

Climate Smart and Future Proof?

Overview of findings per programme

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1 Inclusive and sustainable agricultural development in the Zambezi Valley (ISA)

Programme goal

The ISA 1 (2012-2016) and ISA 2 (2017-2021) programmes aimed to improve agriculture, value chains and Business Development Services (BDS) in the Zambezi Valley to ensure inclusive and sustainable growth, and improved food security. The underlying interventions focused on sustainably increasing smallholder farmer incomes; wage employment in commercial farms, fishery and agribusiness; and private investment in priority value chains. The programme supported these aims by strengthening the institutional capacity of ZVDA, BDS and smallholder farmers on agricultural technical skills, marketing, and access to finance and technology institutions.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Mixed

The impact of climate change is mentioned several times in the programme proposal. It is acknowledged that Mozambique is very vulnerable to climate change due to poverty, weak institutional development and frequent extreme weather events such as droughts, floods, bush fires, heat waves and cyclones. The general population is insufficiently prepared to cope with the impacts of these hazards. Climate is considered a 'threat multiplier', especially in drought and flood-prone zones (Tete province and Zambezi Delta), aggravating degradation processes and increasing the vulnerability of subsistence farmers. The project proposal mentions extensive use of a special spatial plan, including a Strategic Environmental Assessment (SEA) that also addresses climate change. However, there are no systematic CCA analyses using climate models and vulnerability and exposure assessments, and no concrete analysis of how this impacts programme goals.

Step 2 - Integration into programme design

Score: Low

Strategy types: Technological (climate-smart agricultural techniques), knowledge (training)

The programme mentions training in the use of climate-smart agricultural techniques and increased resilience in the form of access to irrigation. However, in the absence of a thorough analysis of the impacts of climate change, the contribution of the activities to CCA remains largely implicit. The evaluation notes that the assumptions on climate change were not linked to the rationale of the programme, and were therefore outside the control of the programme. According to the evaluators, it would have been advisable to formulate explicit pathways of change concerning climate change adaptation.

Step 3 - Implementation

Score: Mixed

The strategies mentioned in step 2 were partially implemented. Implementation was hampered by Covid-19 and the cyclones that hit the region, which shows they were not well prepared for such an event. Again, the link with climate change adaptation remains implicit. Regarding the use of climate-smart agricultural techniques, the evaluation concludes that this was difficult to evaluate as there was no definition of the concept. Only mulching was identified as a climate-smart technique. IOB interviews and site visit observations confirmed this implicit approach, with a lack of the use of climate projections and translation into concrete strategies. At the same time, the site visit did find several climate-smart techniques, such as the use of shade nets, the application and multiplication of drought-resistant seeds, humidity meters, water flow sensors, and collective crop planning based on short-term water availability forecasts. While the programme proposal links irrigation mainly to commercialisation and hardly to climate change, this link was made by most respondents in the region of Angonia. It was mentioned that irrigation had become necessary due to changing rainfall patterns. In the case of livestock, it was mentioned that the wrong type of buildings were being used, as they accumulate heat resulting in loss of livestock. Here they resort to fan cooling, which is not a structural solution.

CCA scale score

Score: CCA sensitive.

Climate change is certainly on the radar of this programme. However, more detailed climate analyses, vulnerability and exposure assessments are lacking. Similarly, adaptation strategies are mentioned but not linked to concrete analyses. The limited preparedness for cyclones could be labelled as CCA blind. During the site visit, various climate-smart strategies were identified, indicating CCA responsiveness. However, they were reactive, not proactive, in response to current or past weather events.

Inclusion of marginalised groups

Score: Mixed

The evaluation notes that many of the selected beneficiaries were relatively poorer, more remote and dispersed farmers who had not previously been served by other interventions. At the same time, the level and extent of participation and accountability was rather low. Beneficiaries were not consulted in the selection and design of the interventions, they were generally unaware of their rights, duties and obligations, and female participation was low.

The project proposal and appraisal document mentioned that a gender analysis and strategy would be developed, but according to the evaluation, this did not happen. The programme did not include a gender analysis, did not use gender-disaggregated data and showed a narrow understanding of a gender-based approach. It consisted mainly of the participation of women in activities, but not of the inclusion of women throughout the programme's interventions, including in decision-making.

