- Strengthen the service provision of water through the involvement of water clients and other relevant stakeholders in managing water resources
- Modelling of a framework that will allow for national, regional and international investment.

The financial analysis shows that the new institutions will cover 2/3 of their own administrative expenses.

**Zimbabwe**

Up to 2018 the revenues of ZINWA Save were sufficient to cater for their business operations. They managed to pay off a car loan and completed building of the superstructure. In recent times, however, levies have been eroded by inflation and some of the water users have been having difficulties in paying. Major water users, such as the hydroelectric schemes who used to pay in advance are now in arrears as the current inflationary environment has also affected them. Figure 6 shows the dramatic development of inflation since late 2018.

Figure 6. Inflation rate in Zimbabwe 2016-2020 (%)


Source: https://tradingeconomics.com/zimbabwe/inflation-cpi

The macro-economic situation in Zimbabwe has affected operations negatively. Prior to 2017, Zimbabwe was using a multi-currency system and the prices were stable. When a local currency was introduced as legal tender, it was losing value on the black market rate on which most of the process where pegged at par with the USD, yet ZINWA was using official rates. This continued up to early 2020 when the local currency lost value by over 100 times. The Government then introduced a floating system as well as allow trading in foreign currency. This has now stabilized the prices to some extent, but the price of water levies is still far from the value realized before the changes. Prior to 2017, for the water permit levies, 1ML of water was 1USD. Now the same 1ML is now less 15 Zimbabwe dollars (equivalent to USD 0.20).

At the same time the ZINWA Save management informed that the establishment of the three new service centres have brought ZINWA closer to existing and potential water users and have resulted in an increase in the revenue. The revenues collected for the period 2010-2020 is presented in Table 3. As can be seen the amount for 2020 is massively higher than the previous years and can be explained by a 500-800% annual inflation rate.

Table 3. ZINWA Save Revenues collected 2010-2020

| Year | Total (in Zim$) |
|---|---|
| 2020 (till October) | 81,340,207 |
| 2019 | 12,765,166 |
| 2018 | 6,130,536 |
| 2017 | 8,166,990 |
| 2016 | 4,034,821 |
| 2015 | 5,813,004 |
| 2014 | 6,290,576 |
| 2013 | 5,068,764 |
| 2012 | 5,722,459 |
| 2011 | 4,461,900 |
| 2010 | 4,151,805 |

Source: ZINWA Save management

Conclusion

According to the ARA-Centro management controlling flooding and dam construction are key to financial sustainability of ARA-Centro. With the increasing number of water users paying fees and these are retained in the ARAs budgets the financial situations of the ARAs have improved. At the same time the decentralization process initiated by the Mozambique government have secured the financial conditions for the ARAs as means will be funded directly from the Ministry of Finance, bypassing the provincial level. The Beira Agricultural Growth Corridor and the soon to be completed and operational Gorongosa dam will further strengthen the conditions for a new and more financially viable ARA-Centro.

The merger of the ARAs was effectuated because of the unsustainable nature of two of the five ARAs, one of which is the ARA-Centro. The low score given to ARA-Centro's sustainability in the review in 2017 appeared as a correct assessment. While it was not possible for the team to analyse other ARAs, the recommendations did not include a merger option.

Based on the Government's own analysis the merger of the two insufficiently performing entities into two of the more effectively performing ones can be seen as a rationalisation exercise in which human, technical and financial resources could be optimised ('economies of scale'), and in so doing service better water clients and manage better the hydrographical basin.

Up to 2018 the revenues of ZINWA Save were sufficient to cater for their business operations. In recent times, however, levies have been significantly eroded by inflation. The result has been that water users have not paid their levies and major water users, such as the hydroelectric schemes who used to pay in advance are now in arrears. At the same time the three new decentralised service centres have managed to increase revenues for water supply services.

## 2.3 IMPACT

Review assessment of 2017

The review assessment of 2017 summarised the result of the Sustainability of the PP2 and scored it on a scale of 1-5, as follows:

| **Impact – 2,0** |
| --- |
| Overall impact has been less than expected, in particular when considering the fact that PP2 was carried out over a period of 10 years. An important aspect for assessing Programme impact will be the degree to which the products of PP2 will be put to use in the future. This includes policies and strategies, or concrete products such as feasibility studies and how those are used by government, international donor or other organisations. |

Development 2017-2020

Taking point of departure in the premise that impact should be viewed in the context of the future use of the products delivered by the PP2 one may consider the following:

1 Strategies and polices initiated and completed by the PP2 have not been taken up by government and donors over the period 2017-2020. This included the strategies related staff development, small- medium scale dams, gold panning, and integrated water and land use management. The impact has been less than satisfactory.

2 The impact of the support by PP2 to the initiation of the regional cooperation has been significant involving an increasing engagement of both governments and the interest and further support of donors. Also, the speed by which the strategic agreements have developed and been approved by the two governments has confirmed perceived importance of the joint water agreements. The attribution of the PP2 to this development cannot be underestimated and as found during the review in 2017 the process would have faced difficulties in gaining momentum without the PP2's engagement early on.

3 The infrastructure-heavy and unsustainable Pungwe Basin Investment Facility originally designed for PP2 was cancelled and substituted with grant support to irrigation schemes for small scale farmers and communities (the SGFs). The SGFs were an important step created by the PP2 to ensure improved income and prosperity in other socio-economic aspects of life for up to 1000+ households in the two countries. However, powerful external factors crushed for many communities these positive trends since the PP2 terminated in 2017. Without the continuous armed conflicts, the Idai cyclone and severe droughts hitting many areas of where the PP2 SGFs are located the positive development would most likely have developed further from 2017 and on.

4 The duplication of the PP2 devised SGF model (with investments in irrigation schemes and setting up clearly defined MoUs) in and around the SGF implemented areas can, as indicated from the field work, be viewed as an impact that facilitates improved conditions for socio-economic development for the rural population. Also, new SGFs have been established based on the PP2 SGF concept, some claimed with the support of donors (DFID and USAID).

Conclusion

IWRM related strategies produced during the PP2 have not been implemented to any significant degree nor been addressed or taken up by the Government or donors. The reverse has happened to the regional cooperation component which has with significant and speedy progress achieved huge impact. Likewise, the impact of the SGFs have been overall very positive and its model apparently duplicated, but was crushed by the Idai cyclone and droughts, the latter mainly in Zimbabwe.

# 3 Indicator-Baseline-Value Matrix

A baseline was developed based on the review result and recommendations in the 2017 review. For each component, project and evaluation criterion generic indicators were identified and baseline established for November 2017. Target values for 2020 were proposed (*in italics*) and were to be measured against the baseline for each of the generic indicators. The measures used have been as follows: a brief statement with a colour indicating either progress (green), status quo (yellow) or decline (red).

The overall result of the assessment indicates – as is the case for the conclusions on achievements (Chapter 4) – that most of the indicators have remained at baseline value and have shown little progress but also few regressive trends.

**Table 4. Institutional Development Component: Staff development**

| **Indicator** | **Baseline value** | **Value 2020** |
|---|---|---|
| Staff development plans, including the Capacity Development Strategy, Retention Strategy and HRD/M plans have been developed. | Existing strategies and plans are 'idle', not implemented or revised (ARA-Centro)<br><br>Capacity Building Strategy for ZINWA Save | *Strategic staff development plans and strategies are fully updated and implemented as per available funding*<br><br>ARA: Strategic staff development plans and strategies are not fully updated and implemented.<br><br>ZINWA: Capacity Building Strategy for ZINWA Save has been fully updated and is being implemented |
| Skills level of staff employed with the ARA-Centro and ZINWA Save compared to similar ARAs/ZINWAs. | Current staff skills level and institutional functions as per November 2017 | *Maintenance of skills level and institutional functioning that enable for the achievement of institutional mandates*<br><br>Skills maintenance and institutional functioning overall remain the same as for the 2017 level<br><br>*Full staff compliment with positions at decentralised level filled with capacitated staff*<br><br>ARA: Hire freeze and inadequate replacement structures<br><br>ZINWA: Improved conditions for education and training |
| Performance of ARA-Centro | ARA-Centro performs in a generally | *ARA-Centro has improved its performance relative to its mandate*. |

| | | |
|---|---|---|
| relative to its mandate. | ineffective manner relative to its mandate. | ARA-Centro performs in a generally ineffective manner relative to its mandate. |

**Table 5. Institutional Development Component: Decentralisation**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Decentralisation of transboundary IWRM for government and other stakeholders (Chimoio, PCB, PSCC and sub-committees/councils) | Decentralized units established and functional in the Pungwe basin | *Decentralised units operational as functional entities.*<br><br>Decentralized units established and functional in the Pungwe basin |
| Collaboration on IWRM at local level (Chimoio, districts, and PCBs/PSCCs and committees/councils) | Collaboration on IWRM between decentralised units established and functional | *Collaboration continued and strengthened between decentralised units on IWRM activities*<br><br>Collaboration continued between decentralised units on IWRM activities |

**Table 6. Institutional Development Component: Stakeholder participation**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Stakeholder participation in capacity building activities and exchange visits | Participation structures established and activities executed<br><br>Inadequate or non-existing performance management of stakeholder participation | *Participation structures and activities continued and strengthened*<br><br>Participation structures and activities continued between decentralised units on IWRM activities<br><br>*Performance management structure established and effectively applied in Pungwe Sub-catchment Councils.*<br><br>Performance management structure is inadequately developed |
| Extent of collection of data on water-related conflicts in the basin | Data on conflict resolution are not collected, registered or analysed by ARA-Centro or ZINWA Save | *Data on conflict resolution are collected, registered and analysed by ARA-Centro and ZINWA Save facilitating improved mediation skills among decision-makers & stakeholders*<br><br>Data on conflict resolution are not collected, registered or analysed by ARA-Centro or ZINWA Save |

Table 7. Institutional Development Component: Information and communication

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Degree to which the surface water, water quality and groundwater monitoring network fulfils WMO standards | Surface water network fulfils WMO standards, with the exception of the number of evaporation pans.<br><br>Water quality and groundwater networks do not fulfil WMO standards | *The surface water, water quality and groundwater monitoring network fulfil WMO standards and is maintained.*<br><br>Surface water network fulfils WMO standards, with the exception of the number of evaporation pans.<br><br>Water quality and groundwater networks do not fulfil WMO standards |
| Availability of water management information to managers and other stakeholders | Communication strategy developed, but not institutionalised | *Communication strategy updated and institutionalised*<br><br>Communication strategy updated and institutionalised |
| Data management system in line with the nationally-adopted database and management platforms | Hydstra database (or other format recommended by the national line ministry) not operational | *Hydstra database (or other format recommended by the national line ministry) operational*<br><br>Hydstra database (or other format recommended by the national line ministry) not operational |
| Environmental flow requirements for different reaches | Environmental flows not quantified | *Environmental flows fully quantified*<br><br>Environmental flows not quantified |
| Guidelines for monitoring of environmental flows | Guidelines not developed | Guidelines established and used<br><br>Guidelines not developed |

Table 8. Poverty Reduction Component: Small- and medium dam development

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Feasibility studies elaborated for small/medium dams | 0 | 4 |
| Funding for x small and y medium dams secured | x=0; y=0 | x>0; y≥0 x>0; y≥1<br><br>Funding for the continued works on Gorongosa dam has been secured which is classified as medium |
| x small and y medium dams constructed | x=0; y=0 | x>0; y≥0 x>0; y≥0 Gorongosa is at 95% completion |

Table 9. Poverty Reduction Component: Small-scale IWRM and development Fund (SGF)

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Gender and vulnerable groups in IWRM in Pungwe basin | Gender and vulnerable issues and concerns in IWRM in the Pungwe basin inadequately addressed | *Gender and vulnerable issues in IWRM in the Pungwe basin adequately addressed*<br><br>Gender and vulnerable issues and concerns in IWRM in the Pungwe basin inadequately addressed |
| Clarity of Roles and responsibilities regarding to ownership, technical assistance and operation of the SGF | For all SGF projects an MoU has been signed that clearly states the responsibility of the District Authorities and Associations. | *The district authorities continue to support the local associations with technical assistance and all possible means and take measures if associations do not function well.*<br><br>For all SGF projects an MoU has been signed that clearly states the responsibility of the District Authorities and Associations. |
| Degree to which all involved institutions comply with the roles and responsibilities regarding to ownership, technical assistance and operation of the SGF | Both the districts and the associations comply with the SGF MoU | *Both the districts and the associations continue to comply with the SGF MoU*<br><br>Both the districts and the associations continue to comply with the SGF MoU |

Table 10. Environmental Protection Component: Salinity control

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Pre-feasibility studies | 1 | 1 1 |
| Feasibility studies | 0 (project cancelled) | 0 0 |
| Salinity control construction | 0 (project cancelled) | 0 0 |
| Initiatives established with private sector for salinity control | 0 | 1 0 |

Table 11. Environmental Protection Component: Gold panning management

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Monitoring of water quality parameters related to pollution from | No specific monitoring points for the demonstration projects in place, only ad hoc monitoring | *Monitoring impact at four demonstration projects* |

| | | |
|---|---|---|
| gold panning implemented | | No specific monitoring points for the demonstration projects in place, only ad hoc monitoring |
| Strategy and action plan | 1 completed | *Strategy and action plan updated and implemented*<br><br>No update or implementation initiated |
| Alternative technologies implemented | Four demonstration projects implemented | *Four demonstration projects functioning with a spin off at another four places where alternative technologies are implemented*<br><br>One project functioning and no spin offs registered |
| Funding of alternative opportunities | Two projects funded by SGF | *New projects creating alternative opportunities for gold miners*<br><br>No new projects due to the armed conflict and the two funded projects are not operational. |

Table 12. Environmental Protection Component: Flood and drought warning

| **Indicator** | **Baseline value** | **Value 2020** |
|---|---|---|
| Drought contingency plan developed and implemented | Plan not developed | *Plan developed and implemented*<br><br>Plan not developed |
| Reliable hydrological and flood forecasting models | Reliable model is operational | *Reliable model is operational and used extensively*<br><br>Reliable model is not operational. Models are in process of being developed for Pungwe, Buzi and Save. |
| Transboundary communication implemented | Bi-annual pre- and post-seasonal meetings held between the two countries | *Bi-annual pre- and post-seasonal meetings held between the two countries and protocol on exchange of data and information established*<br><br>Bi-annual pre- and post-seasonal meetings are not held between the two countries and protocol on exchange of data and information established |
| Dissemination procedures for communication products developed | Procedures for communication strategies not developed or institutionalised | *Procedures for communication products and strategy prepared in close collaboration with INGC and other relevant institutions, and institutionalised*<br><br>Procedures for communication products and strategy prepared in close collaboration with |

| | | |
|---|---|---|
| | | INGC and other relevant institutions, and institutionalised |
| Quantification of the number of people vulnerable to floods or droughts | Number of vulnerable people in Zimbabwe not quantified | *Number of vulnerable people fully quantified in the entire basin*<br><br>Number of vulnerable people not fully quantified in the entire basin |

**Table 13. Environmental Protection Component: Integrated water and land use development**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Comprehensive water and land use plan | One Integrated Water and Land Use Strategy in place | *Integrated Water and Land Use Strategy updated and implemented*<br><br>Integrated Water and Land Use Strategy not updated or implemented |
| Coordination mechanism for integrated water and land use development | No coordination mechanism in place | *Coordination mechanism in place and operational*<br><br>No coordination mechanism in place and provincial/district authorities are acting against recommendations in plan |

**Table 14. Regional Cooperation Component: Regional Cooperation**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Establishment of joint water sharing agreements as part of IWRM policies of the two countries | Joint Water Sharing Agreement signed July 2016 – implementation of Agreement initiated<br><br>Establishment of a Secretariat initiated for the Pungwe, Buzi and Save basins | *Progress in the implementation of the Agreement (including actions based on PP2 products)*<br><br>Progress observed and new Buzi Agreement established in 2019 based on the Pungwe Agreement and Save River Agreement to be signed in December 2020.<br><br>*A Secretariat for the Pungwe, Buzi and Save basins fully established and operational*<br><br>Secretariat in progress and planned for establishment during 2021 when Save River has been signed |

**Table 15. Relevance**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| IWRM policies and strategies | Policies and strategies for IWRM in the basin exist | *Policies and strategies continue to facilitate positive IWRM development* |

| | | |
|---|---|---|
| | | No major new policy and strategy changes have emerged that facilitate positive IWRM development |

**Table 16. Sustainability**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Fee collection at ARA-Centro and ZINWA Save | Fee collection system has not improved the revenue for ARA-Centro over the last 10 years despite increased number of clients. Average 8 years (2009-2016) 4.680.000 MZN[13]<br><br>Fee collection has improved 380% for ZINWA Save from 2012 to 2016. | *Fee collection level increased by at least three (3) per cent by November 2020 for the three-year period 2018-2020, compared to the average for the period 2009-2016, i.e. 4.820.000 MZN*<br><br>*Fee collection improved by 25% by November 2020.* |
| Retention of the fees collected by ARA-Centro | Fees collected are retained by ARA-Centro and included in its budget | *Continued retention of the fees collected by ARA-Centro and inclusion in its budget*<br><br>Retention of the fees collected by ARA-Centro retained and included in its budget continued |
| Functional SGF projects | Inadequate structures for maintenance, repair and expansions of SGF projects | *Management and funding structures for the maintenance, repair and expansion of the SGF projects established and functional*<br><br>Inadequate structures for maintenance, repair and expansions of SGF projects |

**Table 17. Impact**

| Indicator | Baseline value | Value 2020 |
|---|---|---|
| Use of PP2 products by other initiatives or organisations | PP2 strategies and other products developed and available | *NB: No specific target defined. The review in 2020 should collect evidence of the use of PP2 products in other policy and planning processes as an indicator of uptake and potential impact on broader policy decisions and practices.*<br><br>Mixed up-take of PP2 products |

[13] APR 2016 p. 50

# 4 Conclusions on Achievements

Based on the analysis of the developments covering the period 2017-2020 conclusions have been made for each of the sub-component of the PP2 (Chapter 2.1 Effectiveness) as well as for the other two evaluation criteria (Chapter 2.2 Sustainability and Chapter 3. Impact). This section presents a *summary of the conclusions* made in Chapter 2 Findings, and *compared* to the achievements made at the time of termination of the PP2 support in 2017.[14] The tool for comparison is the 5-point Lickert scale.

As was the case in the 2017 review the scoring has combined an assessment of the degree of achievement for the 2017-2020 period, and the strength of the evidence supporting that assessment. Taking these two criteria together, a higher score was awarded when there was ample and robust evidence of progress, whereas a lower score was given to the sub-components/evaluation criteria that had achieved less progress, and for which evidence of achievements was scant, mostly subjective and less possible to validate from external sources. The resulting scores for 2017 and 2020 are presented in Table 18 and Table 19 and a brief narrative of the conclusions given below.

