Enabel

DNAAS
Direcção Nacional de Abastecimento de Água e Saneamento

Final narrative report

CLIMATE-SMART DEVELOPMENT IN MOZAMBIQUE: USING RENEWABLE ENERGY FOR SUSTAINABLE ACCESS TO SAFE AND AFFORDABLE DRINKING WATER IN GAZA PROVINCE

Mozambique

Belgian development agency

enabel.be

Table of contents

0 Abbreviations

AKVO FLOW	Software designed for managing rural water and sanitation projects and programmes
BTC	Belgium Technical Cooperation
BVI	Company contracted to supervise construction of the WSS
CAS	Water and Sanitation Committees
DAS	Department of Water and Sanitation
DNAAS	National Directorate for Water and Sanitation
DPOP	Provincial Directorate of Public Works
Enabel	Belgian Development Agency
FUNAE	National Energy Fund
GeoMati	Consultant company contracted to implement the PEC
IMF	International Monetary Fund
M&E	Monitoring and Evaluation
MOPHGRH	Ministry of Public Work, Habitation and Water Resource Management
PEC	Community Education Programme
PESA-ASR	Rural Water Supply and Sanitation Strategic Plan
PMT	Project Management Team
PRAVIDA	Water for Life Programme
PROSANAR	National Programme for Rural Water and Sanitation
RERD2	Renewable Energy for Rural Development Phase 2
SDG	Sustainable Development Goal
SDPI	District Service for Planning and Infrastructures
SINAS	National Information System on Water and Sanitation
VAT	Value Added Tax
WASH	Water, Sanitation and Heath
WB	World Bank
WHO	World Health Organisation
WSS	Water Supply System

1 Intervention form

Title of the intervention	Climate-Smart Development in Mozambique: Using renewable energy for sustainable access to safe and affordable drinking water in Gaza Province
Code of the intervention	MOZ19001-10010
Location:	District of Chókwè, Province of Gaza, Localities of ➢ Chiaquelane: 24°48'54.73"S and 33° 7'56.37"E ➢ Titite: 24°40'6.57"S and 32°59'31.13"E ➢ Tlawene: 24°45'8.13"S and 32°53'11.70"E
Partner institution	National Directorate of Water Supply and Sanitation (DNAAS) and Provincial Directorate of Public Works Gaza (DPOP Gaza)
Start date of the Specific Agreement	01/05/2019
Start date of the intervention/ Opening steering committee	01/05/2019
Expected end date of execution	28/02/2022
End date of the Specific Agreement	28/02/2022
Target groups	The communities of Titite, Tlawene and Chiaquelane villages in Chókwè district
Impact[1]	To contribute to climate resilient social and economic development of vulnerable populations in Gaza Province
Outcome	Improved sustainable access to safe and affordable drinking water through a systemic approach encompassing renewable energy, healthy living, empowerment of communities and local economic stakeholders.
Outputs	Output 1: Renewable energy powered water network is installed and provides secure access to safe drinking water.
	Output 2: PEC Community Education Programs empower communities in water efficiency, sanitation and management and climate awareness, adaptation and mitigation skills.

[1] Impact regards the general objective; outcomes regard the specific objective; output regards the expected result

	Output 3: Sustainability of the water network system is secured through the involvement of private and local stakeholders in the operations, management and maintenance.
Total budget of the intervention	€1,270,206 ➢ Government of Flanders: €1,000,000 ➢ Study and Expertise Fund: €87,706 ➢ Brussels Capital Region (IBGE): €182,500

2 Self-evaluation of performance

2.1 Relevance

	Performance
Relevance: extent to which the intervention is in line with local and national policies and priorities as well as with the expectations of the beneficiaries.	**A**

The project is embedded in the Governments National Programme for Rural Water and Sanitation – PRONASAR – which implements the Rural Water Supply and Sanitation Strategic Plan 2006-2015 - PESA-ASR - through the National Directorate of Water Supply and Sanitation (DNAAS).

The project is highly relevant and contributes to international policy targets such as the Sustainable Development Goals – SDGs – and those of the Paris Agreement on Climate Change.

The intervention logic is relevant and adequate although, with hindsight, the target values for some of the output indicators should have been revised at the time of baseline data collection.

The objective (outcome) of the project is to provide the target communities with safe drinking water, using renewable energy to increase local level climate resilience. The project design was guided by lessons learned in the five-year BTC (now ENABEL) "Water Gaza" project between 2014 and 2019. Improving access to safe water is the number one priority for the government of this semi-arid, drought prone province. The target communities for this intervention are among the most vulnerable in Mozambique since they lack basic government services and infrastructures, including access to safe water. They live in low-lying areas which suffer regular, prolonged droughts as well sporadic, heavy rainfall that results in calamitous floods in the Limpopo River Basin, such as those that occurred in 2000 and again in 2013. The project is thus highly relevant for the beneficiary group.

2.2 Effectiveness

	Performance
Effectiveness: extent to which the outcome (specific objective) is achieved as planned at the end of project	**B**

The outcome has been fully achieved as planned but with an eight-month delay because of COVID-19 related supply-side issues that affected the importation of the equipment for the water systems. The three target communities have been provided with safe and affordable drinking water. Two of the water systems employ carbon-free solar energy for water pumping and desalination. The third uses energy from the national grid generated by hydropower.

The Community Education Programme (PEC) was an integral part of the project and trained and assisted the beneficiary communities, through specifically created Water and Sanitation Committees (CAS), in key areas of water use and management, sanitation and hygiene (WASH), climate change adaptation and COVID-19 prevention and control.

Operation and management of two of the three water systems has been contracted out to a private sector company. The third was handed over to the Government, which assumes the responsibility to launch a tender for private sector management.

COVID-19 caused disruption to equipment supply chains for the Chiaquelane WSS resulting in delays in arrival of the equipment in Mozambique that necessitated an extension of the intervention to ensure completion of the system. COVID restrictions on meetings and movement of people required an adaptive management response[2] to keep implementation on track.

2.3 Efficiency

	Performance
Efficiency: extent to which the resources of the intervention (funds, expertise, time, etc.) have been economically converted in results	**B**

Input and activity management were efficient, within the confines of COVID restrictions. The three planned water supply systems (WSS) are installed and operating efficiently. They provide water to approximately 6,393 persons, 81.4% of the target. The quality of the equipment is good and the installation of the WSS was carried out professionally.

The Community Education Programme (PEC) trained 2,417 persons in the 3 target communities in the areas of climate change adaptation and mitigation, WASH, and COVID-19 prevention and control.

Fifty-eight Water and Sanitation Committees (CAS) have been created and their 199 members have received several trainings in rational water use and management of the taps and water meters. All of the CAS have at least one woman in a leadership position, 69% of the CAS have women as president. The intervention has significantly increased women's leadership and decision-making role in water use and management.

Efficiency was ensured during the implementation period through a strong institutional linkage with the government at all levels. Government ownership of the intervention ensured efficient implementation, despite COVID related delays that had an adverse impact on the timing of implementation of some project activities.

2.4 Potential sustainability

	Performance
Potential sustainability: . The degree of likelihood to maintain and reproduce the benefits of an intervention in the long run (beyond the implementation period of the intervention).	**B**

Regarding financial/economic viability: The two solar powered water supply systems have low operational costs. They are economically viable; revenues are sufficient to pay running costs. But they are not yet profitable businesses. Consumer demand for the good quality water has already resulted in 24 new lines being installed by the private sector operator in two of the villages. If this trend continues, the water systems may become profitable as time goes on. The Chiaquelane water system is powered by electricity from the national grid. Operational costs will thus include the payment of the monthly electricity bill. Economic viability of the Chiaquelane system may not be achieved in the short term with the existing (35) water lines. However, the system was designed

[2] Social distancing and fewer persons at training sessions, greater use of electronic means of communication, virtual meetings, essential field visits only.

for expansion and has the potential to supply water to many more households. Demand for additional water lines is expected to be high because the quality of the water is better than the water from other suppliers for a similar unit price.

The two solar powered water systems are under private sector management on a contract of 5 years. A community member has been trained at each site to assist the private sector manager in the operation of the systems, including payment collection. The Chiaquelane water system was handed over to the Government which intends to launch a tender for its management, in line with DNAAS policy for this type of rural water supply system.

The level of policy support provided to the project and the degree of interaction between the intervention and the policy level has been very positive at all levels of government. Notable is the support provided by the Provincial Department of Water and Sanitation (DAS) and by the District Planning and Infrastructure Service (SDPI).

Through awareness raising and training from the PEC, community management of water points has improved and resulted in 100% payment rates from water users for the two systems (Titite and Tlawene), which were completed 8 months prior to the end of the intervention and allowed enough time to monitor the adherence of community members to the water taps. The government services at the provincial and district level have gained experience in the design and management of this type of integrated project that combines water supply with renewable energy, climate resilience, a community education programme and private sector management with community involvement.