IOB site visits and interviews partially confirmed this picture. In many places, it was difficult to speak to women, as men were usually in the spotlight. Women reported smaller plots, which they often rented rather than owned, and no access to irrigation. Also, site visits tended to show more advanced farmers (medium/large), rather than the most deprived. These farmers were using some of the new farming techniques and inputs. The idea was that they would share this knowledge with subsistence farmers in their area during training days, which would help them grow. When asked, only a few cases of small farmers becoming medium farmers were mentioned. In general, climate-smart agriculture requires many inputs and knowledge, which are difficult to obtain for the poorest.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: High

ZVDA is a government body with the mandate to develop the lower Zambezi River Basin. Its locally owned development programme is aligned with policies and programmes of the government of Mozambique, including those on climate change adaptation. It uses national systems for programme design and implementation, financial management, and monitoring and evaluation. The ZVDA programme mainly contributes to the national priority of sustainable and transparent management of natural resources and the environment, with an emphasis on disaster risk reduction and strengthening resilience.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short-term – Mixed; Long-term – (probably) Low

In the short term, the fieldwork and evaluation show mixed results on effectiveness. As CCA has not been systematically integrated into the programme design, it is difficult to judge to what extent activities contribute to risk reduction in the long term. Several findings point to low effectiveness due to sustainability issues.

The evaluation finds little evidence of the effectiveness of CCA strategies. Activities that were explicitly designed to adapt to climate change were deemed ineffective, while other activities can still contribute to increased resilience and reduced exposure, albeit in a reactive manner. It concludes that the use of climate-smart agricultural techniques was difficult to evaluate as there was no definition of the concept. While beneficiaries generally acknowledged the impact of climate change and many have been affected by it (e.g. droughts, floods, cyclones), the evaluation found that most beneficiaries were unaware of climate-resilience practices and their importance. Nor did they report any improvement in these practices. Climate events are a substantial risk to sustainability, and the evaluation concludes that investments in horticultural inputs have already shown vulnerability due to climatic stress.

While irrigation is rarely framed as a CCA strategy, it was mentioned during the IOB site visits as an adaptation technique to overcome extended droughts in areas that previously relied on rainfed agriculture. The evaluation reports mixed findings on irrigation. On the one hand, it concludes that the irrigation systems promoted under ISA1 and ISA2 have mostly been successful in terms of increased yields and deserve to be scaled up. On the other hand, it finds that the costs of acquisition, maintenance and repair are too high for many producers. The inability of the programme to establish a strong relationship with the private agri-business sector, both in terms of financial and technological inputs, aggravates this problem. Most farmers have switched from drip and sprinkler irrigation to gravity irrigation because it is easier to use and maintain.

The IOB site visit confirmed that irrigation was mainly used by medium to large farmers, with limited access for smallholders (often women) who irrigated their plots by hand. This practice required them to be close to water sources, making them vulnerable to flooding. Most of the farmers interviewed had experienced shocks and were still recovering. More advanced farmers have more means to adapt and use more technologies and inputs to deal with climate change. The site visit, for instance, found indications of improvements in water and fuel efficiency due to the use of hydrometers. At the same time,

they lost bigger investments during floods and droughts, which reduced their capacity to adapt. A more advanced farmer, for instance, did not have the resources to move to higher ground due to damage from previous floods.

Underlying mechanisms, factors and conditions explaining effectiveness:

- The absence of a systematic CCA analysis, including the use of regional climate models, vulnerability and exposure assessments, explains a reactive approach with limited results.
- Climatic shocks raise awareness of the need for CCA, but also hamper the ability and resources to respond.
- Choosing high-tech equipment and solutions in areas with resource-poor farmers who lack access to markets for replacement and repair is not an efficient intervention choice, as quality and sustainability cannot be ensured. Beneficiaries also thought ZVDA was responsible for maintenance.
- Climate-smart agriculture requires many inputs and knowledge, which are difficult for the poorest to access.
- IOB interviews found there was a lack of trust between farmers to organise irrigation collectively.
- Lack of private sector involvement in the supply and marketing components of the value chain weakens the sustainability of results. However, IOB did find some positive examples on the marketing side of the supply chain, where farmers were able to get better prices by selling collectively.