**Table 18. Effectiveness: Degree of sub-component achievement, 2017 and 2020**

| ***Sub-component*** | ***Degree of achievement, from 1 (low) to 5 (high), 2017*** | ***Degree of achievement, from 1 (low) to 5 (high), 2020*** |
|---|---|---|
| ***Institutional development*** | | |
| 1. Staff development | 3,0 | 2,0 M ; 4,0 Z |
| 2. Decentralisation | 4,5 | 4,5 |
| 3. Stakeholder participation | 3,0 | 3,0 |
| 4. Information and communication | 4,0 | 4,0 |
| ***Poverty reduction*** | | |
| 1. Pungwe basin investment facility | 1,0 | 1,0 |
| 2. Small-medium dam development | 3,5 | 3,5 |
| 3. Small-scale IWRM&D fund (SGF) | 4,0 | 3,0 |
| ***Environmental protection*** | | |
| 1. Salinity control | 1,0 | 1,0 |
| 2. Gold panning management | 3,0 | 2,0 |
| 3. Flood and drought warning | 4,0 | 4,0 |
| 4. Integrated water and land use | 2,0 | 1,0 |
| 5. Environmental flows | 1,0 | 1,0 |
| ***Regional cooperation*** | 5,0 | 5,0 |

[14] Sørensen, S.E. et al. (2018), p. 82

Table 19. Effectiveness, Sustainability and Impact: Degree of achievement 2017 and 2020

| *OECD-DAC evaluation criterion* | *Degree of achievement, from 1 (low) to 5 (high), 2017* | *Degree of achievement, from 1 (low) to 5 (high), 2020* |
|---|---|---|
| Effectiveness (*average of scores of Table 18*) | 3,0 | 2,8 (2,76) |
| Sustainability | 1,5 | 3,0 |
| Impact | 2,0 | 2,0 |

To summarise the result of the comparison:

- Effectiveness has deteriorated slightly from 2017 to 2020 primarily stemming from lower scores in the Environmental component.

- As for Sustainability a clear tick-up was observed particularly due to both governments' strong efforts to effectuate decentralisation as well as an institutional overhaul of the regional water administration (ARA) structure in Mozambique.

- The Impact score for 2020 remains the same as for 2017 due to a mixed picture, including no take-ups of PP2 products (particularly strategies) by government and donors on the one side and the continuous strengths in the regional cooperation component and the SGF model being duplicated, on the other.

**Effectiveness**

Staff development: The evaluation has concluded to give a score of 3,0 to the staff development subcomponent, equivalent to the 2017 score, while at the same time highlight that for ARA-Centro the score is 2,0 and for ZINWA Save 4,0. The reason being that, for ARA-Centro has suffered from reduction of staff, limited capacity building, a government freeze on recruitment, inadequate replacements structures and deterioration of staff conditions at decentralised level (i.e. Chimoio). As for ZINWA Save a stable staff condition has been strengthened, partly from improved condition for continuous educational opportunities for staff and capacity building strengthened from the establishment of the Runde training centre and collaboration with universities. The three new service centres have temporarily resulted in tapping into the staffing and equipment situation of ZINWA Save.

Decentralisation: The evaluation has concluded to give a score of 4,5 to the decentralisation subcomponent, equivalent to the 2017 score. The reason being that a continuous strong decentralisation process has occurred in both countries and services by the local authorities have continued to the rural communities and the SGFs. Yet, some deficiencies resulted from the decentralisation have occurred at lower levels (e.g. Chimoio).

Stakeholder participation: The evaluation has concluded to give a score of 3,0 to the stakeholder participation subcomponent, equivalent to the 2017 score. The reason being that while no real positive development has occurred as regards dedicated efforts to engage vulnerable groups and women, general engagement in addressing critical water conflicts amiably between involved parties, has proven effective. Violent cases have been avoided.

Information and communication: The evaluation has concluded to give a score of 4,0 to the information and communication subcomponent, equivalent to the 2017 score. The reason being that five indicators measured in 2020 were equivalent to the 2017 situation and availability of water management information to managers and other stakeholders had improved through the development and implementation of a communication strategy.

Pungwe Basin Investment Facility: The evaluation has concluded to give a score of 1,0 to the Pungwe Basin Investment Facility subcomponent, equivalent to the 2017 score. The reason being that Mozambique lacks willingness to invest in capital-intensive projects considered to be financially unsustainable, weighing strongly against a likely capacity of a merged ARA-Centro to provide the necessary monitoring functions to such a project.

Small-medium scale dam development: The evaluation has concluded to give a score of 3,5 to the small-medium scale dam development subcomponent, equivalent to the 2017 score. The reason being that in terms of progress, works has begun again on the Gorongosa dam, but other than that all other aspects remained status quo.

The small-scale IWRM&D grant fund (SGF): The evaluation has concluded to give a score of 3,0 to the SGF subcomponent, one score-point down from the 2017 score, at 4,0. The reason being that while positive socio-economic development was observed in several of the SGFs prior to the occurrence of external events (cyclone and droughts) the response of the basin level IWRM system as a whole has shown its inability to guarantee sufficient shelter for the rural communities. While warning systems appear to work well mitigation measure for rural communities affected by droughts or floods/cyclone has not been addressed effectively as is evident from the SGF field data collection.

Salinity control: The evaluation has concluded to give a score of 1,0 to the Salinity control subcomponent, equivalent to the 2017 score. The reason being that no new initiatives have been implemented. However, ARA-Centro remains alert about the issue and is trying to secure funding for salinity control.

Gold panning management: The evaluation has concluded to give a score of 2,0 to the Gold panning management subcomponent, down one point to the 2017 score, at 3,0. The reason being that of the four demonstration projects implemented only one remains functioning by 2020 and no spin off projects have materialised. In addition, no new projects providing alternative livelihood options for gold miners have materialised and the two SGF funded project are not operational due to the armed conflict.

Flood and drought management: The evaluation has concluded to give a score of 4,0 to the flood and drought management subcomponent, equivalent to the 2017 score. The reason being that despite the flood forecasting model is not being operational and the two countries not meeting on a regular basis, the information flow via social media and other means has improved and in Mozambique communication has improved substantially via improved coordination with main stakeholders such as INGC.

Integrated water and land use development: The evaluation has concluded to give a score of 1,0 to the integrated water and land use development subcomponent, down one point to the 2017 score, at 2,0. The reason being that the Integrated Water and Land Use Strategy has not been updated and coordination has deteriorated between relevant authorities, i.e. ARA-Centro and provincial/district authorities due to different priorities.

Environmental flows: The evaluation has concluded to give a score of 1,0 to the Pungwe Basin Investment Facility subcomponent, equivalent to the 2017 score. The reason being that status quo prevails and the component still awaits external financing and implementation support from GEF and IUCN in order to progress in lieu of nationally financed efforts and lack of reaching bilateral agreements on specific environmental flow requirements.

Regional cooperation: The evaluation has concluded to give a score of 5,0 to the regional cooperation component, equivalent to the 2017 score. The reason being that the process of the establishment of Joint Water Sharing Agreements between Mozambique and Zimbabwe has been highly successful over the 2017-2020 period. With active and dedicated support of the two governments supported by donors two agreements have come to fruition during the period (Buzi and Save) and the Secretariat is being planned and funded for 2021. This successful process can to a large extent be attributed the PP2s efforts to facilitate the agreement process at its initial stages.

**Sustainability**

The evaluation has concluded to give a score of 3,0 to the sustainability evaluation criteria, up 1,5 points compare to the 2017 score, at 1,5. The reason being that while the overall unsustainable nature of the ARA-Centro as found in the 2017 review persisted throughout the 2017-2020 period, including staff instability and underperformance, the *process* over the period towards strengthening the overall performance of the ARA-Centro (and the other ARAs) is seen as significant improvements to the sustaining of the new and merged ARA-Centro. This particularly includes improved security of funding from the MoF to the ARAs, and the merger of the ARAs into more effectively performing units servicing better water clients and manage better the hydrographical basin. As for ZINWA Save levies were significantly eroded by high inflation rates. However, the financial sustainability of ZINWA is not being threatened.

**Impact**

The evaluation has concluded to give a score of 2,0 to the impact evaluation criteria, equivalent to the 2017 score. The reason being that the IWRM related strategies produced during the PP2 have not been implemented to any significant degree nor been addressed or taken up by the two governments or donors. On the other hand, the regional cooperation component has with significant and speedy progress achieved huge impact. Likewise, the impact of the SGFs have been overall very positive and its model apparently duplicated, yet the positive impact was crushed by the Idai cyclone and droughts, the latter mainly in Zimbabwe.

# 5 Lessons Learned

## 5.1 GENERAL

The approach of dividing the evaluation of the PP2 into two separate stages have proven useful; i.e. basically a review of the outcome of the PP2 at its termination in 2017 and an impact related and final evaluation in 2020. Developments over a longer period of time post-PP2 provide a significantly better opportunity for assessing the impact of the Swedish support, and as the ToR refer to, the intention has been to "make it possible to evaluate the sustainability and continued ownership of the programme". The three-year period with no Swedish support and limited donor funding for larger development activities in the Pungwe Basin has been a challenge for the two water institutions. Yet, as shown in the findings, important steps have been taken by the two Governments to proceed to strengthen transboundary IWRM as well as IWRM in-countries, through for example progressing with joint water agreements and initiating strong policies on decentralisation.

The role of the stakeholder participation on a broad scale, from vulnerable groups and women to national ministries were already addressed in the 2017 review. While the involvement of vulnerable groups and women was highlighted as an important cross-cutting factor in the PP2 and reflected as a question of 'particular importance' (ref. ToR), little was achieved, as has been the case for the post-PP2 period. Whether to specifically target women in IWRM when resources are limited is a valid question. Measured against the likely benefit derived from prioritising other development areas, such as dam construction and SGF-like projects, the spill over effect from these may benefit women far more, for example in terms of higher income for improvement of family houses, children's education and health.

When designing comprehensive and institutionally complicated (including transboundary) IWRM projects it is critical to have a high degree of *flexibility* as regards budgetary allocations for easier to swop between components. The PP2 experience obviously shows that several sub-components were not to be implemented as further investigations of their feasibilities resulted in them being scrapped or reduced to superficial activities (Investment Facility, environmental flows, and water and land use). While actual swopping did occur and the Investment Facility was 'replaced' with the SGFs, the approach was not based on flexibility but on a perception of 'failed design' (the Facility) and 'an alternative option' (SGFs) rather than on a dedicated and well understood 'flexibility'.

## 5.2 ARA-CENTRO / ZINWA SAVE

The merger of the ARAs was effectuated because of the unsustainable nature of two of the five ARAs, one of which was the ARA-Centro. The low score given to ARA-Centro's sustainability in the review in 2017 appeared appropriate. As it was not within the mandate of the 2017 review to analyse other ARAs' performance (ref. ToR), the recommendations could not have foreseen a merger option. The PP2 management should early on have realised the deficiencies of the staffing situation and its impact on the implementation of the PP2.

PP2 brought practical knowledge and organisational strengthening to farmers through the support to associations (SGFs) which facilitated a framework for socio-economic progress. The existence of small- and medium dams is critical for the rural communities to maintain positive developments and there is a need for more dams to be constructed.

Many of the PP2 initiated SGFs suffered devastatingly from several major external events in the period 2017-2020, e.g. the continuity of armed conflicts, the cyclone Idai and severe droughts. An important question could therefore be: to what extent would it have been possible for the PP2 to have established effectful mitigation measures to these events? Most likely a cyclone of the magnitude of the Idai would probably have been difficult to address. Yet, better sheltering of machinery and irrigation equipment could have reduced the degree of damaged assets; and bursting and destruction of water pipes may have been reduced significantly if pipes had been of better design and quality and better placed and parts appropriately stored.

Severe droughts over several agricultural seasons as experienced in Zimbabwe have had serious consequences, including loss of agricultural produce and income, illegal water abstraction and increasing number of water conflicts. Obviously, construction of small- and medium dams, could have been prioritized by PP2, even though severe droughts were not experienced during the PP2 supported period. Combined with SGF-like activities dam construction would have had long-term positive socio-economic impact on farmers and rural communities. The capacity of the ARAs to maintain the small- and medium dams would also have confirmed a sustained development. While flood and drought warning systems have been developed and implemented, effective mitigating measures and guidance to rural communities on how to cope with the results of floods and droughts is not in place.

More resources need to be allocated to water use monitoring in the catchment in Zimbabwe. The droughts experienced in the past two seasons and the increase of water use among permits and non-permit holders has increased competition and demand for water use. This increased demand needs to be monitored for equitable water allocation and distribution for the benefit of all local water users and transboundary requirements.

The lack of involvement of other stakeholders in areas in which ARA-Centro (and ZINWA Save) has little or no mandate has caused limited results in sub-components such as gold panning and integrated water and land use management. Obviously, cooperation and clear division of responsibilities between relevant ministries and ARA-Centro should at an early stage been addressed by PP2. The continuous lack of progress

and results in these sub-components since the termination of PP2 in 2017 is a clear indication of this lack of cooperation.

Since the start of PP2 water quality has been one of the main challenges of the Pungwe basin. PP2 focused on improving this aspect and an adequate water quality monitoring system is a vital part of being able to manage and address water quality issues, i.e. pollution from gold panning. Currently ARA-Centro does not have an adequate water quality monitoring system in place due to the lack of a laboratory for water sample analysis. In order to tackle the pollution from gold panning, authorities at various levels need to intervene and without proper data it is a challenge for ARA-Centro to address the issue with other authorities. This should have been addressed earlier in the PP2 implementation in order to setup a sustainable system.

Reliable hydrological and flood forecasting models have not been developed, and this is a major setback for being able to manage floods and protect vulnerable population and infrastructure. The capacity issues both human and financial at ARA-Centro should have been considered at an early stage when designing the intervention to address the flooding component. Involvement and cooperation with the national authorities should have been initiated to scope for models that could be used by several ARAs who could have shared expenses towards development and licenses, etc.

# 6 Recommendations

## 6.1 ASSESSMENT OF THE RECOMMENDATIONS IN THE 2018 REVIEW REPORT

Assessment of relevance and uptake of recommendations provided in the 2018 review report is presented below. The assessment is based on the findings from this final stage of the evaluation and those recommendations that seem still fully or partly relevant have been included in the final group of recommendations for the entire evaluation exercise.

The recommendations for Sida have all remained relevant and thus included in the total number of recommendations for Sida for the entire evaluation. To which extent the 2017 recommendations have been applied in subsequent and similar comprehensive and complex programmes following the 2017 review is beyond the mandate of this evaluation to contemplate.

**Table 20: Recommendations for ARA-Centro and ZINWA Save 2017 and their relevance for 2020**

| Recommendations 2017 | Assessment of relevance 2020 |
|---|---|
| Both organisations, in particular ARA-Centro should prioritise human resource management, as staff is a key resource for success. Realistic approaches to improving employee performance is key, as well is improved internal communication. | The recommendation is still highly relevant as derived from the findings on staff development. ARA-Centro should invest to increase the number of specialized human resources and ZINWA when recruiting new staff categories. It is expected the overhaul and merger process of ARA-Centro and ARA-Zambeze will bring in an update of HR strategies but also new internal communication challenges. |
| Both organisations should prioritise investments in equipment and focus on expanding and maintaining their monitoring networks, such as water quality and flood, and drought monitoring equipment. | This recommendation is still relevant and have been specified and broken down further and new recommendations presented. |
| Both organisations should work together with other institutions to organise billing and fee collection, and to continuously update the client data. | This recommendation is not relevant as the process is already in motion. ZINWA Save is working with Pungwe subcatchment council in the billing and collection of levies; ARA-Centro awaits the approval of the legislative process for this purpose. This process is at the ministerial level. Data software are being applied for both organisations. |

| Recommendations 2017 | Assessment of relevance 2020 |
|---|---|
| With respect to marketing and public relations both organisations should explain clients what they are doing and why clients are requested to pay for the services provided. This outreach should be done by skilled decentralised staff and stakeholder groups. Moreover, the communication and information system should be improved by investing in new means of communication and tailoring products to the individual targets groups. | This recommendation is still relevant as non-paying water users constitute if not a significant number, then sufficient to allocate enough resources for the future expectation of increase in revenue. This should be done also from a moral perspective. |
| The responsibility for support and monitoring of the current 33 SGF projects should be handed over to local government and/or civil society organisations. Close collaboration between all the parties involved should be continuously encouraged. This could include, for example, technical support for more effective agricultural practices, ensuring benefits for disadvantaged groups in the project areas, and identifying funding mechanisms, such as micro-finance. | This recommendation is still relevant. The field work findings saw many SGFs to some extent being engaged with local authorities on various support, including those mentioned in the recommendation. Yet, these efforts should be strengthened through more effective implementation of the MoUs. |
| Both organisations should reactivate and train beneficiary associations with a focus on the financial sustainability for the operation and maintenance of the projects and the increased commercialisation of the associations. The latter is an important driver in both countries, as there currently exists a local (and international) market for (contract) farming to produce fruits and vegetables. | This recommendation is still relevant. The Idai cyclone and droughts have severely impacting on communities' water access and low production of agricultural produce and therefore present a very different picture of challenges and poverty concerns - as compared to 'normal' conditions. Still as things get back to 'normal' training and commercialization are key to future financial sustainability of the communities. Being somewhat beyond the core function of the two water institutions other partner organisations, e.g. local authorities and NGOs, should lead. |
| In both organisations any additional income should be used to expand irrigation systems and create employment for the surrounding communities. ARA-Centro and ZINWA Save should support the associations to exploit a dynamic market. In Mozambique support could constitute a collaborative effort of ARA-Centro, through the MUPB Chimoio and the local government, through the SDEA activities. Support could also include connecting the SFG projects to relevant programmes running in parallel and supported by international donors (e.g. the | This recommendation is still valid as regards expansion of irrigation systems but less as regards exploiting the market, which is beyond the core function of the two institutions.<br><br>None of the two water institutions has capacity to support this function. Their revenue streams are not enough to invest in the SGFs. They actually have challenges in assisting the farmers in existing projects let along invest additional in SGFs. Their role could be to spearhead such a process using |

| Recommendations 2017 | Assessment of relevance 2020 |
|---|---|
| World Bank) or the national governments (e.g. Maguta in Mozambique). Both organisations should coordinate and exchange information with important stakeholders with respect to possible future water scarcity, including the water utility FIPAG, the World Bank-funded agricultural projects and provincial agricultural authorities in Mozambique. | the current SGFs as good examples in order to attract more partners into the development of additional projects. |

## 6.2 RECOMMENDATIONS FOR SIDA

1 Sida should take on the approach of dividing the evaluations of projects into two separate stages, the first at the termination of the project (a review) and the second stage three years after the review. Such an approach provides the advantages of observing and measuring developments over a longer period of time and a significantly better opportunity for assessing the impact of Swedish support.

2 Sida should realise that mainstreaming gender into large and complex (IWRM) projects suffers from positive effect and may therefore not be advisable to pursue. Rather specific projects or components with assigned budgets and focused objectives and outputs for empowering women are more likely to be effective. The larger project will, if successful, benefit farmer families and communities, thus also women.

3 Sida should when engaged in designing comprehensive and institutionally complicated (including transboundary) IWRM projects apply a high degree of flexibility as regards budgetary allocations for easier to swop between components as these may advance distinctly differently as the project develops.

4 Sida should focus on strengthening the core business of beneficiary organisations, and not include themes or activities that are outside their mandate or sphere of control.

5 Sida should concentrate on a smaller number of activities with greater potential for impact, and combine interventions targeting the organisations' strategic mandates, capabilities and planning with investments in the implementation of concrete measures. When doing so, it is important to avoid overloading the beneficiaries' staff with additional tasks for which the organisation does not have the capacity.

6 Sida should carry out a more effective monitoring and supervision of programme implementation, using processes and tools as simple as possible for monitoring progress and measuring achievements.

7 Sida should reconsider channelling funds through a national financial system of partners, when complications and significant delays are associated with such practice.

## 6.3 RECOMMENDATIONS FOR ARA-CENTRO / ZINWA SAVE

**Human resources, marketing, strategies and management**

8 Both organisations should prioritise human resource development and management. The institutional overhaul of the ARAs and the merger process of ARA-Centro and ARA-Zambeze should bring in an update of human resources strategies while addressing new internal communication challenges. ZINWA Save must address its human resource deficiencies (especially in hydrology) in connection with devolution of staff to the new service centres.

9 Both organisations should initiate marketing and public relations efforts to explain clients what they are doing and why clients are requested to pay for the services provided. As such information products and communication channels should be further improved to suit different target groups.

10 Both organisations should consider to hold annual peer reviews on activities carried out in the Pungwe basin and establish key performance measurement on progress for activities agreed to.