2.5 Conclusions

- The project has successfully achieved its objective (outcome) and results (outputs), bringing particular benefits to women and girls, the persons responsible for water management at household level.
- The target communities have received a comprehensive social education programme in WASH and climate change adaptation, channelled through the 58 Water and Sanitation Committees (CAS) created by the project, and delivered by trained community-based activists and trainers.
- This type of integrated water supply project is a good model for replication and scale-up in Mozambique compared to standard water supply projects that do not include community education or private sector management.
- The inclusion of desalination technology in the water systems, although relatively expensive as an initial investment, immediately solves a long-running, and otherwise insoluble problem facing the government in its drive to provide safe water to rural communities where water sources are brackish.
- The use of zero-carbon solar energy to drive the water supply systems, including the de-salinators, reduces operational costs, reduces climate emissions and enhances climate resilient socio-economic development in vulnerable rural communities.
- Relatively complex water supply systems, such as those installed in this project, require competent and skilled management; they cannot be sustainably managed by communities. They require well-resourced, private sector operators. To attract private sector operators, the systems have to design financial sustainability into their concept (e.g. no. of beneficiaries, degree of expansion, maintenance costs, etc).

Intervention Manager Enabel
Laurence Janssens

3 Assessment of the intervention strategy

3.1 Evolution of the context

3.1.1 General and institutional background

The project started in May 2019, when the country was in the middle of its political campaigns for the presidential, National Assembly representatives and provincial governors' elections (the latter for the first time). As such, most of the partner's staff was deeply involved in political activities and could not organize or attend project meetings. As a result of the elections in October 2019, a new government cabinet was set up in January 2020 resulting in changes, at both central and provincial levels. At provincial level, the new system of decentralized government led to the rotation of some top-level officials.

Our partner institutions (MOPHGRH-DNAAS) were not affected at national level but suffered three successive changes at provincial and district levels in Gaza Province. This resulted in the unavailability of top officials to follow-up on the project, between May and August 2020, when Mr. João Chivambo, former SDPI district director in Chokwe, was appointed as Gaza Provincial Director of Public Works. As Mr. Chivambo knew well Enabel and the project (from the WATER GAZA project), his nomination boosted project progress.

The deterioration of the financial situation in Mozambique since 2016 continues to produce negative effects until now. This situation was aggravated by the suspension of budget support and funding from the majority of the country's development partners since 2017. This produced immediate negative impact on the government departments operations and the allocation of their resources for investment at all levels (national, provincial and district). All services related to the water sector are affected by the above, in particular by the restrictions to recruit or replace retiring staff and technicians, which reduces the partner's capacity to monitor the activities implemented by different projects, including this one. Recently there have been encouraging signs from the major donors (e.g. the IMF and the WB) that funding channels are about to be reopened.

The major contextual evolution compared to the beginning of the project has been the impact of COVID-19 pandemic which put the government under significant financial pressure, caused a major upheaval in market supply chains and seriously restricted the free movement of people and goods. From March 2020 until the end of 2021 effective and timely project implementation was a significant challenge which required innovative, adaptive management changes. These included a reduction in field visits, a reduction in the number of persons participating in the training provided by the PEC programme and an increase in remote methods of working such as TEAMS, WhatsApp, telephone etc.

The COVID related impact on goods' supply chains around the world delayed the purchase and arrival of essential imported equipment for the Chiaquelane water system. This is the major reason for the delay in completion of the project in that community. COVID has been the major constraint that the project has faced relating to the achievement of the objective.

3.1.2 Management context

3.1.2.1 Partnership modalities

This project is mainly funded by the Flanders International Cooperation Agency (Regional Climate Funds) and implemented by Enabel under a Special Agreement. In early 2021, the intervention benefitted from a top up of climate funds from IBGE of approximately €182,500, to be able to co-finance the water supply system of Chiaquelane. The National Technical Assistant is paid through the bilateral project (Study and Expertise Fund), which was Enabel's contribution to the intervention.

This intervention is implemented under regie execution modality and therefore its tenders/ public markets follow the Belgian public procurement laws and regulations. However, to strengthen the ownership by the partners (DNAAS/DPOP), Enabel involves them in the whole procurement process, particularly in checking the adequacy of the ToR, the price offers and their compliance with local policies, priorities and needs.

During the implementation of the intervention, several small tenders were launched, evaluated and awarded in preparation for the works (topography studies, project executive study, pumping tests,) as well large public tenders for the works contracts for the 3 sites, the supervision contracts and the community education consultancy. These were in the form of public contracts guided by the Belgian public procurement legislation. The overview of all the public contracts concluded can be found in Section 10.7.

It is important to note that two contracts (MOZ19001-10004 and MOZ19001-10006) related to supervision of the works, still have pending payments of the last invoice, which will only be paid after the final acceptance of the corresponding works. Due to the value of the contract, no performance bond (guarantee or other) was requested, so withholding the final payment ensures that the supervisor is more responsive during the 1 year guarantee period between provisional acceptance and final acceptance, if any irregularities arise. It is recommended that regardless of the contract value, supervision contracts in the future are required to submit a performance bond to mitigate performance risks. The detail of the two pending invoices are as follows:

Name of entity	Contract ref.	Value still to be paid incl. VAT	Provisional acceptance date	Exp. Final acceptance date	Proposed payment date of final invoice
INGEROP	MOZ192/ MOZ19001-10004	MZN 66,014.27	27 April 2021	27 April 2022	Mid-May 2022
BVI	MOZ19001-10006	MZN 131,474.84	28 February 2022	28 February 2023	Mid-March 2023

In consultation with Enabel HQ and the Flander's government, it was authorised that the two outstanding payments may be paid at the tentative dates mentioned in the table. These payments will be carried out by Enabel HQ accordingly.

In addition to the public contracts, short term expert consultancies were concluded with two consultants, following the end of the National Technical Assistant's contract in April 2021. The consultants, namely a WASH expert to coordinate the activities and a local field consultant to oversee the site activities, were deemed important to fill the gap that came to light after the NTA's

contract came to an end. The NTA's contract was not renewed after a re-evaluation of the type of support required for the successful implementation of the intervention demonstrated that the NTA did not possess the required skillset. Nonetheless, the combination of the two consultants resulted in a wider pool of skills (WASH and Local context) and responded to the skills gap previously identified.

An innovative partnership modality, Letter of Agreement (LoA), was implemented during 2021 with DPOP Gaza, so that the technicians could deliver a training on data collection and processing on water infrastructures using new technologies, that would feed into SINAS (national water database). Enabel supported SINAS training in 2016, with the technicians of Gaza Province demonstrating a fast assimilation in data collection and database management. Having registered the best results in data collection, the focal point for the SINAS database in Gaza Province would in turn train the SINAS focal points in the Southern region, namely province of Maputo and Inhambane. The objective of the training is aligned with the Action Plan 2019-2022 of DPOP Gaza, of which one of the activities is the development of a sustainable database in the sector at all levels and covering different components (hand pumps, water supply systems, etc). This activity will contribute to the reinforcement of the capacity of the institution in terms of data collection and digitalisation in a priority sector for the country. The LoA was signed on the 18th of August and the final report was received on the 12th of October 2021. Considering the training would be delivered by the technicians themselves, the LoA was the most suitable modality as the training required support for (i) per diem of staff and (ii) travel subsidy. Neither a public tender nor a grant would have met the requirements for this partnership. The experience with the LoA for a specific action, such as this one, allowed us flexibility and fostered trust between the institutions, while promoting ownership by the partner.

3.1.2.2 Operational modalities

The implementation modalities are clear and were presented and discussed at the beginning of the project. This ensured adequate involvement of the partner in the monitoring/supervision of the project activities which will contribute to the sustainability of the initiative in the future because of the heightened sense of project ownership among key government staff.

In order to avoid operational problems emerging from heavy and bureaucratic processing of tax exemption, which is granted to Enabel based on the Standard Cooperation Agreement signed between the Belgian and Mozambican governments, the Flanders contribution includes financial resources for the payment of local taxes, particularly the VAT. This mitigates the loss of financial resources as a result of the government's limited ability to timely repay VAT.

These operational modalities are considered appropriate in the light of the results achieved by the project.

3.2 Significant changes to the intervention strategy

A technically oriented strategic change concerning the project of the Chiaquelane WSS took place. According to the project documents, the population of the 6th *bairro* (ward or administrative block) of the Village of Chiaquelane was the target population, as it is one of the *bairros* where recent climate migrants have resettled and that there was no appropriate water infrastructure. As such, the population had to travel to other *bairros* to fetch water. However, during the executive study, it was noted that it would not have been socially accepted by the population of the Village, to only supply water to the 6th *bairro* (which is an expansion zone and furthest away from the distribution

network). The other *bairros* that are closer to the distribution network do not all have access to water, and it could have caused social unrest to utilise their boreholes without supplying water in those *bairros*. As such, the project executive study for the Chiaquelane WSS resulted in a design that covered the entire population of the village of Chiaquelane, but had an estimated cost of €800,000, which was much higher than the estimated cost for the works. This was a result of the distance between the Distribution Centre and the 6th *bairro*, which made the cost of expanding the network substantially high. In order to proceed with part of the works, the executive study was reviewed and redesigned in three progressive phases, with the last phase providing coverage for all the *bairros*. Enabel, with additional topping up of IBGE, managed to complete the works for phase 1 and part of phase 2, thereby supplying water to at least 3 *bairros*.