2 Agricultural Smallholder Adaptation Programme (ASAP)

Programme goal

ASAP was developed to integrate climate change adaptation measures into the entire IFAD portfolio. It aims to catalyse major changes in the way rural development is practised in response to current and future climate change through risk-informed projects and policy design, and the scaling up of innovative adaptation solutions. It is assumed that where improvements in capacity lead to shifts in power, this will have transformative potential. The programme aims to increase the resilience of eight million smallholder farmers through five main pillars:

1. Improved land management and gender-sensitive, climate-resilient agricultural practices and technologies.
2. Increased availability of water and efficiency of water use for agricultural production and processing.
3. Increased human capacity to manage short- and long-term climate risks and reduce losses from weather-related disasters.
4. Climate-resilient rural infrastructure.
5. Knowledge on climate-smart smallholder agriculture documented and disseminated.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Mixed

ASAP promotes climate risk and vulnerability mappings across the IFAD portfolio to increase resilience to climate change in 'conventional' interventions. The evaluation concludes that this 'key innovation' facilitates the systematic use of climate risk information, as it assesses the resilience of livelihood systems and helps to understand smallholder ideas for risk management and adaptation. As a result of ASAP, 42 IFAD project designs have integrated better analyses of climate risks and vulnerabilities, taking into account climate-related threats such as droughts, floods, tropical storms, rising sea levels, heat waves and future climate trends in project design. However, the evaluation also notes that ASAP's climate-vulnerability mapping needs to be scaled down to localised projections for future climate trends and to community-level decision-making processes. The maps also need to be updated at regular intervals with the latest seasonal and climate projections and community data. Finally, the evaluation questions whether ASAP has sufficiently considered the number and severity of future shocks that farmers will face, both climate-related and human-induced.

Step 2 - Integration into programme design

Score: High

Strategy types: Nature-based, infrastructural, technological, knowledge, policy, economic and financial, and socio-cultural
Based on climate risk and vulnerability assessments, ASAP integrates multiple CCA strategies across the IFAD portfolio:

- Nature-based: Individuals and communities engage in NRM and climate risk management activities (afforestation, planting mangroves, improved varieties, crop rotation, crop diversification).
- Infrastructural: Rehabilitation of rural infrastructure to protect against climate events
- Technological: Addressing farmers' immediate priorities with no-regret interventions (irrigation, water harvesting, production and processing facilities) as an entry point for developing resilience-related capacities. This is done by carefully balancing livelihood priorities with the availability of natural resources and using current and future climate scenarios. It is assumed that interventions will continue where a source of income is included.
- Knowledge: Training, use of local knowledge to tailor adaptation interventions to the local context.
- Political: National and international policy dialogue to adapt agricultural policies to increase smallholder resilience.
- Economic and financial: Connect smallholders to markets, financial support, engage the private sector in CCA activities.

- Socio-cultural: To achieve local ownership, intervention strategies are developed through participatory planning.

Step 3 - Implementation

Score: Mixed

The evaluation shows a mixed implementation of climate risk analyses and CCA strategies. *Infrastructure, knowledge, political* and *economic and finance* strategies are well implemented. The implementation of *socio-cultural, technological* and *nature-based* strategies is mixed. For socio-cultural strategies, participation levels are good, especially after a shock, but vulnerability mapping is not sufficiently projected at the community level. Encouraging farmers to consider long-term implications is a challenge, especially when resource gaps prevent commitment to natural resource management (NRM). The implementation of new techniques made use of long-term strategies through scenario planning, but the focus was very much on maximising production and the short-term use of resources. There was less awareness of long-term climate impacts and ownership. Maintenance of equipment and mainstreaming of good practice was insufficient. Establishing climate information services was challenging due to high costs and difficulties in downscaling meteorological data to an appropriate level. In addition to good examples of *nature-based* strategies such as reforestation and mangrove restoration, there are examples of unsustainable practices in resource-constrained environments. This was mainly due to a focus on maximising production in the short term without considering the longer term.

CCA scale score

Score: Responsive

Overall, ASAP can be labelled as CCA responsive. As a result of ASAP support, 42 IFAD projects have integrated climate risk and vulnerability analyses and implemented a broad range of adaptation measures. While ASAP aims to be CCA transformative, it is not clear that ASAP has sufficiently considered future risks for its interventions to be truly sustainable. This is due to a focus on no-regret options for the current context, whereas adaptive capacity for the future has been a secondary focus. Nevertheless, the evaluation finds examples of transformative change, such as the use of holistic approaches in implementing adaptation techniques and a focus on the wider institutional context.