11 ARA-Centro should prioritise developing a Strategy to deal with projected future water scarcity caused by large agricultural investment projects in the Pungwe basin.

12 ZINWA Save should prioritise developing specific strategies to source maintenance parts e.g. logger batteries to ensure that data is collected continuously. Sourcing should from local suppliers avoiding foreign currency use to import any parts.

**SGFs / rural communities and associations**

13 Both organisations should prioritise to collaborate with relevant national and local authorities on how best to support farmers and rural communities in their coping with the results of floods and droughts in their localities – in terms of protecting their assets from destruction, including irrigation machinery and equipment, and agricultural produce, through for example increasing the number of small- and medium dams.

14 Both organisations should agree to develop an operation manual for the SGFs. This must also highlight operating pressure, quality of components recommended and the planned and scheduled maintenance of all equipment and reticulation to reduce unforeseen challenges, such that burst water pipes are eliminated.

15 In the support of the PP2 established SGF projects close collaboration between all the parties involved should be continued and sharing responsibilities as per MoU contracts. This could include, for example, technical support for more effective agricultural practices, ensuring benefits for disadvantaged groups in the project areas, and identifying funding mechanisms, such as micro-finance.

16 Both organisations should consider instigating competition among SGF supported farmers and rural communities to facilitate improved IWRM practices. The successful

irrigation competitions held by the Department of Irrigation in Zimbabwe could be an inspiration.

**Investment, monitoring network and data management**

17 Both organisations should prioritise investments in equipment and focus on expanding and maintaining their monitoring networks, including water quality and flood and drought monitoring equipment.

18 Both organisations should prioritise the improvement of the rainfall network in order to improving the flood warning system, and coordinate with national meteorological institutes, who should take the lead on this endeavour.

19 Both organisations should consider contracting an information technology specialist to maintain information management systems and/or databases.

20 ARA-Centro should prioritise the implementation of the groundwater monitoring network improvement plan; currently only 3 boreholes are operational.

21 ARA-Centro should prioritise improving cooperation with water relevant partners such as the water utility FIPAG in terms of water demand monitoring.

22 ZINWA Save should prioritising investing in and maintaining an adequate data management system in line with the nationally-adopted database and management platforms, i.e. Hydstra or similar.

23 ZINWA Save should prioritise the mapping of flood risk areas under the Civil Protection Unit, which would require investments in flood modelling software to produce more targeted flood models. This would provide data such as flooding extent and water depth or water velocity that are essential in providing data for flood risk management.

24 Both organisations should engage local communities in understanding the importance of monitoring equipment, have Data obtained from the measuring devices to be re-packaged and shared at local level to show the importance of having such monitoring gadgets. Currently data is shared with government entities only.

# Annex 1 – Terms of Reference

## Terms of Reference for the evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2)

Date: 2016-09-28
Case number:

### 1.Background

Sweden has supported joint management of water resources in the Pungwe River Basin since 1998, when the preparation of a project for developing an integrated water resources management strategy for Pungwe was initiated by the governments of Mozambique and Zimbabwe with Swedish assistance (PP1). The strategy was based on a monograph report on current physical, environmental, institutional and socioeconomic conditions in the basin, and on sector studies that provided the basis for different development scenarios. In addition to enhancing cooperation between the basin agencies in the two countries –ARA-Centro in Mozambique and ZINWA Save in Zimbabwe -the strategy project also covered institutional capacity development activities related to hydrological monitoring and modelling, office infrastructure, and increased stakeholder engagement and awareness.

At the same time as the strategy was being finalised in 2006, the preparation of a more comprehensive programme (PP2) that would follow and build on PP1 was initiated. The following development objective and components of PP2 were defined:

Development objective

To strengthen relevant institutions, stakeholders and systems at all appropriate levels for the joint, integrated and sustainable management of water resources in the Pungwe River Basin, and to stimulate and support appropriate development-oriented investments in the basin that contribute to poverty reduction and environmental sustainability.

Components

1.Institutional Development
2.Stakeholder Participation
3.Information and Communication Systems
4.Pungwe Basin Investment Facility

5.Critical Development Projects

PP2 was thus intended to have a focus both on institutional strengthening and support to development-oriented investments.
In order to enhance ownership and provide for more sustainable capacity building in the basin agencies, the management set-up for PP2 was made different from that of PP1. While PP1 was
2largely implemented by an international consultant firm, it was decided to use an approach with a more active involvement by the basin agencies for PP2. A Project Support Unit (PSU) under the supervision of a management committee set up by ARA-Centro and ZINWA Save was put in place, with capacity to provide administrative, financial, procurement and technical support to the programme. The PSU would thus fall between a traditional external programme management unit and a situation in which programme management would be fully integrated with the existing institutions.

Implementation of PP2 started in late 2007 with an intended implementation period of 5 years. During an extension phase of three years 2014 –2016, the programme has kept the same development objective but with the following re-defined components:

1.Institutional development with a focus on human resources and sustainability of institutions
2.Poverty reduction
3.Protection of the environment
4.Regional Cooperation

The programme is coming to a close by end of 2016, with some programme closure activities extending to end of March2017.

Due to the original design of the evaluation there are some special procedures that need to be followed due to the length of the Sida's framework agreement for evaluation that reaches until 2017-08-31. As the final evaluation will take place in 2020the intention is to conduct the procurement in the two following steps:

- The first step of establishing a baseline in accordance with the methodology proposed by the Consultant will be undertaken no later than December 2016.
- The second step, to be realized in 2020, can only be guaranteed if the renewed framework agreement has the same setup with one winning provider. The second phase of the evaluation will be conducted with the then current price range, enabling adjustments of the prices listed in the original call-off. It is within Sida's framework agreement for evaluation stipulated the possibility of extending the contracted party twice. The first extension period will be extended until 2018-08-31 and a second extension could enable an extension until 2020-08-31.

## 2. Evaluation Purpose

The purpose of this evaluation is to evaluate the results of the Swedish support to joint water resources management in the Pungwe River(PP2)basin as described above, with a focus on outcomes and impact. The evaluation will take place in two phases, starting with an inception phase to establish indicators and end-of-programme values for these

indicators. The reason for this is that the actual evaluation will take place two years after the end of Swedish support. This is intended to make it possible to evaluate the sustainability and continued ownership of the programme and its
3resultsagainst both the pre-programme baseline and the intermediary baseline to be established at the closure of the programme.

The purpose is also to see whether the institutions active in PP2 have the proper mandate and capacity to fulfil their mission. Another purpose is to establish to what degree poverty reduction and environmental protection has been achieved and sustained, and the impact this has had on local communities.

## 3.Evaluation Questions

In line with the development objective of the programme, the two overarching evaluation questions that will guide the evaluation areas follows:

1.To what extent has the programme contributed to a more sustainable management and development of the water resources and to enhanced collaboration between the two countries?
2.To what extent has the programme had an effect on poverty reduction and environmental sustainability?

The evaluation will be based on OECD-DAC principles, criteria, procedures and terminology for development evaluation. The evaluative findings in the evaluation report will thus be structured under the following criteria:
1.Relevance:Has the programme conformed to the needs and priorities of stakeholders and target groups?
2.Efficiency:Can the costs for the programme be justified by its results?
3.Effectiveness:Has the programme achieved its objectives?
4.Impact:What are the long-term effects of the programme, positive and negative, intended and unintended?
5.Sustainability: Has there been a continuation or longevity of activities and results of the programme after its completion?

The overall evaluation questions as well as the main evaluation criteria will be broken down into sub-questions by the Consultant during the inception phase, and interview guides for specific groups of interviewees will be prepared.

The following specific questions have been identified as particularly important:
- Has the Swedish support contributed to sustained poverty reduction in the Pungwe basin and what is the impact of this poverty reduction?
- Which socio-economic groups have participated in the programme and how have the different groups benefitted from programme results?
- To what extent have marginalised groups participated and how have they benefitted from programme results?
- Have women, men, girls and boys participated equally in the programme and have they benefitted equally from programme results?

•Has the Swedish support contributed to improved water quality(or reduced the deterioration of water quality) and, if so, how has this impacted the local communities and who has benefitted?
•Has the institutional capacity been sustainably enhanced and, if so, has this allowed for effective and co-creational decision making among stakeholders, as well as implementation of theses decision?
•Has the collaboration between the two countries and among different stakeholders, been sustainably developed, and has it been effective in fulfilling the overall objective of the programme?
•Has there been any replication of methods, ambitions and/or scope in other basins as a result of the programme? Crosscutting issues central to Swedish development cooperation, including poverty alleviation, gender equality and resilience to environmental and climate change, as well as conflict sensitivity shall be considered throughout the evaluation.

Based on the evaluation findings, the Consultant will identify lessons learned and deliver recommendations to the stakeholders of the evaluation on what they see as constructive ways forward to enhance and strengthen their capacity and the sustainability of programme results. Specific recommendations to Swedish authorities in terms of project design and management shall be clearly stated.

## 4.Scope

The evaluation shall cover the entire original scope of PP2, including all institutions, stakeholders and partners that the programme has engaged with. The scope shall also cover the modus operandi with the channelling of funds through national financial systems in Mozambique, as well as the functions of the PSU.

## 5.Approach and Method

A key aim of the evaluation is to evaluate the effects of the Swedish support and the actual evaluation will therefore take place two years after the end of the programme activity period. It is, however, deemed important that the evaluation process start already before the closure of the programme. The first phase of the evaluation, the inception phase, will be conducted with a two-fold aim:

1)Submit a proposal to the Swedish Embassy in Addis Ababa for discussion where the scope, detailed methodology and suggested indicators are presented.
2)Establish the baseline values of the agreed indicators.

After two years, the evaluation team shall revisit the programme area and acquire updated values of the indicators, measured in the same manner. This will form the basis for the evaluation.

## 6.Stakeholder Involvement

The stakeholders in the Pungwe basin are many in number and with different interests. It is therefore of great importance that the evaluators reach out to the different stakeholders on different administrative levels to ensure a nuanced evaluation. This will also foster in-depth knowledge of the programme and its accomplishments as well as detractions.

Draft evaluation findings shall be presented to the stakeholders engaged in PP2. The final evaluation report shall also be distributed to them.

## 7.Evaluation Quality

The evaluation shall conform with OECD/DAC's Quality Standards for Development Evaluation, which provide a guide to good practice and identify key pillars needed for quality evaluations in terms of both process and end product. The evaluators shall use the OECD/DAC Glossary of Key Terms in Evaluation. The evaluators shall in their bid specify how quality assurance will be managed by them throughout the evaluation, including how they will handle any issues related to the time gap between the inception report and the final evaluation phase.

## 8.Time Schedule, Reporting and Communication

The inception phase shall have started by January2017andfieldworkshall be concluded byApril2017. The inception report shall be delivered to the Swedish Embassy in Addis Ababa no later than February 2017. The report will then be reviewed by the Embassy and the basin agencies, which, if deemed necessary, will engage in dialogue with the Consultant who may have to revise their proposal of indicators in order to fully capture the width and depth of the programme.

The actual evaluation will start in January 2020and is expected to be concluded by May2020. In order to provide an opportunity for comments and to avoid any errors of fact or misunderstandings, a preliminary version of the draft final report shall be submitted to the Embassy in Addis Ababa and the concerned stakeholders before 31April2020. The Consultant will then allow two weeks for comments and corrections of errors, after which the final version of the draft report will be prepared and submitted.

The final report shall be submitted to the Embassy in Addis Ababa no later than two weeks after the Embassy and the concerned stakeholder authorities, agencies and organisations have submitted their comments to the final draft report. In addition, a video or telephone conference will be arranged with the Embassy where the results will be discussed.

The final report shall be maximum 30 pages, excluding appendices and annexes. In addition, it shall contain an executive summary of maximum 5 pages. The report shall be written in English and submitted to the Embassy in Addis Ababa via e-mail. Both the draft and final versions of the report shall have been professionally proofread and edited before being sent to the Embassy.

The Consultant shall be responsible for organising meetings and interviews with relevant stakeholders. The Embassy in Addis Ababa and the PSU can assist the Consultant with contact details to key interviewees at the start of the inception phase. The Consultant shall be responsible for all travel arrangements, such as booking of tickets and hotels.

The implementing institutions , Sida HQ and the Embassy in Addis Ababa will provide the necessary background documentation.

The final version of the evaluation report shall also be communicated to the Africa Department at Sida Headquarters, and to the respective Heads of Development Cooperation at the Swedish Embassies in both Harare and Maputo.

## 9. Resources

The Consultant must in the offer state the amount of resources and time they need to carry out the tasks stated in these Terms of Reference. This shall cover the following:

- Amount of work days
- Fee levels of consultants
- Reimbursable costs

The costs shall be broken down between reimbursable costs and fees together with a cost ceiling for the two kinds of costs. It should also from the offer be clear what amount of time the Consultant deem necessary to spend on location in the two countries. All travel arrangements shall be the responsibility of the Consultant.

The budget ceiling for the evaluation is 1 100 000SEK(one million one hundred thousand)in total.

## 10.Evaluation Team

The team of consultants shall have:

- Excellent knowledge and documented experience from the field of natural resource management, including integrated water resources management and joint river basin management.
- Good knowledge and documented experience of working with sustainable development and poverty reduction.
- Good knowledge of and documented experience of conducting evaluations, reviews and impact assessments.
- Good methodological, analytical and communication skills.
- Experience from the Southern Africa region and its frameworks for regional integration and cooperation, in particular in the area of Transboundary Water Management.
- Good command of the English and Portuguese languages.
- Knowledge and experience of working with poverty alleviation, rights and gender issues.

The team members must be independent, have no commitment with the institutions evaluated and have no stake in the outcome of the evaluation.

## 11.Appendices

Programme documents, reports and other documents deemed necessary will be made available after the finalisation of the procurement of the evaluators and upon their requests.

# Annex 2 – Inception Note

## Introduction

Sweden has been engaged in the in joint management of the Pungwe Basin since 1998 and its development support was completed in April 2017. The Pungwe Basin Transboundary Integrated Water Resources Management (IWRM) Development Programme (PP2) was initiated in 2007 and a first phase evaluation of the Programme was carried out in period September 2017 and May 2018 and the report published in 2018.[15]

The first phase of the evaluation found that the PP2 was generally effective, especially in terms of strengthening the capacity of the two key water institutions, i.e. ARA-Centro in Mozambique and ZINWA Save in Zimbabwe, while institutional improvements proved more difficult to achieve. The PP2 contributed to the regional cooperation, yet efficiency could be improved. Concerns was raised as regards the future sustainability of the programme results given fragilities in staffing and financial resources, especially in Mozambique. The recommendations emphasized any follow-up programmes to focus on a smaller number of activities targeting the core business of the basin management organisations, and on strengthening the financial and technical sustainability of programme results.

A data baseline and target values were set for the second phase of the evaluation which was to be carried out in 2020. The baseline was developed based on the review result and recommendations of the first phase. As such the baseline forms the basis for this final phase of the evaluation of the PP2, covering the period April 2017 until mid-2020. This Inception Note is based on the previously prepared Concept Note submitted to Sida in July 2020 as regards the implementation of the final evaluation of the PP2. The Concept Note was approved by Sida on 1st July 2020. It has been further developed as a part of the Inception Phase in which we have elaborated further on the concept, gather additional information and organized for the implementation and data collection phase.

## Evaluation Objective and Questions

The evaluation purpose has been outlined in the ToR for the assignment. It focused on assessing impact of project results. The main evaluation questions were to assess to which extent the PP2 contributed to more sustainable management and development of water resources and to enhancing the collaboration between the two countries as well as to which extent poverty reduction and environmental sustainability has been

[15] https://www.sida.se/Svenska/publikationer/160414/evaluation-of-the-pungwe-basin-transboundary/

achieved and the impact this has had on the local community, including marginalised groups.

## Approach and methodology

Our evaluation captures an all-encompassing approach that aim to assess and measure performance of project results over time and in context. This is being done by adopting the methods below.

1. The period from April 2017 to mid-2020 constitutes 3 years between the completion of the first phase evaluation and the final evaluation. Developments that have occurred during this period of time may have influenced the manner in which the project results have been made use of by various project and non-project stakeholders. This includes questions such as: What have been the main changes over the period? – institutional, political, social, economic, environmental, etc. This will give the team a valid context within which the two key institutions, ARA-Centro and ZINWA Save have been able to execute their work and mandate. The role and activities of national and international institutions as regards the development of the Pungwe Basin during this period will be included.

A.

*Annex 1* and *Annex 2* outline preliminary assessments. As can be seen from the Annex content the data collected are rather fragmented at this stage but as data saturation progresses during the data collection phase a more complete picture of influential factors is likely to emerge.

2. The Indicators-Baseline-Value Matrix (*Annex 3*) presented in the 2018 Report is the key evaluating tool. The team will for a selected number of indicators identify factors that have influenced the matrix content, that is, what factors have been observed that have attributed to successfully or inadequately achieving the values set for 2020? – and be particularly observant on issues/data that can say something about 'impact'. This depends on the degree and quality of feedback from key stakeholders. Concurrently, the team will ask to which extent the recommendations provided in 2017 have been taken into account, and if so, how and with what results?

B.

3. In order for the team to answer the evaluation questions our analysis will take point of departure in the following sources for data collection and measurement:

C.

(a) The 2018 Report: Sources for the assessment will include an update of all main issues raised in the report – and address all critical matters discussed and questions raised in the Report. *This work is considered critical for preparing relevant questions to stakeholders*.

D.

E. The preparation of questions has been an on-gong exercise during the inception phase. An introduction letter and a questionnaire has been sent to the directors of the two institutions on 19 October 2020 for them to prepare answers over the following week. Interviews with the directors and management of the two institutions are planned to take place on 27 October 2020.

F.

(b) Written documentation: Especially business plans and annual reports of the two key institutions, ARA-Centro and ZINWA Save, as well as key policy

documents on basin developments will be at the core of written sources to assess/review. Important to repeat the limitations that may occur for our analysis if these sources will not be accessible. It should be noted that, according to the work plan, document review was a part of the inception phase. This exercise will now be an integrated part of the data collection phase.

G.

(c) As regards field work and interviews, the team will, based on review of sources under (a) and (b) develop/prepare/deepen follow-up evaluation questions and identify which institutions and persons are relevant for these questions. Apart from the two key institutions, ARA-Centro and ZINWA Save, the local consultants will do field work assessing the SFGs (local projects) and discuss with local authorities, and report back to the international team members. Follow-up interviews will be decided upon as data collection matures.

H.

I. We are currently preparing for the field visits. These are to take place during the last two weeks of October and outlines of these visits are presented in *Annex 4*.

J.

(d) As regards measuring progress and achievements for key components and evaluation questions, we will prepare an update of the assessment grid with the score rating as made use of in the first part of Chapter 3, Lessons Learned (*see Annex 5*).

## Implementation

Our way of working will be systematic. Considering the importance of developing questions based on 3(a) above, we will for each paragraph/section/chapter in the report identify the following:

- Key questions and data required to assess progress and achievements towards 'impact'
- Who to ask these questions? Persons, institutions, others
- Who from the NIRAS team will do the work? Coordination/delegation

An example:

> Several challenges are facing both ARA-Centro and ZINWA-Save in the future as regards the SGF. First and foremost funding appears to be insufficient to ensure the expansion of the number of projects following the closure of PP2. So far a clear system for effectively monitoring of the current 33 projects has not been established for developing further the irrigation schemes put in place by PP2 – including more pro-active support to strengthening the technical component for more effective agricultural practices and also the social aspect of ensuring benefits for disadvantaged groups in the project areas.
>
> p. 60 in 2018 Report

**Questions**: 1. Status of existing 33 projects? 2. Has new SGFs been funded? 3. Has monitoring improved; e.g. technical support and on social issues? 4. Has the SGF projects been transferred to local governments or civil society organisations (as mentioned in the recommendation section)? If not, why? And if so, what has been features of development since the transfer?