The works were designed in such a way that the next phases can be completed by expansion of the network, thereby guaranteeing the completion of the system. Due to expectations of the residents of Village of Chiaquelane in receiving water, it was necessary to sensibilize the village residents, especially of the 6th *bairro*, about the constraints of the intervention, which was done successfully by the PEC consultants in close collaboration with the community leaders. Due to the tight implementation period of the intervention, it was not possible to source alternative funds to complete the Chiaquelane WSS within the foreseen duration of the intervention.

As previously mentioned, the intervention strategy was impacted by the covid-19 pandemic, which caused a major upheaval in market supply chains and seriously restricted the free movement of people and goods. Consequently, this translated into higher costs for construction material as well as longer transport times as a result of restrictions in travel (air and sea). As a result, the initial costs of the infrastructure were higher than estimated and the lead times for procurement were also delayed. In order to account for the additional costs and delays, the intervention managed to secure a top up of climate funds from Brussels Region (IBGE) to co-finance the WSS of Chiaquelane, of €182,500. This was not initially foreseen in the intervention documents. The works also took longer than expected to be completed due to covid-19 delays (material shortage and longer lead times), and it was clear that the outputs would be completed before the 31st of October 2021. Thanks to the flexibility of the donor, a no-cost extension and budget modification was conceded on the 14th of October 2021 up to end of February 2022 (additional 4 months), to allow the final works to be completed smoothly and to channel unused funds to the infrastructure component and supervision component of the intervention.

4 Achieved results[3]

4.1 Performance of outcome

4.1.1 Achieved indicators[4]

[3] 'Results' means 'development results'. Impact regards the general objective; outcomes regard the specific objective; output regards the expected result; intermediate outcomes regard changes resulting from the achievement of the outputs allowing progress towards the outcome of the intervention, at a higher level.

[4] *You may use the table given or replace it with your own monitoring matrix format. Add/delete columns in function of the context (certain interventions will have to add columns for preceding years while – new – interventions will not have values for the preceding year).*

Outcome: Improve sustainable access to safe and affordable drinking water through a systemic approach encompassing renewable energy, healthy living, empowerment of communities and local economic stakeholders				
Progress indicators/markers[5]	**Base value**	**Final target**	**Final value attained**	**Comments**
% of total population of the intervention area benefitting from safe and affordable drinking water (SDG)	0	100	81.4%	Total target population was 7,850 persons. Direct beneficiaries are currently calculated at 6,393 persons
% of climate migrants in the intervention area benefits from safe and affordable drinking water	N/A	100	64.4%	Approx. 2,651 persons in Chiaquelane are climate migrants
% of public institutions with access to safe and affordable drinking	6	5	83.3%	5 public institutions supplied with safe water: 3 schools, 2 health posts
Quantity in litres of safe and affordable drinking water used per person/ day (DNAAS)	0	20	±13	Based on consumption data, each family uses an average of 68 litres per day.
% of community members without waterborne diseases	N/A	100	100	
% of households dropping out of water system connection	N/A	0	0	24 families have requested additional, individual water lines
Amount of time spent on fetching water at the closest water point	>60 mins	<60 mins	<60 mins	The time spent has been significantly reduced
% of Water Committees who implement climate resilient	N/A	100	100	All 58 Water Committees

[5] *Use the indicators given in the logical framework (of the TFF or of the last version of the logical framework).*

management rules & regulations for water efficiency, protection & sanitation				

4.1.2 Analysis of the achievement of the outcome

The three water supply systems are completed and operational. They are currently supplying water to 6,393 persons, 81.4% of the targeted population. Consumer demand for additional water lines resulted in 142 new consumers in the second semester of 2021.

The change in intervention strategy in Chiaquelane reported in section 3.2 makes it difficult to calculate the impact of water supply for climate migrants. Government data reports that 64.4% of residents in the village are persons resettled after the 2013 floods. Enabel is supplying water to 4,117 persons in Chiaquelane. Therefore, it is estimated that 2,651 of these are likely to be climate migrants.

Five public institutions are being supplied with water through the project: 3 schools, 2 health posts. Additionally, water is available to the citizens at the three water distribution centres (one in each village) where taps are located. In total, approximately 3,898 persons have access to safe water while they are at these institutions/centres.

The average consumption per person from the shared domestic water lines, as measured between July and December 2021 from data supplied by the PEC reports for the villages of Titite and Tlawene, is 13 litres per day. The target indicator is 20 litres and the water supply is more than sufficient to meet this target. Current consumption patterns indicate rational use of water to minimise costs.

There have been no reports of water-borne diseases in the 3 target communities among families that have access to water supplied by the new infrastructure.

No families have abandoned the water system connections. But 24 families, originally part of the Water and Sanitation Committees (CAS) that share a tap, have requested, paid for and received their own private water supply.

The amount of time spent – by women and girls – fetching water from the nearest water point has reduced significantly as a result of the project. All consumers live within ±100 metres of the nearest tap.

The 58 CAS and their 199 committee members (76.4% women) have received awareness training and practical demonstrations on climate resilient houses, protection and management of the water taps and water meters, rational use of water. All the shared taps/meters are protected (i.e. from cattle and goats).

To improve community sanitation and hygiene under the challenge of climate change (and COVID-19), the PEC has helped families in the three project villages to build/rehabilitate/improve 827 pit latrines with covers, build 868 bathrooms, construct 1,243 hand washing devices, dig 676 pits for safe rubbish disposal, construct 647 drying tables for dishes, cutlery and pots after washing.

4.2 Performance of output 1[6]

4.2.1 Achieved indicators

Output 1: Renewable energy powered water network is installed and provide secure access to safe drinking water				
Indicators	**Base value**	**Final target**	**Final value attained**	**Comments**
Level of services provided (safe and affordable drinking water)				
Highly improved services	0	100	100	>20 litres/day available per person, home connections, one tap for less than 100 people, less than 200 metres walk to collect water
Improved services	300	0	0	
Basic services	2,700	0	0	
Limited/no service	4,850	0	0	
% of installed drinking water facilities powered by renewable energy contributing to affordable and reliable water services (SDG)	N/A	100	100%	
% of built photovoltaic system for desalination plants are battery free to ensure the universal access to affordable, reliable and modern energy services (SDG)	N/A	100	100	

[6] *The template provides for up to 3 outputs (chapters 2.2, 2.3 and 2.4). In case the intervention has more outputs, simply copy paste. In case the intervention has fewer than 3 outputs, simply delete the superfluous chapter(s).*
For the outcome level you may also replace this table by the intervention's own format (e.g. your operational monitoring tool).

4.2.2 Analysis of the realisation of the output

The output has been 100% achieved. The three water systems are installed and providing secure access to safe drinking water for 6,393 persons. Two of the systems use renewable solar energy and the third uses electricity from the national grid, generated by hydropower.

The two solar systems powering the desalination systems and the pumping of the water are battery free, thereby reducing operational and maintenance costs, reducing emissions and contributing to climate change mitigation.

There is a good opportunity to expand the water supply networks in each village. The water quality is better than from other sources. A group of residents in Tlawene village said that the desalinized water is better than bottled spring water. There is consumer demand for more water lines in each village, principally because the water quality and taste are better than from other sources.

A noted **constraint** is the inability of the solar powered systems, without batteries, to meet consumer demand 100% when there are a number of consecutive overcast days without sunshine. Conversely, on sunny days the system is more than capable of satisfying consumer demand.

4.3 Performance of output 2[7]

4.3.1 Achieved indicators

Output 2: PEC Community Education Programs to empower communities in water efficiency, sanitation, management and climate awareness, adaptation and mitigation skills					
Indicators		**Base value**	**Final target**	**Final value attained**	**Comments**
% of water and sanitation committees linked to the project infrastructures trained and operational		N/A	100	100	58 CAS, created, trained and working
% of women present in the Water and Sanitation Committees (CAS) leadership (gender equity)		N/A	30	76.4%	76.4% of CAS members are women. Women are presidents of 40 of the 58 CAS -69%-
% of beneficiaries who complete the PEC curriculum with a focus on climate change		N/A	100	100	2,417 beneficiaries completed the

[7] *The template provides for up to 3 outputs (chapters 2.2, 2.3 and 2.4). In case the intervention has more outputs, simply copy paste. In case the intervention has fewer than 3 outputs, simply delete the superfluous chapter(s).*
For the outcome level you may also replace this table by the intervention's own format (e.g. your operational monitoring tool).

					training modules
Number of discussions/ workshops with community members on sanitation, water use and management and climate awareness		N/A	6*	120	Total community training sessions was 120 over 19 months; 2,417 persons participated
% of households abstaining from open air defecation		N/A	100	99	Compared to baseline study in 2020 in which 3% of the population reported not having a latrine
Number of initiatives under-taken by community related to climate mitigation and adaptation		N/A	3*	320	Climate resilient houses, climate smart agriculture, pruning dangerous trees

* During the implementation phase, it was realised that the target indicators had not sufficiently analysed the context thereby indicated unrealistic target values. During the baseline study, no value was indicated. This caused a confusion with the collected data and the final values attained during the implementation of the intervention.