The evaluation also finds CCA sensitive and CCA maladaptive elements. Some country programmes have good adaptation plans but lack implementation. Particularly in resource-constrained environments, ASAP faces an increased risk of introducing maladaptation, as intensification of smallholder production and livestock initiatives have put pressure on natural resources.

Inclusion of marginalised groups

Score: High

Overall, the evaluation is positive about targeting smallholders and their households in most ASAP projects. The participatory approach appears to result in reaching the most vulnerable, and there is ample evidence that project field staff spend considerable time with smallholders to understand their needs. The participatory approach has also proved valuable in involving women. Based on gender and social analyses, important steps have been taken to include women and to consider the impact of climate change on their agricultural work.

At the same time, the evaluation has some concerns. The no-regret focus on quick, demonstrable interventions sometimes results in ASAP working with better-off farmers. Also, the location of services and eligibility requirements can exclude poorer people and entrench power imbalances at the community level. ASAP assumes a trickle-down from better-off farmers to the poorest but does not provide clear advice on how this works. ASAP aims for gender inclusion rather than changing the circumstances that make women more vulnerable to climate change. Gender mainstreaming is hampered by a lack of resources, inexperienced programme staff and a lack of power analysis to inform strategy design.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: High

Ownership and alignment are high as IFAD programmes are part of a national government's agricultural development plans and are implemented through local structures and organisations (appraisal document). ASAP is linked to national policy processes to act on climate change. According to the evaluation, this policy engagement tends to focus on technical rather than strategic issues. It has supported the development and implementation of climate-related policies, plans and regulations, as reported in more than half of the ASAP projects. The grant is an attractive mechanism for prioritising government action on adaptation, mainly because the country does not have to take a loan to support adaptation. At the global level, ASAP has supported IFAD's engagement in global frameworks, partnerships and climate change agreements under the UNFCCC.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Short term: High; Long term: Mixed

The overall conclusion of the MTR is that the programme has made good progress in achieving its targets, given the disbursements to date. There has been notable success in establishing 'hardware', such as water technologies and productive infrastructure, as well as implementing interventions that improve or conserve natural resources, with good examples of mangrove restoration, soil conservation, and water storage and efficiency measures. Nearly all operational projects have introduced multiple 'no-regret' changes that help with current climatic conditions and improve the environmental focus of IFAD loans. Interventions often combine an appropriate technology with a relevant technical capacity strengthening. Furthermore, in a number of countries, ASAP interventions have supported governance changes that provide an enabling architecture that bodes well for their sustainability.

As this is an MTR, it is too early to expect long-term outcomes or impacts in terms of resilience. While the MTR points to some positive and unclear developments, the main message is to focus more on long-term resilience to ensure sustainability.

Long term – (potentially) positive

- Nearly all IFAD loans associated with the ASAP offer some form of capacity strengthening in agricultural production, business and market processes, or organisational capacity. These skills are likely to be beneficial in building absorptive capacity and may eventually lead to a transformation in the economic conditions of the groups involved.
- In the area of climate-resilient land management, many outputs can be seen as important risk mitigation and 'stepping stones' to improving people's broader resilience capacities. In the area of access to water, there is already evidence of a number of such secondary outcomes.
- Engaging individuals and groups in NRM and climate risk management activities potentially contributes to anticipatory capacity for reducing losses from climate-related hazards. Where improvements in capacity lead to shifts in power this has transformative potential.
- There is some evidence that climate-resilient infrastructure contributes to absorptive and adaptive capacity. It helped to withstand the impact of floods and broadened the range of strategies available to cope with climate change.
- Livelihood strategies such as food production measures, cash and subsidy transfers, and infrastructure rehabilitation increased incomes, which is likely to have increased absorptive capacity and resilience. Evidence is provided by smallholders who have withstood the impact of weather events during implementation.