**Who**: Visits to a limited number of SFG projects, do interviews with association members and put questions to directors / decision-makers

**By**: Field work (local consultants) - follow-up by remote interviews (international team)
The Concept Note claimed that this exercise would have been completed and presented to Sida in this Inception Note for review and approve prior to the data collection phase. Instead we suggest that the questionnaire derived from the process is forward Sida instead. The questionnaire is a clustering and condensed version of the above process of preparing evaluation questions for stakeholders.

The result of the systematic approach is that key questions are emerging (and triangulated with the lessons learned and conclusions made during the 2017 exercise) and specific questions/issues will be used for *probing*. The questionnaire containing the key questions for each of the components and the evaluation questions of the PP2 is presented in *Annex 6*. It has been distributed to the directors of the two institutions on 19 October 2020. A team version of the questionnaire contains the key questions as well as *probing* questions for guiding follow-up discussion points.

As for the SGF projects the process will be the same and questioning will follow the format already established during the first phase (see example, *Annex 7*). Our local consultant will follow this approach throughout. It should be noted that while working in the field, the consultants will be assisted, in the case of ARA-Centro, with technicians and they will meet with representatives of local authorities/districts and get their reflections on development concerns in their localities and to developments on IWRM and the Basin over the last three years and onwards.

The questions/issues are already 'ordered' under the 2018 Report's component and evaluation criteria. While this makes it easier to work within an evaluation framework, the team will have the 'impact' aspect guiding our work, supported primarily from analyses of effectiveness and sustainability. It is premature, at this stage, to frame with precision the evaluation outcome in terms of 'conceptual learning' as raised by Sida.

However, the way in which this assignment was conceived - in two distinct phases - the existence of the Indicators-Baseline-Values Matrix and programme recommendations are factors that should make it possible to draw lessons of a general nature. On conditions under which this type of programme can be efficiently and effectively piloted lessons learned from the PP2 should be useful to Sida for the implementation of similar interventions.

## Limitations, risk assessment and mitigation

The NIRAS evaluation team is faced with limitations due to the current pandemic – particularly the inability of international consultants to do field work for data collection. Furthermore, one of our two local consultants from our first field mission has not been available. For consistency in data gathering and reliability of the impact assessment, the work should have included visits to the *same places* and meeting as many of the *same people* as possible as during the 2017 field work.

Given the new circumstances this overall approach is not feasible. Yet, this is the second stage of the evaluation and our consultants are already well familiar with the overall situation and conditions of the IWRM of the Pungwe Basin. This enables the team to have a relatively strong point of departure for assessing data that would not have been possible if a completely new team or a first stage of an impact evaluation was to be launched.

By following the approach and methodology outlined above we are confident that it will be possible to achieve the purpose of the evaluation, while acknowledging that some questions may not be fully answered. At this stage it is not feasible to foresee which questions can be answered satisfactorily and which not. It all depends on the accessibility to key informants and documents as well as the degree and quality of feedback from stakeholders to our questions. We will aim at addressing issues/questions that have relevance for 'impact'.

At present there seems to be few cases of Covid-19 in Mozambique and Zimbabwe and domestic restrictions are limited. This situation has remained stable since the production of the Concept Note in September 2020. The team has closely monitored this development and the field work is planned to take place during the last two weeks of October, in which our local consultants will conduct in-person interviews, taking the necessary safety precautions.

From already established contacts the two institutions - mainly through the technician level at ARA-Centro and ZINWA Save – interviews will be feasible to implement in the field. As we are still in the process of establishing contact and arrange for interviews with the directors in the two institutions, field visits are still to be confirmed. The Gorongosa District in Mozambique is currently defined as a risk zone due to (armed) tensions between the government and the opposition. Field visits to Gorongosa District to assess the SGFs the team visited in 2017 is therefore not possible.

For the remote interviews, the team is aware that technology is not a direct replacement for meetings facilitated in-person and will structure interviews accordingly, investing in preparations as needed. Poor internet connection in general is a potential limitation.

While we are confident that key stakeholders are willing to enter into a dialogue with the team, it is clear, based on experience from the first mission in 2017, that, for example, obtaining important documents, can be a challenge. ZINWA has a website but no document subfolder. ARA-Centro does not even have a website, from where basic information of data could be extracted. As such business and strategy plans are not available upfront, as is annual performance and financial reports, though we have been informed that they have been produced. Our local consultants confirm these difficulties in document accessibility. We will during interviews with key informants address these issues and request for key documents.

Face-to-face interviews are to be carried out between our local consultants and stakeholders at local level (primarily with technical staff and members of the SGFs associations) while conference calls will be applied for the international NIRAS team interviewing key informants and decision makers in the two institutions. Relevant

representatives from public institutions and the donor community engaged in IWRM and the Basin will also be approached for interviews.

Most of the staff of the ZINWA HQs that participated under PP2 are still available though there have been some changes, including the appointment of a new director in mid-2020. At Save Catchment most of the management and staff are still available. At the ARA-Centro, changes in top management has occurred only recently and we have established contact to the director-in-charge over the last 3 years. A preliminary list of key stakeholders and informants are listed in ***Annex 8***.

The structure of the final report will be discussed with Sida.

## Areas of responsibilities for team members

| **Evaluation criteria** | **Responsible (lead – support)** |
|---|---|
| Development 2017-2020 | Local consultants Helder Domingos (HD) and Wellington (W) prepare – supported by Troels Kolster (TK) and Svend Erik Sørensen (SES) (international team) |
| Relevance | SES – TK/HD/W |
| Effectiveness | Institutional development (SES – TK/HD/W)<br>Poverty – SFG (HD/W – SES/TK)<br>Environmental Protection (TK – HD/W/SES)<br>Regional cooperation (SES – HD/W/TK) |
| Sustainability | SES – with specific inputs from TK/HD/W |
| Efficiency | SES – TK/HD/W |
| Impact | SES – TK/HD/W – PP2 products used by government, other agencies, private sector, etc. (e.g. strategies, policies, studies, capacity enhancement, income generation, etc.)<br><br>Identification of these stakeholders – interviewing these (where relevant persons can be identified) – e.g. Ministry of Environment (by TK). |

Most importantly it should be noted that limited focus will be attached to the assessment of relevance and efficiency as these were programme related and the PP2 was terminated as a Sida funded programme in March 2017. Focus will therefore be on effectiveness, sustainability and impact of the results of the PP2 from 2017 to 2020.
An updated workplan is presented in ***Annex 9***.

### Annex 1: Preliminary assessment of various developments related to IWRM, ARA-Centro and the Pungwe Basin 2017-2020 – Mozambique

**The cyclone Idai**
The cyclone Idai severely affected the city of Beira and the main infrastructure of ARA-Centro HQs office was severely damage. Following the cyclone, the government

established a temporary 'Post-cyclone Idai Recovery Office' to financially assist, coordinate and monitor the reconstruction process. However, it was only late, in 2020 (one year later), that the technical team of ARA Centro was able to make a detailed survey of damages done in Buzi District with financial support from the Dutch Blue Deal project. The project also has financed the rehabilitation of ARA-Centro's HQs office and the replacement of parts of the hydro climatological network which was destroyed by the cyclone. In the districts of Buzi and Nhamatanda the damage was severe.

**The SGFs**
After finishing PP2 in 2017, the ARA-Centro team seems not have had sufficient mainly financial capacity to follow up and monitor the local SGF activities supported during the PP2. It also appears that no data or information has systematically been collection of the SGFs projects the PP2 supported in the districts of Nhamatanda, Barue and Gorongosa. Lack of funds seems also to have limited general and operational management of ARA-Centro.

**Basin agreements between Mozambique and Zimbabwe**
The agreement between the parties is active and progressing. In 2016 the water sharing agreement for Pungwe River was signed, and in 2019 the water sharing agreement for Buzi Basin was signed. Both countries are currently in talks to sign the next water sharing agreement for Save River. When this agreement is signed, a joint management office called BUPUSA will be set up simultaneously. The BUPUSA is an abbreviation of Buzi, Pungwe and Save.

**Merger of ARA-Centro and ARA Zambeze**
The process of joining the two organizations is still being dealt with at ministerial level. The decree of the merger has been approved and statutes being drafted. At technical level, the process has not yet begun. It is known that the HQs of this new ARA institution resulting will be in City of Tete.

**Impact of Covid 19**
The global pandemic situation affected the routine and the way staff has work at offices and in the field. The staff went to office alternately and in most cases did their work from home. The Covid-19 situation has not had a negative impact on the work of the ARA-Centro. Lack of funds for field activities have refrained from any serious contagious situation.

## Annex 2: Preliminary assessment of various developments related to IWRM, ZINWA-Save and the Pungwe Basin 2017-2020 – Zimbabwe

**Political situation**
Changes brought about in late 2017 with the fall of Mugabe and the 2018 general elections, Zimbabwe is now under a new leadership. The new vision for Zimbabwe is to be a middle-class income country by 2030 and the first step in that process is the implementation of the Transitional Stabilization Programme (Oct 2018 - Dec 2020) whose objective is to recover and stabilize the economy. There is a deliberate focus to develop new dams and utilize unallocated water in some of the dams to cater for

increased irrigation development and secure water supply for most of the service centres where water supply is currently limited.

**The pandemic**

The country is also reeling under the impacts of Covid 19. As of 21 September, officially Zimbabwe had recorded 7,706 Covid 19 cases, 5,948 recoveries and 226 Deaths. The country went into a near complete lockdown in March 2020 but restrictions have been eased gradually after realising that the country's economic had also suffered. The latest easing of restrictions saw the opening of both local and international travel. The current restrictions will allow in bound passengers from countries where Covid 19 is deemed to be under control with test results valid for two days (maximum).

**The water sector management**

The Department of Water Resources Management and Development is now under the expanded Ministry of Lands, Agriculture, Water and Rural Resettlement after the 2018 general elections and cabinet reshuffle. The management at Pungwe Sub-catchment Council is now elected on an annual basis. This is a result of the statutes that governs the establishment which requires that officer bearers are elected regularly.

**Idai and droughts**

Zimbabwe experienced one of the worst cyclones in March 2019, Idai. Pungwe basin was not really affected by the cyclone. Minimal or no damage was experienced in the Pungwe side in Zimbabwe. However generally the country has been hit by droughts in the past two seasons, save for Cyclone Idai affected areas which only affected the eastern part of the country. There has been generally low inflows into major dams and drying up of boreholes. Some the dams in the western parts of the county have been decommissioned leaving communities vulnerable. The AfDB is facilitating a project on the rehabilitation of gauging station damaged by Cyclone Idai in the eastern parts of the country. This Project is set to commence in 2021

**Basin agreements between Mozambique and Zimbabwe**

Agreements between Zimbabwe and Mozambique on Pungwe and Buzi were signed in 2017 and 2019 respectively. The ZINWA Save and Ara Centro team is working on logistics to finalize the Save agreement. In Zimbabwe Save is managed by two catchments i.e. Runde and Save. GIZ assisted the bridging phase of the project after Sida funds came to an end in 2017/18. Other cooperating partners have also come on board for the preparations and implementation of the next phase of the project. These include Resilient waters (USAID), GWPSA, GEF and IUCN.

**IWRM related projects in Zimbabwe**

1. Water Resources Master Plan (WRMP). The consultant has just finished the plan with a number of sector specific documents produced. The documents are still under review. The WRMP is funded by the World Bank
2. Restructuring of ZINWA. There has been a focus to increase presence of ZINWA in communities in terms of water supply management in order to increase revenue. Apart from the seven catchments and 47 sub catchments, new service centres have been established throughout the country. They are decentralized offices to service water supply in the rural areas.

3. The Department of Climate Change is carrying out two projects i.e. National Adaption Plans and Fourth National Communication to the UNFCCC. These projects tap from the water sector and some of the adaptation strategies to be identified will part of measures to reduce GHGs by 33% as prescribed in the National Determined Contributions.
4. The SADC HYCOS project has been going on in phases since 1998. The stations have the capacity to relay data near real time to avert water related disasters. Information is posted on a platform and shared by the participating countries. SADC countries together with GWPSA are currently working on a proposal to extend the current network.

## Annex 3: Indicator-Baseline-Values Matrix

| **Institutional Development Component: Staff development** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Staff development plans, including the Capacity Development Strategy, Retention Strategy and HRD/M plans have been developed. | Existing strategies and plans are 'idle', not implemented or revised (ARA-Centro)<br><br>Capacity Building Strategy for ZINWA-Save | Strategic staff development plans and strategies are fully updated and implemented as per available funding |
| Skills level of staff employed with the ARA-Centro and ZINWA-Save compared to similar ARAs/ZINWAs. | Current staff skills level and institutional functions as per November 2017 | Maintenance of skills level and institutional functioning that enable for the achievement of institutional mandates<br><br>Full staff compliment with positions at decentralised level filled with capacitated staff |
| Performance of ARA-Centro relative to its mandate. | ARA-Centro performs in a generally ineffective manner relative to its mandate. | ARA-Centro has improved its performance relative to its mandate. |

| **Institutional Development Component: Decentralisation** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Decentralisation of transboundary IWRM for government and other stakeholders (Chimoio, PCB, PSCC and sub-committees and councils) | Decentralized units established and functional in the Pungwe basin | Decentralised units operational as functional entities. |
| Collaboration on IWRM at local level (Chimoio, districts, and PCBs/PSCCs and committees/councils) | Collaboration on IWRM between decentralised units established and functional | Collaboration continued and strengthened between decentralised units on IWRM activities |

| **Institutional Development Component: Stakeholder participation** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Stakeholder participation in capacity building activities and exchange visits | Participation structures established and activities executed<br><br>Inadequate or non-existing performance management of stakeholder participation | Participation structures and activities continued and strengthened<br><br>Performance management structure established and effectively applied in Pungwe Sub-catchment Councils. |
| Extent of collection of data on water-related conflicts in the basin | Data on conflict resolution are not collected, registered or analysed by ARA-Centro or ZINWA-Save | Data on conflict resolution are collected, registered and analysed by ARA-Centro and ZINWA-Save facilitating improved mediation skills among decision-makers & stakeholders |

| **Institutional Development Component: Information and communication** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Degree to which the surface water, water quality and groundwater monitoring network fulfils WMO standards | Surface water network fulfils WMO standards, with the exception of the number of evaporation pans.<br><br>Water quality and groundwater networks do not fulfil WMO standards | The surface water, water quality and groundwater monitoring network fulfil WMO standards and is maintained |
| Availability of water management information to managers and other stakeholders | Communication strategy developed, but not institutionalised | Communication strategy updated and institutionalised |
| Data management system in line with the nationally-adopted database and management platforms | Hydstra database (or other format recommended by the national line ministry) not operational | Hydstra database (or other format recommended by the national line ministry) operational |
| Environmental flow requirements for different reaches | Environmental flows not quantified | Environmental flows fully quantified |
| Guidelines for monitoring of environmental flows | Guidelines not developed | Guidelines established and used |

| **Poverty Reduction Component: Small- and medium dam development** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Feasibility studies elaborated for small/medium dams | 0 | 4 |
| Funding for x small and y medium dams secured | x=0; y=0 | x>0; y≥0 |
| x small and y medium dams constructed | x=0; y=0 | x>0; y≥0 |

| **Poverty Reduction Component: Small-scale IWRM and development Fund (SGF)** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Gender and vulnerable groups in IWRM in Pungwe basin | Gender and vulnerable issues and concerns in IWRM in the Pungwe basin inadequately addressed | Gender and vulnerable issues in IWRM in the Pungwe basin adequately addressed |
| Clarity of Roles and responsibilities regarding to ownership, technical assistance and operation of the SGF | For all SGF projects an MoU has been signed that clearly states the responsibility of the District Authorities and Associations. | The district authorities continue to support the local associations with technical assistance and all possible means and take measures if associations do not function well. |
| Degree to which all involved institutions comply with the roles and responsibilities regarding to ownership, technical assistance and operation of the SGF | Both the districts and the associations comply with the SGF MoU | Both the districts and the associations continue to comply with the SGF MoU |

| **Environmental Protection Component: Salinity control** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Pre-feasibility studies | 1 | 1 |
| Feasibility studies | 0 (project cancelled) | 0 |
| Salinity control construction | 0 (project cancelled) | 0 |
| Initiatives established with private sector for salinity control | 0 | 1 |

| **Environmental Protection Component: Gold panning management** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Monitoring of water quality parameters related to pollution from gold panning implemented | No specific monitoring points for the demonstration projects in place, only ad hoc monitoring | Monitoring impact at four demonstration projects |
| Strategy and action plan | 1 completed | Strategy and action plan updated and implemented |
| Alternative technologies implemented | Four demonstration projects implemented | Four demonstration projects functioning with a spin off at another four places where alternative technologies are implemented |
| Funding of alternative opportunities | Two projects funded by SGF | New projects creating alternative opportunities for gold miners |

| **Environmental Protection Component: Flood and drought warning** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Drought contingency plan developed and implemented | Plan not developed | Plan developed and implemented |

| | | |
|---|---|---|
| Reliable hydrological and flood forecasting models | Reliable model is operational | Reliable model is operational and used extensively |
| Transboundary communication implemented | Bi-annual pre- and post-seasonal meetings held between the two countries | Bi-annual pre- and post-seasonal meetings held between the two countries and protocol on exchange of data and information established |
| Dissemination procedures for communication products developed | Procedures for communication strategies not developed or institutionalised | Procedures for communication products and strategy prepared in close collaboration with INGC and other relevant institutions, and institutionalised |
| Quantification of the number of people vulnerable to floods or droughts | Number of vulnerable people in Zimbabwe quantified | Number of vulnerable people fully quantified in the entire basin |

| **Environmental Protection Component: Integrated water and land use development** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Comprehensive water and land use plan | One Integrated Water and Land Use Strategy in place | Integrated Water and Land Use Strategy updated and implemented |
| Coordination mechanism for integrated water and land use development | No coordination mechanism in place | Coordination mechanism in place and operational |

| **Regional Cooperation Component: Regional Cooperation** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Establishment of joint water sharing agreements as part of IWRM policies of the two countries | Joint Water Sharing Agreement signed July 2016 – implementation of Agreement initiated<br><br>Establishment of a Secretariat initiated for the Pungwe, Buzi and Save basins | Progress in the implementation of the Agreement (including actions based on PP2 products)<br><br>A Secretariat for the Pungwe, Buzi and Save basins fully established and operational |

| **Relevance** | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| IWRM policies and strategies | Policies and strategies for IWRM in the basin exist | Policies and strategies continue to facilitate positive IWRM development |

| Sustainability | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Fee collection at ARA-Centro and ZINWA-Save | Fee collection system has not improved the revenue for ARA-Centro over the last 10 years despite increased number of clients. Average 8 years (2009-2016) 4.680.000 MZN[16]<br><br>Fee collection has improved 380% for ZINWA-Save from 2012 to 2016. | Fee collection level increased by at least three (3) per cent by November 2020 for the three-year period 2018-2020, compared to the average for the period 2009-2016, i.e. 4.820.000 MZN<br><br>Fee collection improved by 25% by November 2020. |
| Retention of the fees collected by ARA-Centro | Fees collected are retained by ARA-Centro and included in its budget | Continued retention of the fees collected by ARA-Centro and inclusion in its budget |
| Functional SGF projects | Inadequate structures for maintenance, repair and expansions of SGF projects | Management and funding structures for the maintenance, repair and expansion of the SGF projects established and functional |

| Impact | | |
|---|---|---|
| **Indicator** | **Baseline value** | **Value 2020** |
| Use of PP2 products by other initiatives or organisations | PP2 products integrated into the following processes:<br>• Action Plan of the Mozambican Water Sector for the Implementation of the Sustainable Development Goals 2015-2030<br>• World Bank-financed feasibility studies in support of PNDRH-1<br>• Feasibility studies for the Tsatse, Pavua and Metuchira dams, and construction of the Gorongosa dam.<br>• National Policy for the Development of Water Resources Management of Mozambique. | *NB: No specific target defined. The review in 2020 should collect evidence of the use of PP2 products in other policy and planning processes as an indicator of uptake and potential impact on broader policy decisions and practices.* |