4.3.2 Analysis of the realisation of the output

Over a period of 19 months, the Community Education Programme (PEC) provided awareness and practical skills training to a total of 2,417 persons in the 3 target communities in the areas of WASH, climate change adaptation and mitigation and COVID-19 prevention and control.

Fifty-eight CAS, with a total of 199 members have been created: 152 women, 47 men. All of the CAS have at least one woman in a leadership position, 69% of CAS have women as president. The CAS members have been trained to manage and protect the communal taps and water meters, ensure rational water use and ensure that the monthly water bills are paid. They have also received training in sanitation, hygiene, climate change and COVID-19 prevention and control. The latter not a foreseen component of the project, but it was integrated as an important activity because the emergence and spread of the pandemic coincided with the implementation of the project.

The PEC baseline study identified a 3% incidence of open-air defection at the beginning of the project. A latrine building programme resulted in 827 new/rehabilitated improved traditional latrines. As a result, open-air defecation has been reduced to about 1% in the project areas within each village; at least 2 of the *bairros* were completely free of this practice until the end of the intervention; all residents have latrines.

2,417 community members received training in climate change adaptation and mitigation, as well as WASH and COVID-19 prevention and control. The training took the form of theme-based discussions, practical demonstrations and community mini-workshop where simplified technical and managerial messages were shared. The climate change training focused on building community resilience to strong winds, droughts and flood, the most common climate extremes in the area. As a result, about 320 initiatives have been undertaken by participating families such as: numerous houses have been "climate-proofed" in various ways[8], farm fields have been relocated in low-lying areas with residual moisture, numerous potentially dangerous trees (cyclones, trees fall on houses) have been pruned or removed, drought tolerant crops, such as cowpeas, pigeon peas and groundnuts are being grown instead of less tolerant crops such as maize.

The opportunities for women to assume a leadership role in water management have greatly increased through the creation of the CAS. Women and girls have benefitted more from this project than men and boys, because women are responsible for water collection and management at household level.

A positive factor that influenced the achievement of the output is the active participation of the district authorities, notably the Provincial Directorate of Public Works, the District Services for Planning and Infrastructure, and the local leadership structures in the PEC programme. The PEC operated through community leaders which assured the cooperation and participation of the communities. This had a positive impact on the implementation of the PEC activities which were well supported at community level.

4.4 Performance of output 3[9]

4.4.1 Achieved indicators

Output 3: Sustainability of the water network systems is secured through the involvement of private and local stakeholders in the operations, management and maintenance				
Indicators	**Base value**	**Final target**	**Final value attained**	**Comments**
% of water systems which are managed and maintained by private actors	N/A	100	66.6%	Two WSS are managed by a private operator
Number of local authorities - CAS in the private management staff to promote	N/A	3	2	Chiaquelane has yet to select and train a

[8] For example: climate smart siting and orientation of the house, types of materials used, building techniques, awnings to protect the mud walls from rain

[9] *The template provides for up to 3 outputs (chapters 2.2, 2.3 and 2.4). In case the intervention has more outputs, simply copy paste. In case the intervention has fewer than 3 outputs, simply delete the superfluous chapter(s).*
For the outcome level you may also replace this table by the intervention's own format (e.g. your operational monitoring tool).

ownership of the communities				local counterpart
% of the drinking water infrastructures using digital operational & maintenance system (use of enabling technology – (SDG)	N/A	100	66.6%0	The 2 desalination systems are designed for digital operation
% of the water committees (CAS) using a secure & transparent digital payment system	N/A	33	<10	Enabling conditions do not yet exist in the target villages
Number of studies/ seminaries/ workshops on management modalities of the water network system	N/A	2	0	Covid made this type of activity impractical.

4.4.2 Analysis of the realisation of the output

The output has been 66.6% achieved to date. The solar-powered water systems in Titite and Tlawene are being managed and maintained by a private sector company since July 2021. Management of the third water system, in Chiaquelane, will also be tendered (by the provincial government) to a private company in Q1/2 of 2022. This will result in 100% achievement of the objective.

The Titite and Tlawene water systems incorporate desalination technology using digital operational and maintenance options. Water quality and quantity (in and out) is constantly monitored. The local operator transmits this information via WhatsApp to the manager of the system, thereby reducing the need for the manager to be present at each site.

Only 4 of the 58 CAS are currently using a digital payment system (Mpesa from Vodacom or e-mola from Movitel) for their monthly water bill. The others pay cash. The manager of the Titite and Tlawene water systems said that his company promotes digital payment. But he explained there is no Mpesa or-emola agent in the target villages where the CAS can deposit the cash value of the water bill. Expanding digital forms of payment for water services in rural areas of Mozambique is a challenge where enabling conditions do not yet exist.

Due to the onset of the covid-19 pandemic as the intervention kicked off, it was difficult to organise seminars/workshops on management modalities. We did approach the National Directorate of Water Supply to discuss conducting a study on the current situation of management modalities of the water supply systems in the Southern Region, however a similar study had already been commissioned. Due to the lack of time and the constraints imposed by covid-19, it was not possible to realise this activity.

5 Synergies and complementarities

5.1 With other interventions of the Portfolio

This project has been designed based on experiences from the bilateral project Water-Gaza, focusing specific attention on climate adaptation and mitigation in the water sector. The project complements other initiatives implemented by the government to improve rural water supply through PRONASAR and PRAVIDA. The solar powered WSS, incorporating desalinators, serves as a demonstration model for climate adapted solutions that can be used for planning future water supply projects.

The project is being complemented by another of Enabel's bilateral project, namely the Study and Expertise Fund, through the provision of the National Technical Assistance (NTA), which was based in the province to provide timely and systematic assistance on the field. After an evaluation of the requirements for the conclusion of the project, it was not deemed necessary to renew the contract of the NTA, but instead contract short to medium term consultants with a specific background (WASH and Hydrology) and experience working in the district/ province. This was then financed by the intervention.

The project prioritizes the use of renewable energy for water pumping and treatment through the use of solar panels and therefore creates synergies with RERD 2[10] and benefits from existing technical expertise created within the National Energy Fund (FUNAE).

5.2 With third-party assignments

The intervention benefitted from a topping up by Brussels Capital Region (IBGE) to be able to complete the construction of Chiaquelane Water Supply System (WSS). The additional funds made it possible to begin with the tri-phase construction of this WSS. At the end, the system had 1 distribution centre and 35 taps that reached approximately 4,000 people, of which approximately 64% are climate migrants. The flexibility of top ups from climate funds such as IBGE provided a unique opportunity to commit to an action that otherwise would not be possible.

6 Priority themes

6.1 The environment and climate change

The project was implemented in the most arid part of Mozambique where long dry spells routinely result in a water crisis for the population. The impact of climate change is exacerbating this situation and improving access to safe drinking water is a major challenge for the population and for the government.

The project was designed to utilise sustainable, renewable energy sources (solar and hydro) thereby eliminating the need for diesel or petrol-powered pumps.

[10] RERD2: The project "Renewable energy for rural development phase 2" focus on renewable for productive use. Additional funding was added to this project in 2021 to address the productive water aspect.

The negative environmental impact of the water supply systems is negligible, the salty wastewater from the desalinization process is safely stored in a fenced “soak away” pond isolated from people and animals.

6.2 Gender

The project has greatly increased access to safe water for women and men, girls and boys. The benefits for women and girls include the reduced time and effort required in the daily task of collecting and carry water to their homes, leaving them with more time for other tasks. Additionally, women have been empowered through their significant inclusion in the leadership of the CAS. All of the 58 CAS have at least one women member. 69% (40/58) of the CAS have women presidents. Women are thus in a notably improved decision-making position vis-à-vis water use and management (including payment) and protection of the facilities than they were before the intervention.