Long term – unclear

- Weather events and outcomes in terms of increased yields, increased incomes and other higher-level well-being outcomes are not measured consistently across the portfolio. This makes it difficult to assess and learn whether, how and where resilience capacities have been built, and there is a risk of under-reporting.
- It is difficult to assess how sustainable the ASAP-introduced 'hardware' will prove to be due to limited attention given to formal and climate-appropriate exit strategies.
- Attributing results solely to ASAP funding is often not possible because in many countries the project's activities are integrated with the IFAD loan, and the substantive reporting does not always distinguish between them.

Long term – (potentially) negative

- A key consideration is the balance between: (i) the programme's desire to address the community's immediate needs; and (ii) the need to build community awareness of climate change impacts as a long-term challenge. Addressing immediate needs is important: farmers must be interested in what a project has to offer in order to participate and be able to pilot adaptations with low risk and minimal outlay. However, ASAP needs to focus more on how projects strengthen adaptive capacity and resilience in the long term.
- While ASAP has made good progress, in no country have ASAP interventions reached the full scale at which they are needed, hence the challenges smallholders face in dealing with climate change remain.
- Many projects place greater focus on hardware, and not enough has been done to build smallholders' adaptive capacity. Technological fixes to current problems are one-off adaptations, whereas adaptive capacity refers to the continuous ability of farmers to make informed decisions in their contexts, and to implement, reassess and modify their actions as required. The lack of capacity to adapt is a general concern for sustainability. Some ASAP infrastructure is already weakened by weather events that are projected to worsen in the coming years.
- Limited downscaling and updating of ASAP climate-vulnerability mapping contributes significantly to this concern.
- ASAP may be underestimating the number and severity of shocks, and greater attention could be paid to a broader range of natural risks (drought and floods; extreme temperatures; changing disease vectors) as well as human-induced risks such as price volatility, remittance reductions and localised conflict, especially in relation to natural resources.

Underlying mechanisms, factors and conditions explaining effectiveness

Positive mechanisms

- ASAP projects are more likely to be relevant if participants realise benefits, especially income gains, at a relatively early stage. Addressing farmers' immediate priorities is a good entry point for developing further CCA capacity. Also, projects that combine existing and new knowledge are likely to establish their relevance and application earlier.
- Ownership by local groups is present in many ASAP projects and can be expected to improve sustainability.
- Vulnerability mapping and scenario planning, especially when designed around experienced shocks, have high levels of smallholder participation. This participatory approach can be attributed to increased levels of buy-in for ASAP's technologies. Also, the adoption of new practices appears to be catalysed by the solutions they offer to experienced shocks or stresses. Both mechanisms make it likely that ASAP has directly increased capacities associated with resilience.
- Grants are an attractive mechanism for prioritising government action on adaptation, mainly because the country does not have to take a loan to support adaptation.
- The flexibility of ASAP allows IFAD to support national priorities. In turn, political momentum for climate adaptation offers entry points for ASAP.
- Land rehabilitation, improved cropland management practices and the establishment of agroforestry systems can be considered important risk mitigations and 'stepping stones' towards improving people's broader resilience capacities.
- Credibility has been enhanced through information sharing and collaboration across institutional levels, while responding to contextual needs has contributed to community buy-in.
- ASAP's climate-vulnerability mapping is a key activity in reducing the risk of maladaptation, and capacity strengthening is considered the least risky intervention.
- ASAP's national policy successes increase the likelihood that interventions will reach the necessary scale in the future, especially in smaller countries.
- Social inclusion is an important element of scale-up, although rarely acknowledged as a strategy.
- The success of interventions is partly due to the way in which a number of activities work together in combination.

Negative mechanisms

- The technical challenge of efficiently establishing climate information services relevant to farmers' needs is a major barrier to smallholder adaptive capacity, and is partly beyond ASAP's control. The limited use of repeat scenario planning is within ASAP's control, and not enough has been done to convert the good examples into core programme activities of IFAD.
- The need to ensure demonstrable success has had various negative effects: it has overridden local ownership, pressured natural resources through rapid scale-up and promoted quicker 'hardware' solutions rather than less tangible components, such as awareness, ownership and capacity.