[16] APR 2016 p. 50

## Annex 4: Planned field work in Mozambique and Zimbabwe

### Mozambique

| Time allocated | District | SGFs |
|---|---|---|
| 1 day | Nhamatanda District | 1. Association Metuchira Pita;<br>2. Association Agropecuaria Metuchira;<br>3. Association Piamanguana;<br>4. Association Chinadzero |
| 3 nights and 4 days | Barue District | 1. Association Nhamazurara;<br>2. Association Nhambulo;<br>3. Association Nhampepo;<br>4. Association Pisciculturas de Malomwe;<br>5. Association Irrigacao,serra shoa;<br>6. Association Mineracao Nhazonia |

### Zimbabwe

| Day | Travel and Work Involved |
|---|---|
| 26/10 | Meet Ministry and ZINWA officials in Harare |
| | Travel to Mutare |
| 27/10 | Meet ZINWA Save, Irrigation Department, EMA, City of Mutare, Provincial heads |
| | Request for documents – annual work plans, strategies, polices, financial reports |
| 28/10 | Travel to Hauna |
| | Meet Pungwe Subcatchment officials |
| | Visit SGF Projects and gauging stations |
| | Back in Mutare, commence report compilation |
| 29/10 | Travel to Mutasa District |
| | Meet Agritex, District School Head |
| | Visit SFG Projects |
| | Back in Mutare |
| 30/10 | Clear outstanding Meetings |
| | Collect documents from provincial and catchment heads |
| 31/10 | Travel back to Harare |

## Annex 5: Degree of achievement of the PP2; 2017 and 2020

### Degree of achievement per component/project, PP2 – 2017 and 2020

| *Component / project* | *Degree of achievement, from 1 (low) to 5 (high) - 2017* | *Degree of achievement, from 1 (low) to 5 (high) - 2020* |
|---|---|---|
| ***Institutional development*** | | |
| 1. Staff development | 3,0 | |
| 2. Decentralisation | 4,5 | |
| 3. Stakeholder participation | 3,0 | |

| | | |
|---|---|---|
| 4. Information and communication | 4,0 | |
| ***Poverty reduction*** | | |
| 1. Pungwe basin investment facility | 1,0 | |
| 2. Small-medium dam development | 3,5 | |
| 3. Small-scale IWRM&D fund (SGF) | 4,0 | |
| ***Environmental protection*** | | |
| 1. Salinity control | 1,0 | |
| 2. Gold panning management | 3,0 | |
| 3. Flood and drought warning | 4,0 | |
| 4. Integrated water and land use | 2,0 | |
| 5. Environmental flows | 1,0 | |
| ***Regional cooperation*** | 5,0 | |

**Degree of achievement per OECD-DAC evaluation criteria, PP2 – 2017 and 2020**

| *OECD-DAC evaluation criterion* | *Degree of achievement, from 1 (low) to 5 (high) - 2017* | *Degree of achievement, from 1 (low) to 5 (high) - 2020* |
|---|---|---|
| Relevance | 5,0 | |
| Effectiveness (average of scores of the above table) | 2,9 | |
| Sustainability | 1,5 | |
| Impact | 2,0 | |
| Efficiency | 2,0 | |

## Annex 6: Questionnaire

### STAFF DEVELOPMENT

**1 Are existing strategic staff development plans n ARA-Centro and ZINWA-Save fully updated and implemented as per available funding** (please elaborate)

**2 Are staff skills level being maintained and developed further when needs are observed?** (please elaborate)

**3 Are HQs and decentralised units of ARA-Centro and ZINWA-Save a fully staffed with skilled and capacitated staff?**

### DECENTRALISATION

**1 What is the status of the decentralised units of ARA-Centro/ZINWA-Save?**

- the MUPB Chimoio office, located in the central part of the Pungwe basin
- the stakeholder groups, i.e. Pungwe basin Committee in Mozambique and its sub committees
- the Pungwe Sub-Catchment Council in Zimbabwe
- the role of new service centres in Zimbabwe
- equipment, staffing, training provided to decentralised units the last 3 years?

**2 Have government bodies facilitated policies that strengthen decentralisation of water management?**

**3 Status on collaboration with local authorities/districts in the support of water management and decentralised units?**

## STAKEHOLDER PARTICIPATION

**1 Have national guiding principles for stakeholder engagement in the Basin been applied over the last 3 years?**

The guiding principle of the national water policies have allowed stakeholders to

(i) influence policy formulation
(ii) design alternative institutional arrangements
(iii) decide on investment choices and water resources management issues affecting their communities.

**2 Please also reflect on these questions:**

- Have the benefits of PP2 become contributed to empowering different social groups, in particular disadvantaged community groups.
- Status of the Sub-basin committees in Mozambique?
- Training/support/information provided to stakeholder groups the last 3 years?
- Have representation of stakeholders been balanced and have vulnerable groups been included?
- Inform briefly on any water conflict issues over the last 3 years and their solutions and how the ARA-Centro/ZINWA-Save has been involved
- Are data on conflicts and resolutions collected, registered and analysed by ARA-Centro and ZINWA-Save?
- Have performance management improved and reported on in sub-catchment councils?

## INFORMATION AND COMMUNICATION

**1 Have new investments been made to improve the surface water and groundwater networks the last 3 years?**

If so, who financed, and at what costs, and are O&M financed and effective?

**2 Deterioration of water quality has been the main problem in the Basin, while water availability has not been a major issue**

- Has this development continued over the last 3 years? What has ARA-Centro/ZINWA-Save done to rectify this situation?
- What is the status of effluent monitoring from mining and industry?
- Has the 2018 decree that regulates illegal effluent discharges been implemented by ARA and what is the status, i.e. in terms of fees collected? What are fees used for?
- Has the planned ARA-Centro water quality laboratory been built?
- What is the frequency, quality and process of water quality sampling?

**3 ARA-Centro Hydro-meteorological network - *please update information for 2020***

| | 2014 | | | 2020 | | |
|---|---|---|---|---|---|---|
| **River basins** | **Rain Gauges** | **Hydrological Stations** | **Evaporation Stations** | **Rain gauges** | **Hydrological Stations** | **Evaporation Stations** |
| Pungwe | 41 | 27 | 8 | | | |
| Buzi | 29 | 22 | 0 | | | |
| Save | 6 | 4 | 0 | | | |
| Savane | 3 | 0 | 0 | | | |
| Gorongosa | 5 | 0 | 0 | | | |
| **TOTAL** | **84** | **53** | **8** | | | |
| **TOTAL** | **145** | | | | | |

(Source: ARA-Centro Business Plan 2017, preparation document, p.12)

- In 2017 88 observers collect and exchange data from stations with ARA-Centro in Beira. Is this still the case or has the system been automated?
- Nine groundwater-monitoring boreholes had been established by 2017. What are the current number of monitoring stations?
- How is the borehole data management information system organised (excel)?
- What is the status of ARA and ZINWA monitoring systems compared to WMO standards?

**4 Water resource database and data management**

- What is the status on Hydstra and use/analysis of data in ARA and ZINWA?

**5 Water resources demand and allocation management**

- What is the status of the water resources inventory, modelling, and the creation of scenarios for future demand and water balance?
- Is the WEAP model operational and does staff have the necessary capacity to use it?
- By 2011 ARA-Centro had registered and issued water permits to 32 water users and the annual demand in the three basins was estimated at 176 million cubic meters, of which 77% was in the Pungwe basin. What are the most recent figures?
- Provide an update of water demand and population figures and any assessments made by ARA in terms of how to meet future demand and strategies to do so?

**6 What is the status on information products (e.g. bulletins) and website?**

**7 Is 'environmental flows' on the agenda in ARA in terms of strategies or being included in new donor programs?**

## PUNGWE BASIN INVESTMENT FACILITY

**1 Has the Government or any donor today expressed interest in pursuing large-scale commercial water infrastructure programmes in the Basin with a significant poverty alleviation perspective?**

**2 Does ARA-Centro have the capacity today to undertake monitoring and quality assessments of such large programmes (as was the intention with the PP2 Pungwe Basin Investment Facility)?**

## SMALL AND MEDIUM DAM DEVELOPMENT (SMDD)

**1 Has the SMDD Strategy been included (in full or in part) in newer government water policy and strategies, for example the Zimbabwe Water Master Plan - or being used by donors (e.g. the WB)?**

**2 What is the status regarding the three priority dams with respect to feasibility studies, design, funding, O&M, etc.:**

- Nhacangara
- Gorongosa (completed?)
- Metuchira?

**3 What new activities are carried out as regards small and medium-sized dams since 2017?**

- Have new feasibility studies been carried out?
- Have funds been secured for construction?
- Have new dams been constructed?

## SMALL-SCALE IWRM&D GRANT FUND (SGF)

**1 What is the status of existing 33 projects?**

- Has new SGFs been funded?
- Has improved management and funding structures for the maintenance, repair and expansion of existing SGF projects been established and functional?
- Do the district authorities continue to support the local associations with technical assistance and take measures if associations do not function well?

**2 Has the SGF projects been transferred to local governments or civil society organisations** (as mentioned in the recommendation section of the 2018 Sida report**)?**

- If not, why?
- And if so, what has been features of development since the transfer?

*Specific questions have been drafted for those SGFs that our team will visits in the last two weeks of October 2020. An example of the issues/questions to be raised by the evaluation team are presented in Annex 7.*

## SALINITY CONTROL

**1 Is salinity control a part of ARA-Centro's responsibilities? If so, what initiatives are in place and with what funding?**

**2 Has any initiatives been established with private sector for salinity control?**

**3 Has saline intrusion increased since 2017 and effected negatively on irrigation, industry and supply of drinking water?**

## GOLD PANNING MANAGEMENT AND MITIGATION

**1 What is the current status of the gold panning situation?**

- Still a responsibility area of the ARA-Centro/ZINWA-Save? Or placed with relevant ministries?
- To what extent is ARA-Centro/ZIMWA-Save engaged in gold panning activities?
- Has the gold panning Strategy and action plan been updated and implemented?
- The PP2 supported 4 demonstration projects on alternative technologies. Are they monitored? And have they had a spin-off effect creating new similar projects?
- The PP2 supported 2 alternative income generating activities in SGFs – have they continued? and have new opportunities emerged for gold panners?

## FLOOD AND DROUGHT

**1 What is the status on the flood forecasting model? Has a model been chosen, and if so, what is the capacity to run the model? And has a dedicated modelling room been built?**

**2 Have bi-annual pre- and post-seasonal meetings held between the two countries on communication since 2017, and protocol on exchange of data/information established?**

**3 Has procedures for communication products and strategy prepared in close collaboration with INGC and other relevant institutions, and institutionalised?**

**4 Has a drought contingency plan been developed? Is ARA-Centro carrying out drought management planning and monitoring since 2017, and if yes what does it entail?**

**5 Have any warnings been issued or effects of droughts measured?**

**6 Has number of vulnerable people been fully quantified in the entire Basin?**

## IWLU STRATEGY

**1 Has ARA-Centro/ZINWA-Save been engaged in the IWLU Strategy since 2017?**

**2 Has the IWLU Strategy been used by other stakeholders (government, donors, etc.)**

**3 Are coordinating mechanisms in place for integrated water and land use development?**

## ENVIRONMENTAL FLOWS

**1 Has the strategy and action plan for monitoring and preserving environmental flows in Gorongosa Park and Lake Urema been applied and/or used?**

**2 Has flow studies been financed?**

**3 Are there any initiatives regarding environmental flows within ARA-Centro?**

**4 Has IUCN or other organizations financed any support towards environmental flows?**

## REGIONAL COOPERATION

**1 What is the current status in the regional cooperation in the Basin?**

- What progress has been achieved on the implementation of the Joint Water Sharing Agreements
- Is the BUPUSA Secretariat fully established and operational?

## SUSTAINABILITY

**1 Is the following a correct assessment of the financial sustainability of ARA-Centro?**

The potential fee collection from the selling of raw water from the future dams will be the key to ensuring the sustainability of ARA-Centro. Increases in fees or tariffs will be too small to have a significant impact on sustainability.

**2 Please fill in the data on fees collected for the period 2017-2020**

Source: PP2 Annual Progress Report 2016, p.50

| YEAR | No. of USERS | REVENUE (MZN) |
|---|---|---|
| 2009 | 15 | 2,130,406 |
| 2010 | 20 | 3,138,651 |
| 2011 | 25 | 3,965,729 |
| 2012 | 35 | 6,926,899 |
| 2013 | 38 | 4,976,551 |
| 2014 | 38 | 4,886,362 |
| 2015 | 38 | 6,644,229 |
| 2016 | 50 | 4,776,420 |
| 2017 | | |
| 2018 | | |
| 2019 | | |
| 2020 | | |

**3 Please fill in data on actual funding of ARA-Centro for 2019-2021**

Actual for ARA-Centro 2012-2017 (in million MZN) - Source: ARA-Centro, Nov 2017

| | Actual 2017 | Actual 2018 | Actual 2019 | Actual 2020 | Budget 2021 ARA Centro – ARA Zambeze |
|---|---|---|---|---|---|
| Salaries | 5,9 | | | | |
| Investments | 0 | | | | |
| Fees | 4,1 | | | | |
| PP2 | 0 | | | | |
| Other donors | - | | | | |
| Total | 10 | | | | |

**Are fees collected by ARA-Centro retained and included in its annual budget?**

**4 What are the rationales behind the merger of ARA-Centro and ARA-Zambeze?**

**At least 3 main reasons.**

**5 What steps have been taken to retain staff at ARA-Centro?**

**6 In the Pungwe Sub-catchment Council (ZINWA-Save) the revenue collected in 2016 was USD 232,276, which was an increase of 380% relative to 2012.**

- What are the USD figures for 2017, 2018, 2019 and 2020?

## Annex 7: Example of questions for an SGF project

| Project Name | Irrigation Piamanguana |
|---|---|
| Name of Association | Association Piamanguana |
| Project Description | Expansion of existing irrigation system with 1.000 meter pipes and 10 hydrants. Now a total of 40 hectares is in use and under irrigation. |
| Village(s) | Tica |
| District/Province | Nhamatanda/Sofala |
| GPS Coordinates | X: 653677 Y: 7855073 Z: 4 |
| | |
| **Key Persons Met** | Chairman of Association: Mr. Manuel João<br>2 members of the Association |
| | |
| **The Project** | |
| What was done by PP2? | PP2 expanded the existing irrigation by donation of 1.000 meter of pipes and 10 hydrants. The pumps already existed. |
| When was the project completed? | 2014 |
| How has the system been used since that time? Any challenges? | The system has been in use since the installation, there were no particular challenges mentioned. |
| What changes have occurred since completion? | The production area increased and there is now a common plot for the association of which the income from sales is used for O&M. The whole area has been legalized. The production volume increased and the association members are hiring workers to cultivate the land. |
| How many people benefit from the project? | There are 22 association members actively cultivating the land. |
| What was the own contribution of the association? | The association contributed towards excavation of the trenches for the irrigation pipes. |
| How is O&M and reinvestment funding guaranteed? | The income of the sales of the common plot is used for O&M. |
| How is the gender aspect taken care of? | Unknown |
| What is the impact on livelihood? | As the association beneficiated from various projects and funding (for example FDD/FDA/Finagro and BAD) it is difficult to say what exactly the impact of PP2 was. In general can be said that income increased for more members. |
| Relevance to IWRM | Increased access to water for irrigation increased income for the association members. |
| Were people trained by PP2? | The chairman of the association participated in various meetings and trainings in Gorongosa and Chimoio. |
| How is technical support organized? | The technician of SDAE and extension worker give technical assistance. |

**Hélder Domingos**
contact person

**Hélder Domingos**
What have been the challenges in the last 3 years?

**Hélder Domingos**
What is the behavior of the association's sales and funds?

**Hélder Domingos**
How many members are in the association today and how many are hired to cultivate the land? number and genres?

**svend erik sorensen**
Can the fund be sustained for O&M

**Hélder Domingos**
What is the situation for each member? aspects that have improved in the family and in general?

**Hélder Domingos**
Does assistance continue to happen? with SDAE? with other organizations? members gain skills?

## Annex 8: Preliminary list of key stakeholders and informants

**SGFs in Mozambique:**
Association Metuchira Pita;
Association Agropecuaria Metuchira;
Association Piamanguana;
Association Chinadzero
Association Nhamazurara;
Association Nhambulo;
Association Nhampepo;
Association Pisciculturas de Malomwe;
Association Irrigacao,serra shoa;
Association Mineracao Nhazonia

## Stakeholders in Zimbabwe:

| Organization | Role in PP2 | Role of contacts |
|---|---|---|
| Ministry of Lands, Agriculture, Water and Rural Resettlement | IWRM | Acting Director - Water |
| | | Acting Chief hydrologist |
| | | Department of Irrigation – Manicaland Province |
| | | Agritex – Manicaland Province |
| | | Agritex – Mutasa District |
| ZINWA H/O and Save | IWRM and project Implementers | ZINWA CEO |
| | | Save Catchment manager |
| | | Nyanga Service Centre Leader (ZINWA Save) |
| | | Save Catchment Hydrologist |
| | | Save Catchment River Inspector |
| | | Revenue Accountant |
| | | HR Officer |
| Pungwe Subcatchment Council | IWRM and beneficiaries | Subcatchment Coordinator |
| | | Subcatchment Accountant |
| | | Subcatchment Council Chairperson |
| PP2 Management & PSC members | Project Management & Sustainability | Former PP2 Manager |
| Mutasa District Development Coordinator | Local stakeholders | District Coordinator |
| Mutasa Education District Office | Local Stakeholders and beneficiaries | District Schools Inspector |
| City of Mutare | Local stakeholders | Director of Works |
| Beneficiaries of Grants (SGF) | Beneficiaries | Chidzinzwa, Nyamandwe, Butsi, Gatsi Primary School, St Columbas Primary School, Buwu, Nyamakowera, Kushinga and Takazvida Irrigation Schemes |
| Manicaland Environmental Management Agency | Provincial Stakeholders | EMA Manager |
| Manicaland Provincial Administrator | Provincial Stakeholders | PDCC staff |
| Resilient Waters* | Cooperating Partners | Chief of Party |
| GWP SA* | Cooperating Partners | Program Manager |
| GIZ Botswana* | Cooperating Partners | |
| IUCN* | Cooperating Partners | |