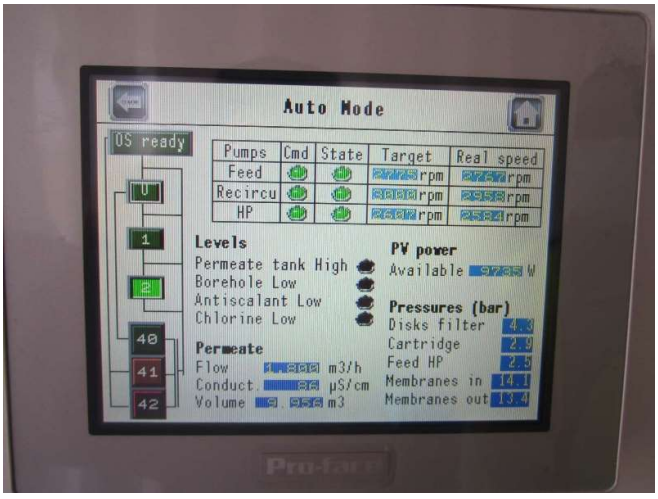
6.3 Digitisation

Before this project began, Enabel had already provided training and capacity building support to technicians from the National Water and Sanitation Information System (SINAS) in Gaza province. This resulted in the updating of the water database in Gaza Province through the use of a digitized technology (AKVO), where water and sanitation information from the towns and districts is remotely sent to be uploaded in the SINAS database. The technology is now being used in other provinces by different actors.

During this project, the GAZA SINAS technicians provided the same training for their counterparts in the provinces of Inhambane and Maputo.

The two WSS with desalinators were designed with the option to use remote management/monitoring through a smartphone. This innovation reduces the management/operation costs of the WSS as it reduces the need of site visits/checks by specialized technicians, who can remotely access the operational technical reports sent by the local operators and thereby reduce travel costs to these remote areas. The photo below illustrates the type of system information that the local operator sends to the private operator, using WhatsApp.

Photo: Digital information generated by the WSS in Tlawene village



The private operator of the WSS in Titite and Tlawene is keen to introduce digital payment for water. However, this is currently a challenge in the respective villages because the agents of the mobile money transfer service – Mpesa and e-mola - are not present and villagers have to pay local transport to Lionde town, (more than 10 kms) in order to pay their bill electronically. Currently only 4 of the 58 CAS are paying their monthly bill by money transfer.

6.4 Decent work

The intervention provided decent work for women and men through the employment of over 150 community members in the digging of the (kilometres of) trenches for the laying of water pipes. At least half of those employed were women.

Involvement of the private sector in the operation and management of the water systems and the desalinators significantly increases the sustainability of the intervention, ensuring decent work for the operator and encouraging the involvement of the community in management of the systems.

At the site of each WSS, a community member is employed to assist the private sector operator in the management of the system. The local operator works alongside the CAS in each village whose members collectively contribute to the management and sustainability of the WSS, notably by promoting rational water use, guaranteeing the security of the facilities and ensuring that water bills are paid.

The awareness and skills training provided to 2,417 persons through the PEC programme, provided community members with decent work to improve water use and management, improve sanitation and hygiene at community level as well as the construction of climate resilient houses and adoption of climate smart agricultural practices[11]. For example, the project assisted community members to build or rehabilitate 827 latrines in their backyards. 58 Water and Sanitation Committees (CAS), comprising almost 200 members have built protective structures around the water taps and water meters to prevent damage from animals or children. The CAS members are collectively responsible for the operation and management of the water points. Over 320 examples of the adoption of climate resilient construction techniques and/or agricultural practices have been observed by the PEC staff.

7 Sustainability

- *What is the economic and financial viability of the results of the intervention? What potential risks are involved? Which measures have been taken?*

Relatively sophisticated water systems such as these require experienced, professional management. Based on experiences of "Water Gaza Project" implemented by Enabel, private sector involvement in the management of WSS, produced positive results and contributed to sustainability of the water facilities. The solar powered WSS at Titite and Tlawene have been under private management for 7 months. During that time, 24 additional water lines have been connected in response to consumer requests. With no electricity or fuel bills to pay for water

[11] use of drought tolerant crop types, sowing in low-lying areas with better moisture retention , minimum cultivation

pumping, the two systems are currently "breaking even" i.e. costs and revenue are about equal. As more lines are added, the WSS should become profitable and economically sustainable.

The WSS at Chiaquelane is designed to supply water to a much greater number of consumers in three phases, of which this project is the first phase. As the WSS uses electricity from the national grid, operational costs will be higher than in Titite and Tlawene. In the short-term, financial sustainability of the Chiaquelane WSS will be a challenge and will depend on the expansion of the water lines to increase the number of consumers. Once completed, the Chiaquelane WSS should become economically sustainable in the hands of an experienced private sector operator.

- *What is the extent of ownership of the intervention by the target groups and will it last after the external assistance ends? What potential risks are involved? Which measures have been taken?*

Community ownership of the intervention is demonstrated through the CAS which are responsible for the management of shared taps (payment and protection of water) and follow-up of due payment by individuals with "private" taps.

The CAS work alongside the local operator (a community member) at each site who is employed by the private company managing the WSS. The local operator is an important element in the sustainability strategy as he/she ensures that the system functions normally and that water bills are paid at the end of each month. To date, the manager of the WSS at Titite and Tlawane reports a 100% payment rate, a very encouraging sign for future sustainability of the systems

- *What level of policy support has been delivered and what is the degree of interaction between the intervention and the policy level? What potential risks are involved? Which measures have been taken?*

The water in the wells and boreholes in much of Gaza province is brackish, above the WHO limits for safe drinking. During the "Water Gaza" project, this situation (brackish water) led to resistance to the use of Belgian funds to rehabilitate or transform existing water infrastructure.

The approval by the government cabinet (Minister's Council) of desalination as one of the officially recommended water solution in 2017 was an important development in water policy. It brought a change in thinking by the government, moving towards: "Drinking water must be potable for all".

The recognition of desalination as a solution for providing potable water to rural communities provided Enabel with a comfortable niche for policy support. This intervention has installed 2 water supply systems with desalinators and one water supply system from boreholes with good quality, potable water.

There is a high degree of interaction between the intervention and the policy level. Ownership of the project by the Provincial Directorate of Public Works was an essential condition for achieving the objectives. Proactive support from the District Services for Planning and Infrastructure throughout the project ensured that the physical execution of the works took place effectively and efficiently.

- *To what degree has the intervention positively contributed to institutional and management capacity? What potential risks are involved? Which measures have been taken?*

The project office and the technical assistance unit were located within the Provincial Department of Water and Sanitation (DAS), part of the Provincial Directorate of Public Works (DPOP). This ensured close coordination and partnership with government and constant capacity building

support at provincial and district level, notably in the use of the water database for project planning and design.

The project design incorporated lessons learned in the Water Gaza project. The updated and operational database, and experience gained with solar powered desalination units contributed to the improvement of ability to plan, monitor and manage its actions in the water and sanitation sector.

While there is some risk that knowledge and skills acquired with Enabel support will be lost in the regular transfer of government staff between districts and provinces, this capacity will in fact still be available through remote channels and will benefit other districts in addition to Chókwè.

8 Lessons learned

- The project approach and methodology combine working through government institutions with the application of a 3-point strategy: water supply infrastructure, community education and private sector management. This mechanism is considered, by Enabel and government partners, as the best practical model for sustainable rural water supply systems in Mozambique. As such it is incorporated within the most recent phase of the PRONASAR programme (2021-2030).
- The technical complexity of the water systems installed through this project necessitate experienced, professional management; community management is not considered a viable option. However, community involvement through the CAS and the local operators is an important element of a sustainable operational and management system.
- Embedding the PEC programme within local government and local leadership structures ensures community adherence to the programme and the relevant follow-up actions by the communities. For example, the construction of protective structures for all the shared taps and water meters and the building of improved latrines and bathrooms.
- The high level of involvement of women in the CASs, particularly in leadership positions ensures greater gender equality and promotes women's empowerment.
- Desalination of brackish water in the communities is a relatively expensive investment but also a very effective, appropriate and sustainable solution to a long-term problem. Solar powered desalination reduces operational costs and, thereby, increases the economic sustainability of the WSS.

8.1 Successes

- The main success of the project is its impact on improving access to safe drinking water for 6,393 people in an area with brackish water sources and/or designated resettlement areas for climate migrants. This has been achieved through the construction of water supply infrastructure which was been accompanied by a comprehensive programme of community education which included rational water use and management, sanitation, hygiene and climate resilience.

- By removing the majority of the salt from the water in the boreholes, the desalinators have a positive impact on long-term community health. Water quality is now well within the World Health Organisation recommended limits for drinking water.[12]

- The project has significantly reduced the time that women and girls spend collecting and transporting water to their homes, giving them more time to rest, study, or carry out their numerous daily tasks.

- The project has been successful in increasing gender equality and empowering women and girls. Women hold leadership posts in all 58 CAS, where they have significant decision-making power. 1,628 out of a total 2,417 persons that received training through the PEC are women or teenage girls - 67% -. The results are measured by the large number of latrines, bathrooms, rubbish pits, hand-washing facilities and drying tables constructed through the PEC, in which women and girls were fully involved.

8.2 Failures

- No significant failures have been registered during the implementation of this project. However, it was expected that 33% of water users would pay using digital money transfer systems. But this did not so far happen because of a lack of enabling conditions in the target villages where there are no agents of the money transfer systems operators.