3 Water Productivity

Programme goal

By setting up a water productivity database, the project helps countries to improve their capacity to monitor land and water productivity, identify land and water productivity gaps, and propose solutions to reduce these gaps. The database should contribute to more sustainable, productive and climate-resilient agricultural practices, while taking into account ecosystems and the equitable use of water resources, ultimately leading to an overall reduction of water stress.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The proposal assesses increasing water scarcity as a result of climate change as one of the main reasons for the need of a water productivity database. Climate change will affect agriculture through higher temperatures and more variable rainfall. Substantial reductions in precipitation are likely in semi-arid and sub-humid areas where agriculture is already precarious and often dependent on irrigation. The database should enable stakeholders to reduce water consumption and increase availability in periods of drought. Also, the database should allow the impacts of climate change to be monitored over time.

Step 2 - Integration into programme design

Score: Mixed

Strategy types: Technological (satellite monitoring and database), knowledge (capacity strengthening)

The main (technological) strategy of the programme is to contribute to water productivity by building a database using near real-time satellite data to make informed decisions about agricultural land and water use. The information obtained from the water productivity database provides tools to adjust water policies and plans to cope with water scarcity. As such, it is a prerequisite for making agriculture more climate resilient. The operationalisation of the database should result in the development of water-efficient irrigation policies and techniques.

While the rationale and design of the database are clear, the programme is less clear on how the application of the database should result in climate change adaptation. The project proposal states that the project will contribute to 'more sustainable,

productive and climate-resilient agricultural practices with a reduced impact on the environment in general and on fresh water resources in particular', but this statement is not operationalised in the programme design. It remains unclear what these practices are and how the database will contribute to them. Capacity strengthening is mentioned as a strategy, but this is not further elaborated, although it is mentioned that this will be elaborated in three pilot projects.

Step 3 - Implementation

Score: Mixed

The evaluation concludes that the database has been established, and is beginning to be used for research and field implementation purposes. However, the capacity strengthening activities and pilot actions developed in three pilot countries have not yet been able to adequately underpin the field implementation of the system and test its usability and applicability. While a significant number of people have been trained in the use of the database, this capacity strengthening has not been linked to projects on the ground, and the opportunity to build capacity in the system has been missed.

CCA scale score

Score: Responsive

The water productivity database has clear potential to contribute to the design of adaptation measures, and in implementing it the programme is responsive to this requirement. It could become transformative if the programme designs and implements strategies to harness this potential, including for marginalised groups.

Inclusion of marginalised groups

Score: Low

Although communities are mentioned as the ultimate beneficiaries, it remains unclear how information from the database will reach them. National government institutions dealing with water and agriculture and local irrigation authorities, including water user associations, are the main beneficiaries. The review of the pilots shows that reaching communities has been difficult due to over-optimistic assumptions about literacy, phone ownership, data availability and security. The MTR found that national ICT service providers have not yet provided farmers with applications to use the database. The project proposal states that special emphasis will be given to the inclusion of gender-disaggregated information, as water plays an important role in the lives and work of women, especially in rural areas. The MTR concludes that there is no evidence of gender mainstreaming in the project so far, either in the project design or in the outreach of the pilots.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Low; Ownership: Low

In general, alignment is low, as the MTR concludes that the project needs to find more decentralised and nationally owned implementation structures to increase proximity with the countries and to foster national engagement and uptake. A demand-driven approach, based on national/local problem solving is needed. Also, no link with domestic adaptation policies is mentioned. There are indications that local involvement and participation, institutional uptake and national ownership are starting to happen, but overall these need to be improved.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term: High; Long term: Low

The MTR concludes that the project has successfully set up the WaPOR database using remote sensing and IC technologies to monitor agricultural water productivity. The database is beginning to be used for research and field implementation purposes. However, the MTR also concludes that a strategic vision at global and country level to roll out WaPOR and optimise its impact on water management on the ground is lacking. Capacity strengthening activities and pilots in three countries have not adequately tested the usability of the system and underpinned its implementation in the field. The effectiveness of capacity strengthening is hampered by shortcomings in the planning, implementation, monitoring and evaluation of training and in the definition of key target groups.

Underlying mechanisms, factors and conditions explaining effectiveness

- The lack of a demand-driven approach based on national/local needs, priorities and opportunities has led to lower levels of uptake and hence effectiveness. It also threatens institutional sustainability.
- The effectiveness of capacity strengthening activities was lower because they were not linked to field activities and actual cases, and because local trainers were not used.