# Annex 9: Updated workplan

| 2020 | | | | | September | | | | October | | | | November | | | | December | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SES | TK | HD | WD | w36 | w37 | w38 | w39 | w40 | w41 | w42 | w43 | w44 | w45 | w46 | w47 | w48 | w49 | w50 | w51 | w52 |
| Inception Phase | | | | | | | | | | | | | | | | | | | | | |
| Start-up meeting with Sida, 1 October | 0,5 | 0,5 | | | | | | | | | | | | | | | | | | | |
| Document review | 3 | 2 | | | | | | | | | | | | | | | | | | | |
| Finalising evaluation questions and approach | 2 | 1 | | | | | | | | | | | | | | | | | | | |
| Quality assurance, inception note | | | | | | | | | | | | | | | | | | | | | |
| ***Submission inception note, 21 October*** | | | | | | | | | | | | | | | | | | | | | |
| Approval of inception note (Sida), 23 October | | | | | | | | | | | | | | | | | | | | | |
| Data Collection Phase | | | | | | | | | | | | | | | | | | | | | |
| Field work / remote interview preparations | 1 | 1 | 1 | 0,5 | | | | | | | | | | | | | | | | | |
| Field work Mozambique / key informant interviews | 1 | | 8 | | | | | | | | | | | | | | | | | | |
| Field work Zimbabwe / key informant interviews | 1 | | | 4 | | | | | | | | | | | | | | | | | |
| Internal debriefing | 0,5 | 0,5 | 1 | 0,5 | | | | | | | | | | | | | | | | | |
| Key information interviews (skype/telephone) | 3 | 2 | | | | | | | | | | | | | | | | | | | |
| Addtional documents review | 3 | 2 | | | | | | | | | | | | | | | | | | | |
| Data Analysis and Reporting Phase | | | | | | | | | | | | | | | | | | | | | |
| Data analysis | 2 | 2 | | | | | | | | | | | | | | | | | | | |
| Report writing | 5 | 3 | | | | | | | | | | | | | | | | | | | |
| Quality assurance, evaluation report | | | | | | | | | | | | | | | | | | | | | |
| ***Submission of Draft Report, 27 November*** | | | | | | | | | | | | | | | | | | | | | |
| Feedback from stakeholders on draft report, 4 December | | | | | | | | | | | | | | | | | | | | | |
| Finalization of the report | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| ***Submission of Final Report, 11 December*** | | | | | | | | | | | | | | | | | | | | | |
| **Total days** | **23** | **15** | **10** | **5** | | | | | | | | | | | | | | | | | |

*Initials: SES=Svend-Erik Sörensen; TK=Troels Kolster; HD=Hélder Domingos; WD=Wellington Dzvario*

# Annex 3 – List of People Met or Interviewed

**MOZAMBIQUE**

| Organization | Role in PP2 |
|---|---|
| ARA-Centro | Director |
| | Accounting |
| | water resources department coordinator |
| | technical department coordinator |
| Nhazonia Subcatchment Council | Secretary of Subcatcment |
| Beneficiaries of Grants, SGF's | 1. Beneficiaries; Nfudzi dam, Nhapepe<br>2. Irrigation project Nhamuzarara 1<br>3. Association Nhamuzarara 2<br>4. Associação Nhambulo<br>5. Malome Fish Farming Association<br>6. Association Tamba Wa Guta<br>7. Association jovens agricultores de Macalaure<br>Association Piamanguana |

**ZIMBABWE**

| Organization | Role in PP2 | Role of contacts |
|---|---|---|
| Ministry of Lands, Agriculture, Water and Rural Resettlement | IWRM and Implementers | Acting Director – Water* |
| | | Chief Hydrologist* |
| | | Acting Chief hydrologist |
| | | Department of Irrigation, Manicaland Province |
| | | Principal Marketing & Agri Business, Manicaland Province |
| | | Agritex, Mutasa District |
| | | Save Catchment manager |
| | | Nyanga Service Centre Leader |
| | | Save Catchment Hydrologist |
| | | Save Catchment River Inspector |
| | | Revenue Accountant |
| Pungwe Subcatchment Council | IWRM and beneficiaries | PSCC River Inspector |
| | | PSCC Accountant |
| | | PSCC Chairperson |
| | | Chidzinzwa irrigation Scheme and PSCC Councilor |
| | | Mutasa RDC and PSCC Councilor |
| | | PSCC Councilor |
| | | PSCC River Monitor |

| | | |
|---|---|---|
| Mutasa District Development Coordinator | Local stakeholders | Assistant District Coordinator |
| Beneficiaries of Grants | Beneficiaries | 1.Chidzinzwa Water Project<br>2. Butsi Water Project<br>3. Nyamandwe Water Project<br>4. Kushinga Water Project<br>5. Gatsi Primary School Water Project<br>6. St Columbus Primary School W/Project<br>7. Nyamakowera Water Project |
| Manicaland Environmental Management Agency | Provincial Stakeholders | EMA Manager |
| Manicaland Provincial Coordinator (formerly Administrator) | Provincial Stakeholders | Assistant Provincial Coordinator |

# Annex 4 – Documents reviewed

Boletim da Republica, Decreto no. 73/2020, 1 SERIE – No. 160; Quinta-feira, 20 de Agosto de 2020.

FUNDAMENTACÄO, Republica de Mozambique, no date

Sørensen S.E., Kolster T., Dzvairo W., Leemans T., Sandström K., 2018, *Evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2)*, Sida, http://www.sida.se/publications

World Meteorological Organisation, 2008, *Guide to Hydrological Practices Volume 1, Hydrology – From Measurement to Hydrological Information*, 6th Edition, WMO No. 168, Switzerland, ISBN 978-92-63-10168-6

# Annex 5 – Field visits Mozambique SGF

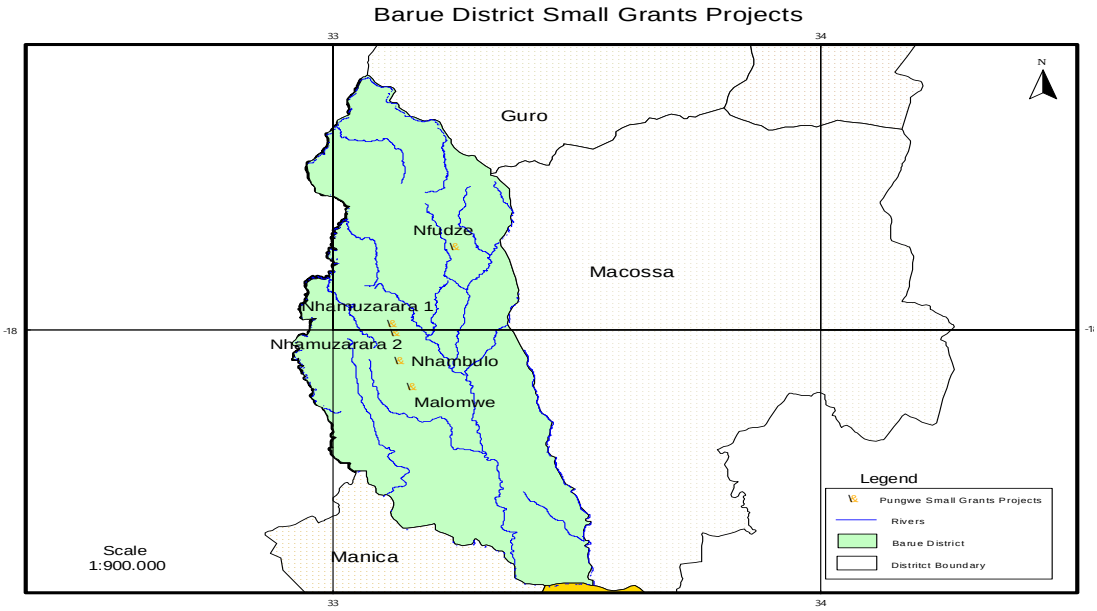
1. Travel Itinerary
2. Project Area
3. Projects visited
4. Stakeholders met
5. SGF visit reports

## 1 Travel Itinerary

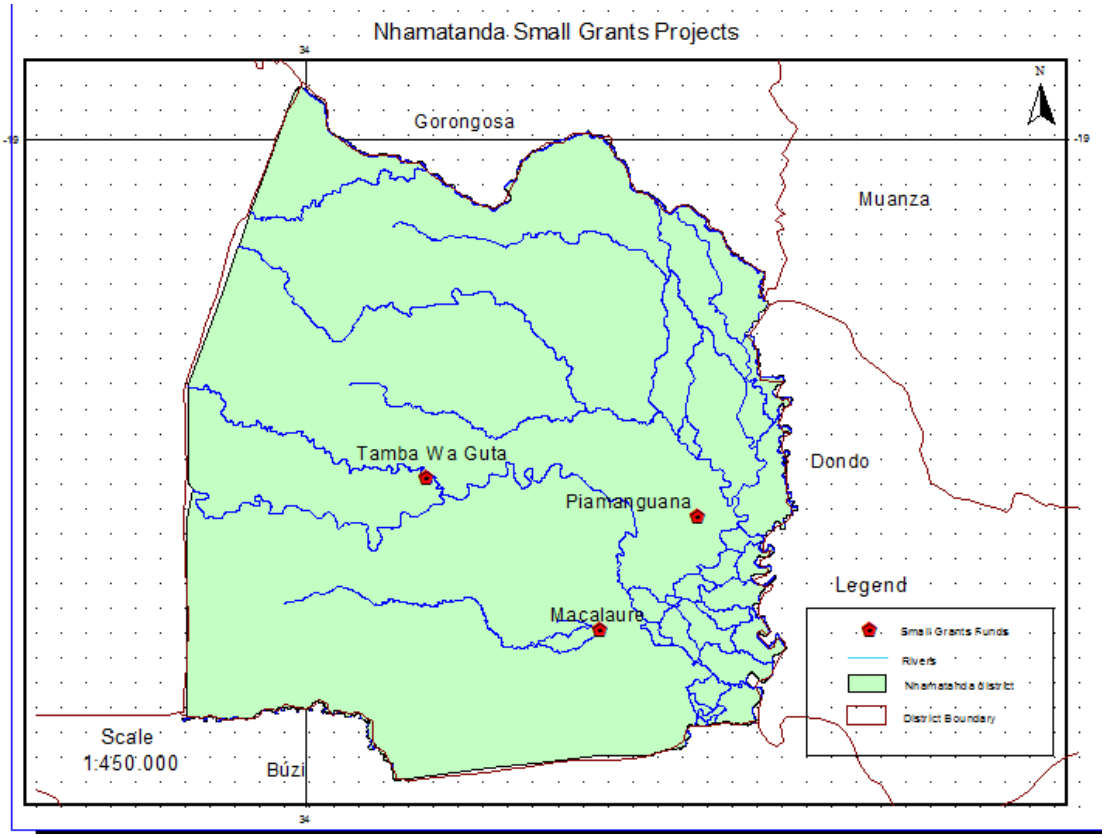
| Day | Travel and Work Involved |
|---|---|
| 02/10 | Travel arrangements in the ARA-CENTRO offices (in the afternoon) |
| 03/10 | Travel to Barue District |
| | Meeting with the Municipal structure of Barue Meeting with the secretary of Nhazonia Sub catchment. Elaboration of the structure of visits and scheduling meetings via telephone with associations. |
| 04/10 | SGFs visits: Nfudzi dam, Nhapepe ; Irrigation project Nhamuzarara 2; Irrigation project Nhamuzarara 1, Associação Nhambule – Campos Verdes (Green fields); Associação de Piscicultura de Malome |
| | Travel Back to Chimoio |
| 05/10 | Continuation of the trip to Nhamatanda |
| | SGFs visits: Association Tamba Wa Guta; Associação Agropecuária de Mutuchira Pita and Associação Agrícola de Mutuchira Pita; Associação Piamanguana; |
| | Travel back to Beira |

## 2 Project Area

**Map 1: Barue district**



## Map 2 : Nhamatanda district




### 3 Projects visited

| Project | Latitude | Longitude | Scope of Works |
|---|---|---|---|
| Nfudzi dam, Nhapepe | -17.71328 | 33.26953 | Water dam for human consumption, for livestock consumption and irrigation |
| Irrigation project Nhamuzarara 1 | -17.927404 | 33.141200 | 1st phase: distribution of litchi trees to association members (each member got 208 trees)<br>2nd phase: 2,5 hectares with drip irrigation for litchi trees, |
| Association Nhamuzarara 2 | -17.95480 | 33.14785 | 1st phase: distribution of litchi trees to association members (each member got 104 or 208 trees)<br>2nd phase: 8 hectares of irrigation on gravity: 4 hectares with drip irrigation for litchi trees, 4 hectares with taps and hoses with hydrants |
| Associação Nhambulo | -18.03381 | 33.15768 | 3 hectares with irrigation for litchi trees, of the 25 members each had access to a hose and sprinkler for irrigation. |
| Malome Fish Farming Association | -18.10507 | 33.18272 | Malome fish farming project, 25 members living with 48 orphans from Barue district. |

| | | | |
|---|---|---|---|
| Association Tamba Wa Guta | -19.34953 | 34.18564 | Irrigation of 2,5 ha of mainly maize, tomatoes, onion and peppers |
| Association jovens agricultores de Macalaure | -19.50664 | 34.36516 | *Association jovens agricultores de Macalaure* |
| Association Piamanguana | -19.38973 | 34.46510 | Support with irrigation pipes and hoses and maintenance toolbox |

**4 Stakeholders met**

| **Organization** | **Role in PP2** |
|---|---|
| ARA-Centro | Water resources department coordinator |
| | Technical department coordinator |
| Nhazonia Subcatchment Council | Secretary of Subcatcment |
| Beneficiaries of Grants, SGF's | 1. Beneficiaries; Nfudzi dam, Nhapepe<br>2. Irrigation project Nhamuzarara 1<br>3. Association Nhamuzarara 2<br>4. Associação Nhambulo<br>5. Malome Fish Farming Association<br>6. Association Tamba Wa Guta<br>7. Association jovens agricultores de Macalaure<br>Association Piamanguana |

**5 SGF visit reports**

| **Project Name** | **Irrigation project Nhamuzarara 2** |
|---|---|
| Name of Association | Association Nhamuzarara 2 |
| Project Description | 1st phase: distribution of litchi trees to association members (each member got 104 or 208 trees)<br>2nd phase: 8 hectares of irrigation on gravity: 4 hectares with drip irrigation for litchi trees, 4 hectares with taps and hoses with hydrants |
| Village(s) | Nhazonia/Catandica |
| District/Province | Báruè |
| GPS Coordinates | -17.95480 33.14785 |
| **Key Persons Met** | Association President |
| **The Project** | |
| What was done by PP2? | PP2 distributed litchi trees to the association members. Either 104 trees for ½ hectare or 208 for 1 ha. In the 2nd phase they implemented an irrigation system on gravity with the intake in a river coming from the nearby Sera Shoa mountains. With 4 hectares of drip irrigation for litchi trees and 25 taps and individual hoses with hydrants. |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | After the project was finished, the association bought some materials on the local market such as taps and others, but these materials were not durable, they were quickly eroded. It has not been easy to find similar |

| | |
|---|---|
| | quality materials with the material supplied by PP2. The irrigation system has been broken along the way and the solution used to solve the problem has been to use flexible rubbers to staunch the leaks.<br>Pipe breaks have been more frequent in the last year due to usage time. Other challenges are being faced in the management of local water resources, in recent years private explorers have emerged in "flocks" and these have built dams, the association's dam is damaged and in need of maintenance. Moreover, it no longer meets the association's need mainly in the dry season. |
| What changes have occurred since completion? | The number of members has decreased from 25 to 20 since PP2 ended. 5 members have left the association due to several reasons among them the change of residence area. |
| How many people benefit from the project? | 20 members and their families |
| What was the own contribution of the association? | Opening of pits and ditches |
| How is O&M and reinvestment funding guaranteed? | As soon as PP2 ended, sometime later the association ran out of funds. Sales earnings are used at the individual level only. |
| How is the gender aspect taken care of? | There are 20 members, among them 7 are women and 12 are men. |
| What is the impact on livelihood? | The impact is positive, the families have more income, and they can diversify their food, improve their houses and invest in their children's education. The association members on their turn, hire seasonal workers whenever necessary. |
| Relevance to IWRM | Although the members are now more knowledgeable, there are some challenges that they face concerning the management of local water resources, in recent years private explorers have emerged in "flocks" and these have built dams, the association's dam is damaged and in need of maintenance. Moreover, it no longer meets the association's need mainly in the dry season. |
| Were people trained by PP2? | One has received technical training for maintenance. |
| How is technical support organized? | One member trained by PP2, passed the knowledge on to the members in general. Today, everyone has a wide experience in the maintenance of the system and litchi cultivation. On a regular basis the association receives assistance from SDAE with visits from extensionists. |

Picture: Interview with members of the association

| **Project Name** | Nfudzi dam, Nhapepe |
|---|---|
| Name of Association | Nhapepe community |
| Project Description | Water dam for human consumption, for livestock consumption and irrigation. |
| Village(s) | Nfundze |
| District/Province | Barué |
| GPS Coordinates | -17.71328 / 33.26953 |
| **Key Persons Met** | Sub basin secretary |
| **The Project** | |
| What was done by PP2? | A water reservoir with drinking water capacity and another pond for fish farming, irrigation and livestock water were built. |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | Community system managers had difficulties in monitoring the security of the system because of military conflicts the community fled from the area, thus the whole system stopped over time. During this period of military conflict the President of the Basin, who was one of the people responsible for the management of the system installed by PP2 in that region, was also killed.<br>After the armed conflict was settled there was invasion of the waters resulting from cyclonic Idai in 2019, the waters that invaded the system created silting up and destruction of the road structures and water exit in the system.<br>It was no longer possible to recover the system, which is now totally destroyed and with no plan or prospect of rehabilitation. |
| What changes have occurred since completion? | There were no significant changes mainly due to the war environment |

| | |
|---|---|
| | The whole community with about 60 households |
| What was the own contribution of the association? | The community managed the system. A guard was placed to protect the area. |
| How is O&M and reinvestment funding guaranteed? | No information available |
| How is the gender aspect taken care of? | No information available |
| What is the impact on livelihood? | No information available |
| Relevance to IWRM | No information available |
| Were people trained by PP2? | No information available |
| How is technical support organized? | No information available |

Picture: Debris left over from the system

Picture: Current water source of the population

| **Project Name** | **Irrigation project** Nhamuzarara 1 |
|---|---|
| Name of Association | **Irrigation project** Nhamuzarara 1 |
| Project Description | 1st phase: distribution of litchi trees to association members (each member got 208 trees)<br>2nd phase: 2,5 hectares with drip irrigation for litchi trees, |
| Village(s) | Nhazonia/Catandica |
| District/Province | Báruè |
| GPS Coordinates | |
| **Key Persons Met** | Association President, Association Secretary |
| **The Project** | |
| What was done by PP2? | Lychee plasters and irrigation system assembly were delivered for 2.5 hectares of land with pipes containing all materials |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | The system is functional to the present day, it has maintenance challenges because the materials are worn out due to usage time. |
| What changes have occurred since completion? | The production has increased a lot and consequently there is a need to increase the irrigation system. |
| How many people benefit from the project? | The production is positive and the president produced 3 tons of litchi in the last season. In general, each member can produce 1 hectare of litchi per season. They believe |

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| | they can do more if they extend the irrigation system.<br>Currently there is a diversity of Production, for instance, vegetable crops have been introduced.<br>When the PP2 project ended there were 27 members, today in 2020 there are 38 members.<br>In sowing and harvesting seasons about 12 seasonal workers are hired for each member of the association. |
| What was the own contribution of the association? | The members of the association were part of the pipe assembly team for irrigation on the field |
| How is O&M and reinvestment funding guaranteed? | The association currently has no common funds, after the end of the project the members stopped contributing to the management fund. The investments are made on an individual basis. |
| How is the gender aspect taken care of? | 12 women and 26 men are currently members of the association. |
| What is the impact on livelihood? | At the family level there are many benefits. For example, the president of the association already has a television, a motorbike and other members in his house who have been able to improve their quality of life by building better houses. |
| Relevance to IWRM | Increased access to water for irrigation increased income for the association members. |
| Were people trained by PP2? | The members are all trained in the field. During the assembly the members have been learning to do the maintenance. |
| How is technical support organized? | They currently receive the SDAE's assistance with the extensionists and have also received support from the Catholic Church fund. |