- There was an 8-month overrun in project execution, mostly because of the impact of COVID-19 on supply chains for water infrastructure equipment imported from France that caused major delays in arrival of the materials in Mozambique. It should be noted that an overrun of 6 months was included in the implementation plan in the Project Proposal, anticipating possible delays with works, tenders etc. Despite the delays that occurred as a result of the unforeseen circumstances, the flexibility of the donor, Flanders government, in granting a no cost extension mitigated major impacts to the intervention. Thus, the intervention successfully managed to realise the main activities as outlined in the project document, while adapting to a challenging context.

- The Chiaquelane water supply system intervention was unable to reach the initially estimated 8,000 beneficiaries due to budget restrictions and project design as explained above in section 3.2. Nonetheless, the project executive design was reviewed to allow the project to be built in 3 phases, thereby allowing expansion of the system (by Enabel or other agencies) when funds become available. This was an effective mitigation approach to allow part of the population to benefit from clean access to water.

8.3 Summary of lessons learned

Lessons learned	Target group
The three-point intervention, i.e. water supply infrastructure, PEC and private management is an appropriate model for replication and scaling-up in Mozambique.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.

[12] Below 200mg of sodium per litre of water

Private sector management for WSS that include desalination is considered the best and most sustainable mechanism.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.
Embedding the PEC programme within local government and local leadership structures ensures community adherence to the programme and the relevant follow-up actions by the communities.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.
The high level of involvement of women in the CASs, particularly in leadership positions ensures greater gender equality and leads to women's empowerment.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.
Solar powered desalination of brackish water in rural areas is a relatively expensive but also very effective, appropriate and sustainable solution to a long-term problem.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.
Flexibility to adapt to changing contexts (e.g. budget restrictions, covid-19, climate change impacts such as heavy rains) is extremely important to execute the outputs of the intervention. In this point, operational flexibility as well as management flexibility (from the donor) is crucial. Good working collaboration is a medium to achieve this, with the private companies, with the government authorities and with the donor.	Country Portfolio, Representation, Enabel departments in Brussels, partner country.

9 Recommendations

The following recommendations are designed to assist Enabel, its government partners and Belgian Development Cooperation in the design of future rural water supply projects and programmes in Mozambique.

- The programme should have a high degree of government ownership at all levels from the onset and the government should be closely consulted during the programme design process. Enabel's role should be as project implementer of a government owned and led programme.
- Ensure that the provision for operation and management of the water supply systems is an integral part of project design. One way to do this is to include system management in the WSS construction tenders obliging the contractor to install the system and then manage it for an agreed period of time.
- Design the project to include the three integrated elements of: physical installation of the water supply system, community education programme and private sector management.
- The recommended energy source for powering rural water supply systems is solar energy. It provides a clean, renewable energy source, the systems are cheaper to run (than diesel or electric powered systems) and therefore more profitable for the operator. They are thus more likely to be sustainable in the longer term.
- At the inception phase of the project, a critical analysis of the log frame should be conducted to assess whether the indicators are SMART, revise if necessary. The design of

the baseline study should be based around the log frame indicators. Baseline data collection should be restricted to the information needed to set a baseline for the indicators. Do not waste resources collecting large amounts of information that will never be used.

- During the inception phase, critically analyse the technical design of the water supply systems and the map of quantities of materials to ensure that these are consistent, i.e., that nothing has been omitted in the technical design and that the quantity of materials is sufficient to execute the plan; revise as necessary before implementation begins.
- The PEC intervention should not only be limited up to the end of the construction of the works, but should include a minimum of 6 months after the construction is concluded to effectively sensibilize and monitor the community's behaviour with regards to rational use of water, payment of water services and maintenance of infrastructure. The adherence to individual taps and payment rates are higher when the PEC remains on site after the construction is concluded than when it ends with the construction of the infrastructure[13]

[13] Comparison between desalination water supply system of DzinDzine (Guijá District), where PEC finished together with the works AND the desalination water supply system of Titite (Chokwé District), where PEC intervention remained for 6 months after the end of the works.

10 Annexes

10.1 Quality criteria

1. RELEVANCE: extent to which the intervention is in line with local and national policies and priorities as well as with the expectations of the beneficiaries.				
Calculate the total score for this quality criterion as follows: at least one 'A', no 'C' or 'D' = A; two 'B's = B; at least one 'C', no 'D' = C; at least one 'D' = D				
Assessment of RELEVANCE: total score	**A**	**B**	**C**	**D**
	X			

1.1 What is the current degree of relevance of the intervention?			
X	**A**	Clearly still embedded in national policies and Belgian strategy, responds to aid effectiveness commitments, highly relevant to needs of target group.
	B	Still fits well in national policies and Belgian strategy (without always being explicit), reasonably compatible with aid effectiveness commitments, relevant to target group's needs.
	C	Some issues regarding consistency with national policies and Belgian strategy, aid effectiveness or relevance.
	D	Contradictions with national policies and Belgian strategy, aid efficiency commitments; relevance to needs is questionable. Major adaptations needed.
1.2 As presently designed, is the intervention logic still holding true?		
	A	Clear and well-structured intervention logic; feasible and consistent vertical logic of objectives; adequate indicators; Risks and Assumptions clearly identified and managed; exit strategy in place (if applicable).
X	**B**	Adequate intervention logic although it might need some improvements regarding hierarchy of objectives, indicators, Risk and Assumptions.
	C	Problems with intervention logic may affect performance of intervention and capacity to monitor and evaluate progress; improvements necessary.
	D	Intervention logic is faulty and requires major revision for the intervention to have a chance of success.

2. EFFICIENCY OF IMPLEMENTATION TO DATE: extent to which the resources of the intervention (funds, expertise, time, etc.) have been economically converted in results.				
Calculate the total score for this quality criterion as follows: at least two 'A's, no 'C' or 'D' = A; two 'B's = B, no 'C' or 'D' = B; at least one 'C', no 'D' = C; at least one 'D' = D				
	A	**B**	**C**	**D**

Assessment of EFFICIENCY: total score			**X**		
2.1 How well are inputs (financial, HR, goods & equipment) managed?					
	A	All inputs are available on time and within budget.			
X	**B**	Most inputs are available in reasonable time and do not require substantial budget adjustments. However, there is room for improvement.			
	C	Availability and usage of inputs face problems, which need to be addressed; otherwise, results may be at risk.			
	D	Availability and management of inputs have serious deficiencies, which threaten the achievement of results. Substantial change is needed.			
2.2 How well is the implementation of activities managed?					
	A	Activities implemented on schedule.			
X	**B**	Most activities are on schedule. Delays exist, but do not harm the delivery of outputs.			
	C	Activities are delayed. Corrections are necessary to deliver without too much delay.			
	D	Serious delay. Outputs will not be delivered unless major changes in planning.			
2.3 How well are outputs achieved?					
	A	All outputs have been and most likely will be delivered as scheduled with good quality contributing to outcomes as planned.			
X	**B**	Output delivery is and will most likely be according to plan, but there is room for improvement in terms of quality, coverage and timing.			
	C	Some outputs are/will be not delivered on time or with good quality. Adjustments are necessary.			
	D	Quality and delivery of outputs has and most likely will have serious deficiencies. Major adjustments are needed to ensure that at least the key outputs are delivered on time.			

3. EFFECTIVENESS TO DATE: extent to which the outcome (specific objective) is achieved as planned at the end of year N				
Calculate the total score for this quality criterion as follows: at least one 'A', no 'C' or 'D' = A; two 'B's = B; at least one 'C', no 'D' = C; at least one 'D' = D				
	A	**B**	**C**	**D**

Assessment of EFFECTIVENESS: total score			**X**		
3.1 As presently implemented what is the likelihood of the outcome to be achieved?					
	A	Full achievement of the outcome is likely in terms of quality and coverage. Negative effects (if any) have been mitigated.			
X	**B**	Outcome will be achieved with minor limitations; negative effects (if any) have not caused much harm.			
	C	Outcome will be achieved only partially among others because of negative effects to which management was not able to fully adapt. Corrective measures have to be taken to improve ability to achieve outcome.			
	D	The intervention will not achieve its outcome unless major, fundamental measures are taken.			
3.2 Are activities and outputs adapted (when needed), in order to achieve the outcome?					
	A	The intervention is successful in adapting its strategies / activities and outputs to changing external conditions in order to achieve the outcome. Risks and assumptions are managed in a proactive manner.			
X	**B**	The intervention is relatively successful in adapting its strategies to changing external conditions in order to achieve its outcome. Risks management is rather passive.			
	C	The intervention has not entirely succeeded in adapting its strategies to changing external conditions in a timely or adequate manner. Risk management has been rather static. An important change in strategies is necessary in order to ensure the intervention can achieve its outcome.			
	D	The intervention has failed to respond to changing external conditions, risks were insufficiently managed. Major changes are needed to attain the outcome.			