4 Capacity Building for operations of Secondary Urban water Systems and Urban Sanitation (AIAS)

Programme goal

The project aims to improve access to sustainable water and sanitation services in at least 15 small towns in Mozambique by building capacity at the level of the asset manager AIAS and at the operator/town level.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

There are no climate risk, vulnerability and exposure assessments. The 2018 monitoring report of phase one of the project shows that this led to incorrect projections. It mentions that the town of Mocuba was expected to become a system with many connections and hence a good revenue provider. This did not happen because of the damage caused by the 2015 floods, which had not been taken into account as a possibility. These floods are mentioned in the 2016 adjustment appraisal document as a reason for additional investments in the affected areas. The 2017 appraisal document of phase II of the programme briefly mentions that the daily work of AIAS is directly affected by issues related to climate change. Whereas in the Centre and North of the country, water and sanitation conditions have been severely affected by floods, in the South long periods of drought caused water shortages.

The IOB visit to AIAS facilities in the small town of Moamba in 2022 recorded an increased awareness of climate risks and their impact on AIAS operations following several droughts and floods. Heavy rains have eroded the river banks, which widened the river and changed its course. This causes problems in times of drought as it has decreased the depth of the river, making it more difficult to extract water. Also, there is more awareness about the impact on the local population. Heavy rains cause health issues (cholera) for people who use the river as a water source, as it becomes polluted with faeces and all kinds of waste. Droughts also reduce water quality and can cause health issues as people have little water to wash their hands.

Step 2 - Integration into programme design

Score: Low

Strategy types: None

The programme proposal does not mention any strategies related to climate change adaptation. The 2017 appraisal document of phase II of the programme briefly mentions targeted investments to alleviate the effects of shocks, such as floods and droughts, without substantiating the type of investment.

Step 3 - Implementation

Score: Low

Strategy types: Infrastructural

The project documentation does not mention the implementation of a CCA strategy. The IOB site visit found some infrastructural adjustments that had been made in response to previous shocks. The evaluation mentions that AIAS obtained investment funding from the Climate Resilient Infrastructure Development Facility (CRIDF) for water system rehabilitation in two towns. However, it does not specify what this entails.

Due to the erosion of the river, AIAS switched from its main concrete water inlet to makeshift floating pumps. The generator has also been moved to a higher location on an electricity pole, as the previous one was destroyed during a flood. In response to droughts, they have tried drilling boreholes, but many have been affected by salination. AIAS has only one salinity meter to for 150 boreholes. The provincial authorities have an outdated national map of saline groundwater locations, but lack a detailed map. Companies that drill boreholes are supposed to report their findings, but often they do not. So when they find salty water, they just close the borehole and leave it. Desalination technology is too costly. During droughts, AIAS has two additional backup options: (1) there is an agreement with FIPAG that they will compensate for the growing demand and decreasing supply through their new water plant; (2) there is a pipe that runs from the Corumana Dam in the Sabie River to Moamba as a backup in case the Incomati River does not provide enough water. Both solutions are only possible because Moamba is located close enough to Maputo, which is not the case for other towns.

CCA scale score

Score: Blind

There are no assessments of climate risk, vulnerability and exposure, nor are they translated into programme design. The floods and droughts that occurred during implementation have raised awareness and forced AIAS to take more climate-related action, but in a reactive and so far unsustainable way.

Inclusion of marginalised groups

Score: Mixed

As AIAS targets small and medium-sized towns in rural areas, it automatically caters to the poorer segments of society. Contracts with operators usually include a package deal with profitable and unprofitable areas. People that live further away, or in higher areas remain unconnected, however, due to high costs. Informal settlements are not connected either. These groups are particularly vulnerable during droughts. In Moamba, the local operator claimed to be able to continue the water supply during a severe drought (2013-2016) by turning the water on/off on a daily basis. However, villagers mentioned that the supply was sometimes disrupted for a week or more. This increased inequality, as people who owned a truck would drive to the river to collect water and sell it at a high price in Moamba to people without a truck. Although health authorities warned not to drink this water, villagers had no alternative.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Unknown; Ownership: High

As AIAS is a government entity, ownership is high. However, it is unclear how the programme with AIAS relates to national or regional adaptation policies. Although AIAS is a government entity, this does not mean that its policies are automatically in line with national or regional adaptation policies.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

Based on the documentation and the site visit, little can be said about the effectiveness of adaptation measures. Few measures have been taken, and the ones that have been taken are reactive and do not appear to be sustainable. Weak infrastructure and a fragile business model with many non-paying customers and illegal connections put the focus on daily challenges. One such challenge was encountered during the site visit. The water company was in the process of replacing a pipeline that had been designed to last 25 years, but had failed after 10.