Picture : Meeting with members of the association and production field visit

| **Project Name** | *Associação Nhambule* – Campos Verdes (Green fields) |
|---|---|
| Name of Association | Associação Nhambule – Campos Verdes (Green fields) |
| Project Description | 3 hectares with irrigation for litchi trees, of the 25 members each had access to a hose and sprinkler for irrigation. |
| Village(s) | Nhambulo |
| District/Province | Barué |
| GPS Coordinates | -18.03381 33.15768 |
| **Key Persons Met** | President of the association "associação Landene Chitsenga" |
| **The Project** | |
| What was done by PP2? | 7 Hectares with irrigation system for litchi trees, of the 25 members each had access to a hose and sprinkler for irrigation. |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | The materials are functional, although they are wearing out as they have been in use for about 5 years, the pipes are worn out and tend to leak at the connections.<br>The challenge that is now faced, is the poor management of resources in the dry season as more dams of the private sector and other companies have been built upstream the river.<br>Vegetables that require more quantities of water do not develop properly. |
| What changes have occurred since completion? | The association with the left-over material managed to increase the irrigation system to 20 hectares.<br>There has been an increase of 13 hectares of irrigation thanks to the members' effort. |
| How many people benefit from the project? | The association has 25 members, these members have been in the association since the project ended in 2017. |
| What was the own contribution of the association? | The members of the association were part of the pipe assembly team for irrigation |
| How is O&M and reinvestment funding guaranteed? | The members have a fund for maintenance, the members make the contribution whenever necessary to be able to meet the needs. |
| How is the gender aspect taken care of? | In terms of gender the association has 16 women and 09 men |
| What is the impact on livelihood? | The impact is positive, two members have bought motorbikes for personal transport. In one of the families led by a woman, the lady financed the studies for her son who by 2020 is a trained teacher with a job in the Ministry of Education. Two members, including the president of the association, have been able to fund their children's |

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|---|---|
| | studies in training to become policemen and are part of the Ministry of the Interior.<br>In general, people have improved their quality of life. |
| Relevance to IWRM | |
| Were people trained by PP2? | 3 people have received training with maintenance skills of the materials that have been provided |
| How is technical support organized? | They are currently receiving SDAE's assistance with the extensionists and have also received support from the Catholic Fund.<br>Over time, they have received support from other projects such as FAO, USAID, Beira Corridor. These have provided materials support and technical assistance. |


Picture: Meeting with members of the association

| Name of Association | Malome Fish Farming Association |
|---|---|
| Project Description | Malome fish farming project, 25 members living with 48 orphans from Barue district |
| Village(s) | Malomwé |
| District/Province | Barue district , Manica |
| GPS Coordinates | -18.10507 / 33.18272 |
| **Key Persons Met** | Association president |
| **The Project** | |
| What was done by PP2? | The association received utensils for the opening of the fishpond, instruments such as hoes, hand vans, machetes and other working utensils. In the second phase they received the fish for production in the pond. |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | Two young men who were part of the association lost their lives, one due to illness and the other was killed during the Renamo and government conflict.<br>In 2016, production stopped due to the Conflict between Renamo and |

| | |
|---|---|
| | government. During that Period, the fishponds were abandoned. |
| What changes have occurred since completion? | The association expected to receive a freezer and refrigeration boxes of the PP2 project.<br>They expected a trip to Gorongosa to exchange experience, but this did not happen either. |
| How many people benefit from the project? | 27 Members |
| What was the own contribution of the association? | The association's contribution was to open the tanks. |
| How is O&M and reinvestment funding guaranteed? | The association has no funds saved from the sale of the fish, the fish they managed to obtain they use for the association's food and mainly for orphaned children.<br>Currently the association tries alternatives with agriculture and the production of clay bricks. |
| How is the gender aspect taken care of? | 25 members are women and 2 men |
| What is the impact on livelihood? | With fish it is positive because they are able to feed the association's children so that they can attend classes |
| Relevance to IWRM | Unknown |
| Were people trained by PP2? | The president and vice-president received technical training on site and during the opening of the tank.<br>In general, for the exchange of experience they received an association from Gorongosa |
| How is technical support organized? | They receive none |

Picture: Meeting with members of the association and field visit

| **Project Name** | Association Tamba Wa Guta |
|---|---|
| Name of Association | Association Tamba Wa Guta |
| Project Description | Irrigation of 2,5 ha of mainly maize, tomatoes, onion and peppers |
| Village(s) | Chirassicua |
| District/Province | Nhamatanda |
| GPS Coordinates | -19.34953 34.18564 |
| **Key Persons Met** | Current president |
| **The Project** | |
| What was done by PP2? | Installation of an irrigation pump and an irrigation network for 2.5 hectares |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | The system worked satisfactorily until 2019.<br><br>Currently, the system is completely destroyed due to cyclone Idai.<br><br>The irrigation pump was dragged about 3KM away from the initial location, it is uncertain if the engine is still functional to a point that it can be relocated. A specialized truck will be needed for transportation.<br><br>The pipes have all been moved and buried. |
| What changes have occurred since completion? | By 2019, the association had purchased another small capacity motor pump to complement the irrigation system. |
| How many people benefit from the project? | Currently only the president's relatives are working in the mentioned production area. |
| What was the own contribution of the association? | During the assembly of the irrigation system by the PP2 team the association helped in the field work. |
| How is O&M and reinvestment funding guaranteed? | The association had a management fund before the cyclone, with sales earnings they were able to buy a small capacity pump and more pipes to expand irrigation. Today the management is family run since all members have left. |
| How is the gender aspect taken care of? | Currently the management of the association is family based. |
| What is the impact on livelihood? | The subsistence has improved a lot, with the vegetable production the number of clients has increased a lot. They receive vans from the city of Beira that make wholesale purchases. |
| Relevance to IWRM | |
| Were people trained by PP2? | The association has not received any training on maintenance, the association with its own funds has hired technicians in order to have the training. |
| How is technical support organized? | Currently offline, there is no support in the agrarian component, after the cyclone Idai only received visits and humanitarian support. |

Picture: Meeting with president of the association with the remains of the remaining pipes and the motorized pump dragged for 3km

| **Project Name** | Associação Agropecuária de Mutuchira Pita and Associação Agrícola de Mutuchira Pita |
|---|---|
| Name of Association | Agropecuária de Mutuchira Pita |
| Project Description | Associação Agropecuária de Metuchira Pita<br>Associação Agrícola Metuchira Pita |
| Village(s) | Metuchira Pita |
| District/Province | Nhamatanda |
| GPS Coordinates | |
| **Key Persons Met** | Association President |
| **The Project** | |
| What was done by PP2? | PP2 installed a pump, a main irrigation pipe with taps and distributed flexible hoses with hydrants to association members. Coverage of 10 hectares |
| When was the project completed? | 2016 |
| How has the system been used since that time? Any challenges? | After cyclone Idai everything is destroyed, the pipes were dragged and buried. The motor pumps were also dragged away. |
| What changes have occurred since completion? | Production increased significantly, it was possible to grow more different crops and many vegetables |
| How many people benefit from the project? | No information |
| What was the own contribution of the association? | opening ditches |

| | |
|---|---|
| How is O&M and reinvestment funding guaranteed? | With sales it was possible to have management funds, with these funds the purchase of cementes and other agricultural inputs |
| How is the gender aspect taken care of? | Currently without organizational structure. now there is no information |
| What is the impact on livelihood? | Before 2019, the impact was positive. The president managed to make investments in other areas of agriculture. |
| Relevance to IWRM | |
| Were people trained by PP2? | They were trained in the field, in the assembly of the system |
| How is technical support organized? | Due to cyclone Idai, only humanitarian support was provided. |

| **Project Name** | *Association jovens agricultores de Macalaure* |
|---|---|
| Name of Association | *Association jovens agricultores de Macalaure* |
| Project Description | 5 motor pumps for irrigation and irrigation piping to cover 25 hectares |
| Village(s) | Macalaure |
| District/Province | Nhamatanda/Sofala |
| GPS Coordinates | -19.50664 34.36516 |
| **Key Persons Met** | Association President, Vice-president, Secretary |
| **The Project** | Support that included 5 motor pumps, and an irrigation system for 25 hectares was provided with PP2 |
| What was done by PP2? | Apoio com atribuição de 5 motobombas para captação de agua e tubos para irrigação para uma aria de 25 hectares |
| When was the project completed? | 2015 |
| How has the system been used since that time? Any challenges? | There were problems with the purchasing of new parts for maintenance<br>No<br>At Beira city level it is not possible to find many of the parts. Therefore, the members of the association have to procure parts in Zimbabwe, however, they are not always successful.<br><br>Due to cyclone Idai, the whole system provided by PP2 is inoperative and everything is damaged. |
| What changes have occurred since completion? | Number of members increased from 40 to 150 members.<br><br>The association had PP2 support for the irrigation of 25 hectares. After the PP2 project an increase to 206 hectares was registered. |

| | |
|---|---|
| How many people benefit from the project? | By the end of the project there were 40 members, today in 2020, there are 150 members |
| What was the own contribution of the association? | A associação ajudou a fazer as valas para montagem de tubos de irrigação |
| How is O&M and reinvestment funding guaranteed? | The association has enough funds for management and maintenance. |
| How is the gender aspect taken care of? | Among the group of 150 members, 100 are women |
| What is the impact on livelihood? | The life of the families has improved a lot in feeding, housing and investment in the education of children. |
| Relevance to IWRM | |
| Were people trained by PP2? | They didn't receive training |
| How is technical support organized? | Members have gained experience and knowledge of the means and methods of maintenance with time. |

Picture: Remaining pumps already damaged and others dragged by Cyclone Idai

| **Project Name** | Associação Piamanguana |
|---|---|
| Name of Association | Associação Piamanguana |
| Project Description | Support with irrigation pipes and hoses and maintenance toolbox |
| Village(s) | Nhamatanda |
| District/Province | Nhamatanda/Sofala |
| GPS Coordinates | -19.38973 34.46510 |
| **Key Persons Met** | Association president |

| **The Project** | |
|---|---|
| What was done by PP2? | Supply of irrigation pipes and hoses for 500 meters coverage |
| When was the project completed? | |
| How has the system been used since that time? Any challenges? | The pipes worked properly until before cyclone Idai. The whole system supplied by PP2 was damaged and the pipes and hoses were dragged |
| What changes have occurred since completion? | |
| How many people benefit from the project? | 22 Members of the association |
| What was the own contribution of the association? | It supported the irrigation assembly team |
| How is O&M and reinvestment funding guaranteed? | No funds. Right at the end of PP2 no more funds were saved |
| How is the gender aspect taken care of? | 6 women are part of the association |
| What is the impact on livelihood? | O rendimento aumetou e houve mais ganhos monetários, as famílias melhoraram a sua diante alimentar e o investimento na escola para os filhos |
| Relevance to IWRM | They received training in Chimoio |
| Were people trained by PP2? | Two members, the president and the vice-president |
| How is technical support organized? | Support visit from SDAE |

Pictures: Remaining drag tubes from Cyclone Idai

# Annex 6 – Field visits Zimbabwe SGF

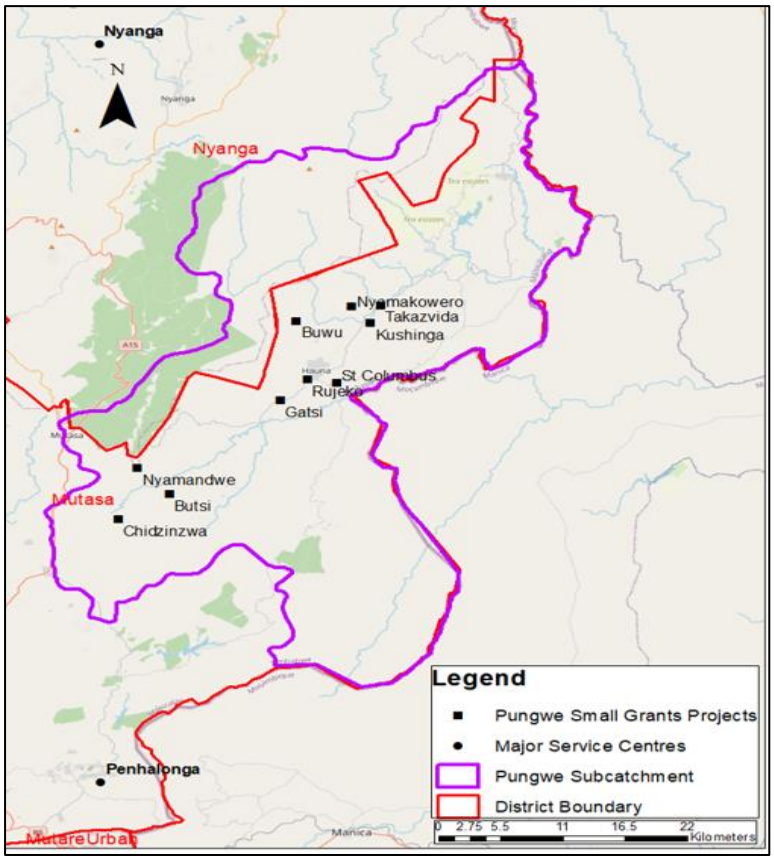
Content:



## 1 Travel Itinerary

| Day | Travel and Work Involved |
|---|---|
| 26/11 | Travel to Mutare. Before travelling to Mutare intended to meet officials from MLAWRR but they got tied up in another meeting |
| 27/10 | Met ZINWA Save, Manicaland Province Irrigation Engineer Department, Manicaland Provincial Deputy Development Coordinator |
| | Request for documents – annual work plans, strategies, polices, financial reports |
| 28/10 | Travel to Hauna, Met PSCC officials |
| | Visited St Columbus, Nyamakowero and Kushinga SGFs, Gauging stations F23 (Honde) and F24 (Murara) |
| 29/10 | Travel to Mutasa District office, Met Assistant District Development Officer, District Agritex, Officer |
| | Visited Chidzinzwa, Butsi, Nyamandwe and Gatsi SGF |
| 30/10 | Met EMA Manicaland Provincial Head, Agritex Manicaland. Zoom meeting at ZINWA |
| | Collect documents from provincial and catchment heads |
| 31/10 | Travel back to Harare |

## 2. Project Area in Zimbabwe




To above normal rainfall in the 2020/21 season.

## 3. Projects Visited

| Day | Team | Sites |
|---|---|---|
| 28 November | ZINWA staff | St Columbus, Nyamakowero, Kushinga. F23, F23 |
| | PSCC staff | |
| 29 November | ZINWA staff | Gatsi, Chidzinzwa, Nyamandwe, Butsi, DA, Agritex |
| | PSCC staff | |

## 4. Stakeholders Met during the Project Phase 2 Evaluation

| **Organization** | **Role in PP2** | **Role of contacts** |
|---|---|---|
| Ministry of Lands, Agriculture, Water and Rural Resettlement | IWRM and Implementers | Acting Director – Water* |
| | | Chief Hydrologist* |
| | | Acting Chief hydrologist |
| | | Department of Irrigation, Manicaland Province |
| | | Principal Marketing & Agri Business, Manicaland Province |
| | | Agritex, Mutasa District |
| | | Save Catchment manager |

| | | |
|---|---|---|
| | | Nyanga Service Centre Leader |
| | | Save Catchment Hydrologist |
| | | Save Catchment River Inspector |
| | | Revenue Accountant |
| Pungwe Subcatchment Council | IWRM and beneficiaries | PSCC River Inspector |
| | | PSCC Accountant |
| | | PSCC Chairperson |
| | | Chidzinzwa irrigation Scheme and PSCC Councilor |
| | | Mutasa RDC and PSCC Councilor |
| | | PSCC Councilor |
| | | PSCC River Monitor |
| Mutasa District Development Coordinator | Local stakeholders | Assistant District Coordinator |
| Beneficiaries of Grants | Beneficiaries | 1.Chidzinzwa Water Project<br>2. Butsi Water Project<br>3. Nyamandwe Water Project<br>4. Kushinga Water Project<br>5. Gatsi Primary School Water Project<br>6. St Columbus Primary School W/Project<br>7. Nyamakowera Water Project |
| Manicaland Environmental Management Agency | Provincial Stakeholders | EMA Manager |
| Manicaland Provincial Coordinator (formerly Administrator) | Provincial Stakeholders | Assistant Provincial Coordinator |

## 5. List of Small Grant Funds Projects

| Project | Latitude | Longitude | Cost (USD) | Start Date | Scope of Works | Beneficiaries |
|---|---|---|---|---|---|---|
| Rujeko Community Water Scheme | -18.502 | 32.841 | 52,500 | Jan-14 | A 25ha Communal Irrigation scheme construction project which is gravity fed. | 49 Households |
| St Columbus Primary School Water Scheme | -18.505 | 32.864 | 22,000 | Jan-14 | Banana irrigation project infrastructural rehabilitation and extension | Primary school |
| Chidzinzwa Community Water Project | -18.636 | 32.690 | 46,200 | Jan-14 | A 27ha Communal Irrigation scheme construction project with gravity fed 5km long 250mm diameter delivery main. | 53 Households |
| Nyamandwe Community Water Scheme | -18.587 | 32.705 | 47,500 | May-15 | A 15ha Communal Irrigation scheme construction project with a gravity fed 2km long delivery main and 100m³ brick reservoir. | 29 Households |

| | | | | | | |
|---|---|---|---|---|---|---|
| Butsi Community Water Project | -18.612 | 32.731 | 47,500 | Jun-14 | A 28ha Communal Irrigation scheme construction project, with gravity fed 4km long delivery main and a 250m³ brick reservoir. | 55 households |
| Buwu Community Water Scheme | -18.446 | 32.832 | 14,800 | Mar-15 | A 25.1 communal irrigation scheme construction project, with 2.4km gravity line to field edge | 48 households |
| Gatsi Primary School Water Scheme | -18.522 | 32.819 | 17,700 | Sep-15 | Weir construction, 2.950km main line infield works for 2ha banana, water reticulation system | 960 pupils school |
| Kushinga Community Water Project | -18.448 | 32.891 | 22,500 | Jan-16 | Weir & 250m3 Tank construction, 2.5km mainline & infield works, 13ha plot land | 26 households |
| Nyamakowero Community Water Scheme | -18.432 | 32.876 | 22 | Nov-16 | Weir & 350m3 Tank construction, 5km mainline & infield works | 15 households |
| Takazvida Community Water Scheme | -18.431 | 32.899 | 35,900 | Apr-16 | Infield works for 17 homesteads (0.5ha plots) and 2.6ha totalling 11.1ha, 3.5km mainline | 17 households |