4. POTENTIAL SUSTAINABILITY: The degree of likelihood to maintain and reproduce the benefits of an intervention in the long run (beyond the implementation period of the intervention).					
Calculate the total score for this quality criterion as follows: at least three 'A's, no 'C' or 'D' = A; maximum 2 'C's, no 'D' = B; at least three 'C's, no 'D' = C; at least one 'D' = D					
Assessment of POTENTIAL SUSTAINABILITY: total score		**A**	**B**	**C**	**D**
			X		
4.1 Financial/economic viability?					
	A	Financial/economic sustainability is potentially very good: Costs for services and maintenance are covered or affordable; external factors will not change that.			
	B	Financial/economic sustainability is likely to be good, but problems might arise namely from changing external economic factors.			
X	**C**	Problems need to be addressed regarding financial sustainability either in terms of institutional or target groups costs or changing economic context.			

	D	Financial/economic sustainability is very questionable unless major changes are made.
4.2 What is the extent of ownership of the intervention by the target groups and will it last after the external assistance ends?		
	A	The Steering Committee and other relevant local entities are strongly involved in all stages of implementation and are committed to continue producing and using results.
X	**B**	Implementation is based in a good part on the Steering Committee and other relevant local entities, which are also somewhat involved in decision-making. Likeliness of sustainability is good, but there is room for improvement.
	C	The intervention uses mainly ad-hoc arrangements and the Steering Committee and other relevant local entities to ensure sustainability. Continued results are not guaranteed. Corrective measures are needed.
	D	The intervention depends completely on ad-hoc entities with no prospect of sustainability. Fundamental changes are needed to enable sustainability.
4.3 What is the level of policy support provided and the degree of interaction between intervention and the policy level?		
	A	Policy and institutions have been highly supportive of intervention and will continue to be so.
X	**B**	Policy and policy enforcing institutions have been generally supportive, or at least have not hindered the intervention, and are likely to continue to be so.
	C	Intervention sustainability is limited due to lack of policy support. Corrective measures are needed.
	D	Policies have been and likely will be in contradiction with the intervention. Fundamental changes needed to make intervention sustainable.
4.4 How well is the intervention contributing to institutional and management capacity?		
	A	Intervention is embedded in institutional entities and has contributed to improve the institutional and management capacity (even if this is not an explicit goal).
X	**B**	Intervention management is well embedded in institutional entities and has somewhat contributed to capacity building. Additional expertise might be required. Improvements in order to guarantee sustainability are possible.
	C	Intervention relies too much on ad-hoc entities instead of institutions; capacity building has not been sufficient to fully ensure sustainability. Corrective measures are needed.
	D	Intervention is relying on ad hoc entities and capacity transfer to existing institutions, which could guarantee sustainability, is unlikely unless fundamental changes are undertaken.

10.2 Updated Logical framework and/or Theory of Change

There were no profound changes to the Logical Framework. Please see complete monitoring matrix in section 10.3

10.3 Complete monitoring matrix

Outcome level

Results /Indicators	Base-line value	Final target value	Target values year 2019	Target values year2020	Target values year 2021	Unit of measure-ment	Source of verification	Frequency of data collection	Start - end measure-ment	Responsi-ble data collection	Other (2)
OUTCOME: Improve sustainable access to safe and affordable drinking water through a systemic approach encompassing renewable energy, healthy living, empowerment of communities and local economic stakeholders.											
% of the total population of the intervention area benefits from safe and affordable drinking water (SDG)	0	100	N/A	N/A	100	%	SDPI, INE, PEC	1/project	End project	PMT	
Number of climate migrants in the intervention area benefits from safe and affordable drinking water	N/A	100	N/A	N/A		%	SDPI, PEC	1/project	End project	PMT	
% of public institutions with access to safe and affordable drinking water	6	100	N/A	N/A	100		SDPI, PEC	1/project	End project	PMT	
Quantity of safe and affordable drinking water used per person / day (DNAAS)	0	20	N/A	N/A	20	Liter/day /person	SDPI, PEC	1/project	End project	PMT	
% of community members without waterborne diseases	N/A	100	N/A	33	100		PEC, SDPI	1/project	Start and end project	PMT	
% of households dropping out of water system connection	N/A	0	N/A	N/A	0	%	PEC, PMT	Annual		PMT	
Amount of time spent on fetching water at the closest water point	>=60	<60	N/A	N/A	<60	Minutes	PEC	1x/project	End project	PMT	
% of Water Committees who implement climate resilient management rules & regulations for water efficiency, protection & sanitation	N/A	100	N/A	25	100	%	PEC report, CAS mee-ting report	Annual		PMT	

(2) vvvvvv

Output level

Results /Indicators	Baseline value	Final target value	Target values year 2019	Target values year 2020	Target values year 2021	Unit of measure-ment	Source of verification	Frequency of data collection	Start - end measure-ment	Responsible data collection	Other (2)
OUTPUT 1: Renewable energy powered water network is installed and provides secure access to safe drinking water.											
Level of services provided (safe and affordable drinking water)						%	SDPI, PEC, PMT	Annual		PMT	
Highly Improved services	0	100	N/A	50	100						
Improved services	300	0	N/A	0	0						
Basic services	2700	0	N/A	0	0						
Limited/No service	5561	0	N/A	50	0						
% of installed drinking water facilities powered by renewable energy contributing to affordable and reliable water services (SDG)	N/A	100	N/A	60	100	%	PMT	Annual		PMT	
% of built photovoltaic system for desalination plants are free battery use to ensure the universal access to affordable, reliable and modern energy services (SDG)	N/A	100	N/A	100	100		PMT	Annual		PMT	

(2) Other relevant elements (e.g. costs related to data collection)

Results /Indicators	Baseline value	Final target value	Target values year 2019	Target values year 2020	Target values year 2021	Unit of measure-ment	Source of verification	Frequency of data collection	Start - end measure-ment	Responsible data collection	Other
OUTPUT 2: PEC Community Education Programs empower communities in water efficiency, sanitation and management and climate awareness, adaptation and mitigation skills.											
% of water and sanitation committees linked to the project infrastructures trained and operational	N/A	100	N/A	50	100	%	PEC report, CAS meeting report	Annual		PMT	
% of women present in the Water and Sanitation Committees (CAS) leadership (gender equity)	N/A	30	N/A	20	30	%	PEC report, CAS member list	Annual		PMT	

% of beneficiaries who complete the PEC curriculum with a focus on climate change	N/A	100	N/A	30	100	%	PEC report	Annual		PMT	
Number of discussions/seminaries /workshops with community members on sanitation, water efficiency and climate awareness	N/A	6	N/A	3	3	Number of discus-sions/etc	PEC report, PMT field visit, CAS meeting report	Annual		PMT	
% of households abstaining from the practice of open defecation	N/A	100	N/A	50	100	%	PEC survey	Annual		PMT	We will know the baseline value at the beginning of the PEC work-shop (survey)
Number of initiatives undertaken by community related to climate mitigation and adaptation	N/A	3	N/A	3	0	Number of initiatives	PEC report, PMT terrain visit, CAS meeting report	Annual		PMT	

(3) Other relevant elements (e.g. costs related to data collection)

Results / Indicators	Baseline value	Final target value	Target values year 2019	Target values year 2020	Target values year 2021	Unit of measu-rement	Source of verification	Frequency of data collection	Start end measure -ments	Responsi-ble data collection	Other (4)
OUTPUT 3: Sustainability of the water network system is secured through the involvement of private and local stakeholders in the operations, management and maintenance.											
% of water systems which are managed and maintained by private actors	N/A	100	N/A	33	100	%	PMT	Annual		PMT	
Number of the local authorities (CAS) in the private management staff to promote ownership of the communities	N/A	3	N/A	1	3	Number of CAS members	HR enterprise, contracts	Annual		PMT	
% of the drinking water infrastructures using digital operational and maintenance system (use of enabling technology - SDG)	N/A	100	N/A	33	100	%	Enterprise document	Annual		PMT	

% of the water committees (CAS) using a secure and transparent digital payment system	N/A	33	N/A	0	33	%	CAS doc	Annual		PMT	
Number of studies/seminaries/workshops on management modalities of the water network system	N/A	2	1	1	0	Number of studies	PMT, minutes/study	Annual		PMT	

(4) Other relevant elements (e.g. costs related to data collection)

10.4 Resources in terms of communication

1. Photo reportage 2019 by Isabel Corthier – https://enabelbe-my.sharepoint.com/:f:/g/personal/akila_munir_enabel_be/EpsZkoppX-1FuRHw2d0poi0BSlci5kzqu87sSwVrw7_exQ?e=KA877w

2. Photo reportage 2021 by Isabel Corthier – https://enabelbe-my.sharepoint.com/:f:/g/personal/akila_munir_enabel_be/Eu-Nz9Mgie5GgdUTDH1lZGMBmPCE_FBs-_SgtfaAaqkx5g?e=Bcose6

10.5 Personnel of the intervention

Personnel (title and name)	Sex (M/F)	Term of employment (start and end date)
National staff made available by the partner country: Hermenegildo Tchumene (Head of Water and Sanitation, Provincial Directorate of Public Works, Gaza) Dionisio Pita (Technician, Provincial Directorate of Public Works, Gaza) Mario Maposse (Director of District Services of Planning and Infrastructure, Chokwé, Gaza)	 M M M	Government staff (N/A)
Support staff, recruited locally by Enabel: Daniel Pedro (National Technical Assistant) Akila Munir (Procurement Officer/ National Strategy Advisor)	 M F	 January 2020 – April 2021 July 2018 – Present
International staff (non-Enabel): *Not applicable*		
International experts (Enabel): *Not applicable*		

10.6 Public procurement

External Reference Number	Title of the tender	Status	Tender launch date	Submission tenders date	Award date	Start execution date	End execution date	End contract date	Awarded amount	Amended amount	Total amount	Contractor	Comment
MOZ19001_10001	MOZ189 PEC services in drinking water supply, sanitation, hygiene, health & climate change in Gaza	Completed	12/17/2019	1/30/2020	3/11/2020	7/11/2020	1/31/2022	2/11/2022	MZN 2,679,690.00	MZN 1,122,252.50	MZN 3,801,942.50	GEOMATI, LDA	
MOZ19001_10002	MOZ190 Construction, installation & management of 2 desalination water systems in Gaza Province Lot 1	Provisional Acceptance	2/12/2020	3/12/2020	6/5/2020	7/9/2020	2/4/2021	4/20/2022	€ 243,326.90	€ -	€ 243,326.90	VERGNET HYDRO	Release of guarantee upon final acceptance
MOZ19001_10003	MOZ190 Construction, installation & management of 2 desalination water systems in Gaza Province Lot 2	Provisional Acceptance	2/12/2020	3/12/2020	6/5/2020	7/9/2020	2/4/2021	4/20/2021	€ 229,086.69	€ 32,261.54	€ 261,348.23	VERGNET HYDRO	Release of guarantee upon final acceptance
MOZ19001_10004	MOZ192 Supervision of works of 2 desalination WSS in the villages of Titite & Tlawene	Provisional Acceptance	5/26/2020	6/17/2020	7/2/2020	7/9/2020	5/9/2021	4/29/2022	MZN 1,719,052.80	MZN 132,058.53	MZN 1,851,111.33	INGEROP - ENGENHEIROS CONSULTORES	Final payment due upon final acceptance
MOZ19001_10005	Construction of (1) conventional water supply system in the village of Chiaquelane, Chokwe District	Provisional Acceptance	2/1/2021	2/24/2021	4/9/2021	5/3/2021	2/28/2022	2/28/2023	€ 264,355.45	€ 24,182.29	€ 288,537.74	AFRIDEV MATI MOZAMBIQUE, LDA	Release of guarantee upon final acceptance
MOZ19001_10006	Supervision for works of 1 conventional WSS in Chiaquelane village, Chokwe, Gaza Province	Provisional Acceptance	1/18/2021	2/8/2021	4/9/2021	5/3/2021	2/4/2022	2/4/2023	MZN 1,314,078.86	MZN 873,628.68	MZN 2,187,707.54	BVI ENGENHEIROS CONSULTORES MOCAMBIQUE, LDA	Final payment due upon final acceptance

MOZ19001-10008	Short term consultancy to support the revision of the MOZ19001 project baseline and indicators	Completed	3/26/2021	4/1/2021	4/9/2021	4/9/2021	7/4/2021	7/4/2021	$ 8,450.00	0.00	$ 8,450.00	ANDREW MATTICK	Short term consultancy paid by man days
MOZ19001-10009	Short-term consultancy for supporting project coordination activities for CLISMADEV	Completed	6/7/2021	6/9/2021	6/18/2021	6/28/2021	2/28/2022	2/28/2022	MZN 140,000	MZN 144,668	MZN 284,668	JAIME JORGE MACAMO	Short term consultancy paid by a monthly lump sum and a daily rate for the month of Feb 2022
MOZ19001-10010	Short term consultancy to support the management and technical coordination of the project CLISMADEV	Completed	7/6/2021	7/8/2021	7/8/2021	7/15/2021	2/28/2022	2/28/2022	$13,000	$1,300	$14,300.00	ANDREW MATTICK	Short term consultancy paid by man days

10.7 Letter of Agreement

External Reference Number	Title of the Agreement	Status	Award date	End date	Amount	Recipient	Comment
MOZ19001_10011	Capacity building of technicians of Provincial Directorates of Public Works (Maputo and Inhambane) in SINAS	Completed	08/18/2021	N/A (completed by October 2021)	MZN 116,731.84	Provincial Directorate of Public Works of Gaza	New contracting method piloted

Budget Report MOZ19001: Climate-Smart Development in Mozambique: Using Renewable Energy for Sustainable Access to Safe and Affordable Drinking Water in Gaza Province (CLISMADEV)

Date SA: 01/05/2019
End date SA: 05/03/2022

		Modality	Budget	Total expenses	Balance	Execution rate
A - Improve sustainable access to safe and affordable drinking water through a systemic approach encompassing renewable energy, healthy living, empowerment of communities and local economic stakeholders						
A_01 - Renewable energy powered water network is installed and provides secure access to safe drinking water.						
A_01_01	Setting up Systems of safe drinking water	REGIE	674.078	728.760,32	-54.682,46	108%
A_01_02 *	Supervision of works and technical studies *	REGIE	83.770	66.227,87	17.541,72	79%
Total A_01			**757.847**	**794.988,19**	**-37.140,74**	**105%**
A_02 - PEC Community Education Programs empower communities in water efficiency, sanitation and management and climate awareness, adaptatic						
A_02_01	Implementation of Community Education Program	REGIE	59.150	50.944,63	8.205,70	86%
Total A_02			**59.150**	**50.944,63**	**8.205,70**	**86%**
A_03 - Sustainability of the water network system is secured through the involvement of private and local stakeholders in the operations, management and maintenance.						
A_03_01	Studies	REGIE	22.000	0,00	22.000,00	0%
A_03_02	Data base	REGIE	5.000	1.571,92	3.428,08	31%
A_03_03	Communication	REGIE	4.000	1.688,19	2.311,81	42%
Total A_03			**31.000**	**3.260,11**	**27.739,89**	**11%**
Total A			**847.998**	**849.192,93**	**-1.195,15**	**100%**
Z - General Means						
Z_01 - Staff costs						
Z_01_01	Support and Technical Assistance	REGIE	18.750	484,15	18.265,85	3%
Total Z_01			**18.750**	**484,15**	**18.265,85**	**3%**
Z_02 - Investments						
Z_02_03	IT equipment	REGIE	500	0,00	500,00	0%
Total Z_02			**500**	**0,00**	**500,00**	**0%**
Z_03 - Functioning costs						
Z_03_02	Vehicle running costs	REGIE	6.300	4.008,99	2.291,01	64%
Z_03_03	Office supply, telecommunications, etc	REGIE	4.095	167,19	3.927,81	4%
Z_03_04	Missions	REGIE	8.100	6.862,58	1.237,42	85%
Z_03_05	Other functioning costs	REGIE	848	2.616,47	-1.768,34	308%
Total Z_03			**19.343**	**13.655,23**	**5.687,90**	**71%**
Z_04 - Audit and Monitoring and Evaluation						
Z_04_01	Monitoring and evaluation costs	REGIE	13.500	0,00	13.500,00	0%
Z_04_02	Audit	REGIE	9.000	0,00	9.000,00	0%

Total Z_04	**22.500**	**0,00**	**22.500,00**	**0%**
Total Z	**61.093**	**14.139,38**	**46.953,75**	**23%**
Subtotal MOZ19001	**909.091**	**863.332,31**	**45.758,60**	**95%**
Total Own Management	909.091	863.332,31	45.758,60	95%
Total Co-Management	0	0,00	0,00	
Overhead Enabel - 10%	**90.909**	**86.333,23**	**4.575,86**	**95%**
Total MOZ19001	**1.000.000**	**949.665,54**	**50.334,46**	**95%**

A_01_02 *: 2 guarantees remain open untill the final acceptance:

Transaction N°	Supplier	Amount
22021000460	GEOMATI, LDA	886,51
22022000231	BVI ENGENHEIROS CONSULTORES MOCAMBIQUE, LDA	1.841,15
Total amount		**2.727,66**

In case of non or partial disbursment of these open amounts, Enabel certifies to contact the Flemish Governemnt in order to define the destination and settlement modalities of the remaining amount of these guarantees.

Invoice N° - Bank Statement n°	
19019000142 - 14319000017	200.000,00
19020000120 - 14320000043	600.000,00
Total advances received	800.000,00
Balance advances received	-149.665,54
Final installment	**149.665,54**

Validation Département Comptabilité:

Op datum van / En date du

Naam/Nom
Handtekening/Signature

François Hospied (Signature)

Digitally signed by François Hospied (Signature)
Date: 2022.10.21 16:19:35 +02'00'

Validation Département Controlling:

Op datum van / En date du

Naam/Nom
Handtekening/Signature

Digitally signed by Johan Pans (Signature)
Date: 2022.10.21 12:54:38 +02'00'