## 6. Small Grant Funds Project Visited

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **Chidzinzwa Irrigation Scheme** |
| **Date Visited** | 29 October 2020 |
| Cost | USD46,200 |
| Project Description (MoU) | 53 farmers with 0.5Hactare plots under irrigation<br>Concept developed in 1990. Opened an account for own contributions but was wiped out by inflation. Government through Maguta then constructed the 7.5km pipeline from the weir |
| Village(s) | Nyakurimwa, Chidzinzwa, Rukweza |
| District/Province | Mutasa (Ward 19), Manicaland |
| GPS coordinates | -18.636, 32.690 |
| River | Mukondwe |
| **Key persons met** | Chairperson, V/Chair, Secretary, Committee member, 3 Farmers |
| | |
| **The Project** | |
| Project selection (how?) | Members developed a proposal after a government, Maguta program had financed the intake weir |
| What was done? | Infield pipe network laying, sprinklers and hosepipes procurement. Started irrigation in November 2013. They can now plant at least two crops a year. Grow beans (twice a year), carrots, butternut, maize and vegetables |

| | |
|---|---|
| What changes have occurred *since* the completion | The 53 families no longer vulnerable to droughts. The 26-hectare area was grazing lands before the grants from PP2. Yields have increased. The farmers now have better negotiation skills for better contracts for their crops and deal directly with markets |
| | |
| **Issues to be covered:** | |
| | |
| Own contribution | Labour provision for trench digging. They had a 7.5km pipeline constructed by the government through the Maguta programme |
| O&M and funding | During installations, 6 farmers on the job trained during n on the maintenance of the scheme |
| Re-investment | Bought additional clamps for off takes. Have no opened a merchant account in place of a mobile phone wallet account which they use for payment of repairs and levies. They carry out annual soil sampling to determine nutrient requirements |
| Gender / disadvantaged groups | Donate crop produce to 17 widows in the area |
| Livelihood | Can now easily manage to pay fees for children. Some managed to build their own houses, some bought cars from proceeds from the 0,5hectre plots |
| Relevance to the IWRM | Understanding of water management at grassroots level. Efficient allocation and Utilisation of water resources through sprinkler irrigation<br>Very good understanding roles of stakeholders in IWRM and pay levies and rates timely as a group |
| Management of the project. Mgr. duties, responsibilities | Fully fledged management committee of 7 members (2men, 5woman)<br>Yearly elections which are monitored by Agritex |
| Training (project & financial management, O&M) | SNV – Business management 2018<br>DCC – Financial literacy |
| Technical support / extension | Agritex (Ministry of Agriculture) – Regular good farming practices, ZINWA |
| Involvement / decision-making | The committee was formed before the award of the grant. They have been deciding for their future without any interference |
| Additional Requirements | Reservoir tank (night storage) to regulate flow still outstanding but need a new water source urgently |
| Limitations | Current economic instability eroding their savings. Water shortages worsening. Water supply dried up in September 2020. |
| **Interviewer Inputs** | |
| Setup during site visit | No agricultural activities due to water shortages. They only had a winter crop which has since been harvested |
| Changes since last Visit | No flourishing crop due to water shortages. Still doing well in terms of production when water is available Came first in the district competition and 3rd in Province 2018 Agritex competition. Relatively one of the best community managed scheme |
| Comments | Apart from the water shortages as a result of the drought, Chidzinzwa is still one of the well organised scheme. Sincerely need support for an additional water source. Some communal farmers have resettled into the head water areas resulting more |

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| | conflicts for water. ZINWA, DCC and Agritex need to address these challenge in order to sustain agricultural activities |

Picture: Stakeholder Meeting Chidzinzwa Irrigation Scheme. Background is now bare due to water shortages. When visited in November 2017, they had a thriving bean and maize crop

| **ITEM** | **Data collected / source / description** |
|---|---|
| **Project Name** | **Butsi Irrigation Scheme** |
| Date Visited | 29 October 2020 |
| Cost | USD 47,500 |
| Project Description (MoU) | 55 farmers with 0.5Hactere plots under irrigation<br>Concept developed in 1990. Opened an account for own contributions but was wiped out by inflation. Government through Maguta then constructed the 7.5km pipeline |
| Village(s) | Mutsamba, Nyabadza |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.612, 32.731 |
| River | |
| **Key persons met** | Irrigation Manager, Headmaster of St Peters Jombo Primary school, Committee Secretary, 2 Teachers |
| **The Project** | |
| Project selection (how?) | Had a village concept which had been failing to attract funds for years |
| What was done? | $100m^3$ Water Tank, delivery mains<br>Infield pipe network laying, sprinklers and hosepipes procurement |
| What changes have occurred *since* the completion | Water sources have dried up. Have added a new one but still not enough. Illegal abstractions have mushroomed upstream. Farmers have managed to replace burst pipes and bought extra sprinklers and pipes |
| **Issues to be covered:** | |
| Own contribution | Extra sprinklers and additional pipes to new water intakes |

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| O&M and funding | Burst pipe replacement |
| Re-investment | 9 farmers bought additional sprinklers<br>No major repairs yet. Contribute to maintenance when needed |
| Gender / disadvantaged groups | 24 out of 55 belong to woman<br>Jombe primary and secondary school benefit from their irrigated plots and practical lessons |
| Livelihood | Was doing well supporting the school and livelihoods for the villagers but water sources have dried out |
| Relevance to the IWRM | Understanding of water management at grassroots level<br>Efficient allocation and Utilisation of water resources through sprinkler irrigation<br>Not paying levies regularly |
| Management of the project. Mgr. duties, responsibilities | Management committee of 8 members (3men, 5women). Roles still not clear. Some of the members not even aware of the project constitution as it has not been shared. No election of committee members in the last 2 years |
| Training (project & fiscal management, O&M) | Agritex |
| Technical support / extension | Agritex and ZINWA |
| Involvement / decision-making | Committee is supposed to decide but scheme manager seem to dominate |
| Additional Requirements | New water sources needed as the current ones have dried |
| Limitations | Water availability. Role for committee members |
| **Interviewer Inputs** | |
| Setup during site visit | Due to water shortages there were no agricultural activities in place. Water was trickling into the tank indicating very low flows from the water sources |
| Comments | The situation at this scheme has not improved since the last visit. The same management committee is still in charge. Some of the beneficiaries especially the school feel being side-lined. Most of the committee members did not attend the meeting Water availability is a serious challenge as the sources have dried up. The scheme was advised to cut down on all production and prioritise the school.<br><br>The school feels being left out and there seem to be some personality clashes. Some of the members feel the irrigation roster is not well managed and tend to favour certain individuals. Even during the meeting, they |

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| | members could not agree on anything, arguing all the time Lots of confusion on the ground which need to be solved by Agritex, ZINWA and the DCC |

Picture: Butsi Irrigation Scheme meeting

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **Gatsi Primary School** |
| Date Visited | 29 November 2020 |
| Cost | USD 7,700 |
| Project Description (MoU) | Weir construction, 3km main line infield works for 2ha banana, water reticulation system to supply water to Gatsi Primary school |
| Village(s) | School |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.522, 32.819 |
| River | Mutarazi |
| **Key persons met** | Headmaster, Teacher. The team arrived at the station late after business |
| **The Project** | |
| Project selection (how?) | Did a project proposal which was accepted by PP2 |
| What was done? | Weir construction, and 3km pipeline from Mutarazi river and infield reticulation for 2ha |
| What changes have occurred *since* the completion | Water security for the 888 pupils and 30teachers. Irrigated vegetable and banana |

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| | plantation. Good water supply for the school and the environs |
| **Issues to be covered:** | |
| Own contribution | Used parents who could not afford school fees as labour for trenching |
| O&M and funding | Groundsman and Project manager trained by PP2 |
| Re-investment | Use funds from project for repairs. Development of extra hectare to be irrigated Bought 10 goats and 8 chickens which they are rearing |
| Gender / disadvantaged groups | 452 out of 888 pupils are girls with a sizeable number coming from marginalised communities. 19 out of 30 teachers are women |
| Livelihood | Increased payment of fees from the plantation fund. Now pay for 15 up from 2 in 2017, Farm produce used as relish in the pupils feeding scheme. Extra funds use to buy school furniture. Still supplies water to community and clinic and produce is also sold to the community |
| Relevance to the IWRM | Understanding of water management at grassroots level- teaching pupils on IWRM issues. They pay levies but yet to pay for 2018 as the school was closed due to COVID 19 restrictions. Practicals for agriculture for children |
| Management of the project. Mgr. duties, responsibilities | SDC is the management committee, Permanent project manager for the project but pupils also allocated duties including selling of produce as part of capacity development |
| Training (project & financial management, O&M) | Agritex |
| Technical support / extension | Agritex farmer training |
| Involvement / decision-making | The committee decides |
| Additional Requirements | Protect water source from clogging. ZINWA may need to investigate because the screens are not working properly. Additional storage tank, fencing |
| Limitations | Market still ad hoc. Need to establish a good and continuous market for their produce. Low water flows form Mutarazi river |
| **Interviewer Inputs** | |
| Setup during site visit | Good banana crop, some uncultivated areas indicate lack of water. Flow form sprinklers lower than what was seen on site 2017 |
| Changes Since 2017 | Extension of additional 1Hactare for 500 banana plants and sugar bean. Dug fish pond but yet to complete |

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| Comments | Well managed project. The Ministry of Education has shown interest with the Permanent secretary for Education for the Ministry personally sourcing markets for their produce. Need to fence of their plantations as they are close to the community centre. The school need to employ more hands for the plantation. It was evident that the scheme had been affected by COVID as pupils who used tend in the garden were not available for over 6months |

Picture: Gatsi Primary School meeting the headmaster and one of the teachers

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **Kushinga Irrigation Scheme** |
| Date Visited | 28 November 2020 |
| Cost | USD 22,500 |
| Project Description (MoU) | 26 farmers (15women,11men) with 0.5Hactere plots under irrigation<br>Gravity mains from weir replacement with standard material, construction of tank, provision of sprinklers to irrigate mainly banana, potatoes. Beans, plantations and vegetables |
| Village(s) | Tegwe, Muparutsa |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.448, 32.891 |
| River | Murara |
| **Key persons met** | Chairperson), 2 Secretaries, V/Chair, Treasurer |
| **The Project** | |
| Project selection (how?) | Commenced 5 years back when members started contributing USD20/month and constructed weir and used inferior material to supply water to their field |
| What was done? | Replaced Gravity mains from weir replacement with standard material, construction of tank, provision of sprinklers |

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| What changes have occurred *since* the completion | Replaced 300m of burst pipe (3 times). No expansion due to water challenges. Developed an additional source upstream |
| **Issues to be covered:** | |
| Own contribution | Still maintain contributions for repairs and maintenance |
| O&M and funding | Using internally generated funds |
| Re-investment | Pipe replacements, |
| Gender / disadvantaged groups | 15 out of the 26 plots belong to woman and women also part of the leadership |
| Livelihood | Some managed to build their own houses, some bought home gargets<br>Main crops beans (twice a year), and planting all year around |
| Relevance to the IWRM | Understanding of water management at grassroots level<br>Used to pay for water use through levies but have stopped as they feel disadvantaged by illegal abstractions upstream of their source. |
| Management of the project. Mgr. duties, responsibilities | Management committee of 7 members (1men, 6women), Yearly elections |
| Training (project & fiscal management, O&M) | Agritex training on farming methods |
| Technical support / extension | Not any |
| Involvement / decision-making | The committee decided |
| Additional Requirements | Roof for the tank so that the water can be portable. Borehole to supplement water resources<br>Basin transfer from another river source |
| Limitations | Severe water shortages due to drought |
| **Interviewer Inputs** | |
| Setup during site visit | Still the same. Much less flows in to the reservoir compared to 2017 Banana plantation not as flourishing |
| Comments | Good scheme. Low production has caused animosity due to water shortages. Now fighting with PSCC on payments of levies. There has been poor communication with PSCC. Severe conflicts of water use with other farmers outside the scheme. ZINWA and PSCC must carry out awareness campaign for the schemes to understand why levies are being paid for |

Picture: From left to right, top: Banana plantation, Reservoir still not roofed
Bottom: Kushinga Irrigation Scheme

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **Nyamandwe Irrigation Scheme** |
| Date Visited | 29 October 2020 |
| Cost | USD 47,500 |
| Project Description (MoU) | 15ha Communal Irrigation Scheme for 29 households. 100m$^3$ brick reservoir construction, 5km mainline & infield works developed. |
| Village(s) | Nyamandwe |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.587, 32.705 |
| River | Duru |
| **Key persons met** | Chair, Farmer, 2 Members |
| **The Project** | |
| Project selection (how?) | Had a village concept which had been failing to attract funds for years |
| What was done? | Construction of a 100m3 water reservoir. Additional 3km mainline & infield works developed, household offtakes. Farmers and already started in 2012 using a wasteful canal, before PP2 came in. PP2 added 4km pipeline and completed reservoir. The projects offtake is at the Duru Hydroelectric plant weir |
| What changes have occurred *since* the completion | The 29 families no longer vulnerable to droughts. Reduction in crime rates |

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| | Yields have increased<br>Good quality crop |
| **Issues to be covered:** | |
| Own contribution | Have an account for maintenance with they loan out to members to beat inflation |
| O&M and funding | Use account funds |
| Re-investment | Additional offtakes and hosepipes |
| Gender / disadvantaged groups | 19 out of 29 of the households are women, the committee of 8 has 3women where the current chair is a woman. |
| Livelihood | Support the bereaved and orphans |
| Relevance to the IWRM | Understanding of water management at grassroots level, Very good understanding of the water allocation with other competitors especially Duru Hydro power plant. The scheme gets enough water as well as the gauge plate at the Duru weir is above 20cm. The scheme is an integration of water use for hydroelectric generation and food production (Water Energy and Food Nexus). Pay levies to PSCC |
| Management of the project. Mgr. duties, responsibilities | Management committee of 8 members (4men, 4women). Very clear roles for committee which is elected into office annually and meet monthly to review progress<br>Yearly elections which are monitored by Agritex |
| Training (project & fiscal management, O&M) | Agritex, National tested Seeds ( bean production contractor) |
| Technical support / extension | ZINWA and Agritex |
| Involvement / decision-making | Decisions made by the committee |
| Additional Requirements | Reservoir roof which is a hazard as children play around the unprotected area |
| Limitations | None as long as Duru Hydro adhere to stipulated guidelines |
| **Interviewer Inputs** | |
| Setup during site visit | Very good scheme with thriving banana, maize, beans crop. The only scheme with thriving crops and no water shortage. However due to the bad season, the Duru Hydroelectric scheme had to reduce power generation to ensure that farmers get enough water. There are over 100 off takers from the Duru weir |
| Changes since 2017 | Additional household off takes, bought hosepipes for to assist in irrigation |
| Comments | Very good scheme. Well gelled committee and good understanding of water allocation. Paying all levies to PSCC. The good results from the project has resulted in other villagers developing their own scheme |

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| | using the same concept used by the Nyamandwe irrigation schemes<br><br>It is the only scheme where they took COVID 19 seriously. All visitors are sanitised and temperature tested before any discussions can commence |

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **Nyamakowero Irrigation Scheme** |
| Date Visited | 28 October 2020 |
| Cost | USD 22,000 |
| Project Description (MoU) | Communal Irrigation Scheme for 15households. 350m$^3$ Tank construction, 5km mainline & infield works developed. |
| Village(s) | Nyamakowero |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.432, 32.876 |
| River | Nyapande |
| **Key persons met** | Chair, V/Chair, Secretary, Treasure |
| **The Project** | |
| Project selection (how?) | Had a village concept which had been failing to attract funds for years |
| What was done? | Started off in 2012. When PP2 came in 2016 they had done 3km of pipe. PP2 added |

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| | 4km Construction of a 350m3 water reservoir, 5km mainline & infield works. They provided own labour including brick moulding |
| What changes have occurred *since* the completion | 15 households now food secure and envy of the area. Improved livelihoods Reduction in crime rates. Yields have increased. Now with better negotiation skills for better contracts for their crops and deal directly with markets<br>Preparing land to include Macadamia nuts, litchee and other fruits |
| **Issues to be covered:** | |
| Own contribution | Replacement of burst pipes |
| O&M and funding | Replacement of burst pipes |
| Re-investment | 9 farmers bought additional sprinklers<br>No major repairs yet. Contribute to maintenance system when required |
| Gender / disadvantaged groups | 4 out of 15 of the households are women, the committee of 8 has 4women where the current chair is a woman. |
| Livelihood | Proceeds form their gardens have enabled them to buy groceries, send children to school and develop their homesteads |
| Relevance to the IWRM | Understanding of water management at grassroots level, Very good understanding of the water allocation. |
| Management of the project. Mgr. duties, responsibilities | Management committee of 8 members (4men, 4women). Very clear roles for committee which is elected into office annually<br>Yearly elections which are monitored by Agritex |
| Training (project & fiscal management, O&M) | After PP2, they have been getting training from Agritex officers |
| Technical support / extension | ZINWA and Agritex |
| Involvement / decision-making | Decisions made by the committee |
| Additional Requirements | Create one offtake for every scheme and proper scheduling<br>Create other water sources from another river (Nyangarire) and transfer water over a 10km pipeline to existing water works.<br>Roof for tank- currently a hazard for children. Construct road to reservoir |
| Limitations | Too many off takers upstream of their source resulting in very imitated quantities flowing int their reservoir<br>Illegal abstractions upstream of their source |
| **Interviewer Inputs** | |
| Setup during site visit | Very good scheme. Very limited water due to other offtakes |
| Changes since last Visit | N/A |

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| Comments | Very impressive scheme but being affected by water shortages. Scheme comprised mainly of the elderly who have transformed their lives through hard work and dedication. They are sending their children to school and have improved houses. The good results from the project has resulted in other villagers developing their own scheme using the same concept used by the Nyamakovero irrigation schemes |

Picture: Nyamakowero scheme showing additional areas opened up for irrigation and houses built from farming proceeds.

| ITEM | Data collected / source / description |
|---|---|
| **Project Name** | **St Columbus Primary School** |
| Date Visited | 28 October 2020 |
| Cost | USD 22,000 |
| Project Description (MoU) | Communal Irrigation Scheme for 15households. 350m$^3$ Tank construction, 5km mainline & infield works developed. |
| Village(s) | School |
| District/Province | Mutasa, Manicaland |
| GPS coordinates | -18.505, 32.864 |
| River | Ruda |
| **Key persons met** | Headmaster |
| **The Project** | |

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| Project selection (how?) | The project was already in place but broken down. Conceptualised by the School development Committee |
| What was done? | Rehabilitate pipes to field edge. Fencing off of 3hactare plantation. Roofing of water reservoir |
| What changes have occurred *since* the completion | Opened up additional banana plantations |
| **Issues to be covered:** | |
| Own contribution | Replacement of pipes and sprinklers |
| O&M and funding | Replacement of burst pipes |
| Re-investment | Expansion of scheme |
| Gender / disadvantaged groups | SDC committee has 4men and 1 woman. Works with school pupils |
| Livelihood | Has raised quality of school. Bought office furniture and one computer from the proceeds which resulted in other donor agencies coming on board. Supports 10 pupils with fees |
| Relevance to the IWRM | Understanding of water management at grassroots level, Very good understanding of the water allocation. |
| Management of the project. Mgr. duties, responsibilities | Management through SDC and Project Master and school pupils |
| Training (project & fiscal management, O&M) | Matanuska, one of the buyers of bananas |
| Technical support / extension | ZINWA and Agritex |
| Involvement / decision-making | Decisions made by the committee |
| Additional Requirements | Create one offtake for every scheme and proper scheduling<br>Create other sources from another river (Nyangarire) and transfer water over a 10km pipeline to existing water works<br>Roof for tank- currently a hazard for children<br>Construct road to reservoir |
| Limitations | Source dried out. No other source. Stopped irrigating in March to reserve water for primary uses |
| **Interviewer Inputs** | |
| Setup during site visit | Banana plantation showing moisture stress. Some of the plants were already wilting |
| Changes since last Visit | N/A |
| Comments | I once visited the scheme in 2015. It was a thriving plantation. This time it was really sorry site because of water challenges |


BANANA PROJECT
PLOT ESTABLISHED QUANTITY
A 2010 2150
B 2011 890
C 2012 3110

# Evaluation of the Pungwe Basin Transboundary Integrated Water Resources Management and Development Programme (PP2), second phase

Sweden has supported development in the Pungwe Basin in Mozambique and Zimbabwe since late 1990s. A review was carried out in 2017 covering the period 2007–2017. Swedish support terminated in 2017. This report presents the final evaluation in which the result of the 2017 review is compared to the results three years later, in 2020. Effectiveness deteriorated slightly stemming from lower scores in the environmental protection component. The process towards sustainability improved significantly due to both governments' strong decentralisation efforts and an institutional overhaul of the regional water administration structure in Mozambique. Impact was mixed: regional water agreements were successfully achieved but strategies and policy uptake insignificant. Recommendations include strengthening the two countries' water administration through: (i) improved human resource development, marketing, strategies and management; (ii) strengthened collaboration with other water related institutions; (iii) targeted support to the basin's rural communities; (iv) prioritising investment in equipment and technology, expanding and maintaining the monitoring network and improve data management.

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