5 Land Management and Administration (Gesterra)

Programme goal

The main aim of the programme is to support the development of an autonomous organisation for land administration and topographic mapping and a nationwide Cadastre, Land Registry and Mapping Organisation (CRMO). This should lead to the financial and administrative sustainability of the land sector in Mozambique. The objective of the Mozambican government's policy for the land sector, the Terra Segura programme, is to protect the rights of rural communities to land and thereby promote sustainable development. Over the next 5 years, it is expected that around 5 million land titles will be granted for parcels that are currently occupied according to customary norms and practices. To achieve this goal, a number of conditions need to be met, including qualified technical personnel in land administration. With this activity, the embassy supports the land sector of the government of Mozambique by training their personnel in land administration, especially in the ICT component.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

Climate change is mentioned in the project proposal as a contextual factor that is likely to radically change the availability and demand of land in some areas, posing new challenges for an institution that is already working hard to reform itself and establish new capacities to respond to current challenges. However, there is no specific analysis of what these challenges are and how they will affect the programme goals. The appraisal document does not mention climate change as risk for achieving the programme goals. It does mention better land rights as an important precondition for achieving the Paris climate goals. However, there is no analysis of how this is the case, and how the programme contributes as such.

Step 2 - Integration into programme design

Score: Low

Strategy types: Knowledge

The main strategy is to strengthen the capacity of land administration staff, including in the use of geographic information systems. There is no mention of linking this capacity strengthening to CCA.

Step 3 - Implementation

Score: Low

There is no mention of implementing capacity strengthening strategies in relation to CCA.

CCA scale score

Score: Blind

Climate change is mentioned as an important contextual factor, but this is not further elaborated in either the design or the implementation of the project.

Inclusion of marginalised groups

Score: Medium

Marginalised groups are not involved in the design and implementation of the programme, but the programme does address their needs as it aims to protect the rights of rural communities to land. About 90% of the beneficiaries come from rural areas, and the programme has contributed to the registration of approximately 200,000 plots of land owned by small farmers.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Unknown; Ownership: High

Ownership is high as the programme is implemented by DINAT, the directorate within the Ministry of Land, Environment and Rural Development (MITADER) responsible for land administration and management. MITADER is responsible for policies in the areas of land administration and geomatics, forests and wildlife, environment, areas of biodiversity conservation and rural development. It is also the ministry responsible for coordinating the implementation of the national climate change adaptation plan. Therefore, there is a high probability that this programme will be aligned with the national adaptation policy, however there is no explicit mention of links between the two.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

While access to land can be an important condition for investing in climate smart agricultural techniques, and for resilience in general, no such link is made in the programme, nor reported in its evaluation. Therefore the (likely) contribution to climate change adaptation remains unknown.

6 DGIS UNESCO-IHE Programmatic Cooperation 2 (DUPC2)

Programme goal

Developing and transition countries, in particular, face a wide range of water-related challenges, while their capacity to address these issues is often insufficient. The UNESCO-IHE Institute for Water Education addresses these challenges through (1) education at the master's, PhD and non-degree levels, (2) knowledge generation and dissemination, and (3) capacity strengthening of water sector organisations, higher education and research institutes. A key objective in conducting the education, research, and capacity strengthening activities is to educate and train the water scientists, engineers and managers of the future. Another key objective is to strengthen their organisations so they can manage water resources and deliver water services sustainably.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The proposal assesses the impact of climate change as one of the main drivers of change in the DUPC working areas. Reducing the vulnerability of the poor in particular to climate change is seen as a main challenge. Due to climate change, water-related hazards such as floods, droughts and pollution are expected to increase in frequency and intensity almost everywhere in the world. Drought is identified as an important factor with widespread social, economic and environmental impacts on communities around the world. The evaluation confirms the focus on climate resilience. Its survey found that resilience is ensured explicitly through the integration of scenarios in modelling of changes in water resource availability and impacts on groundwater salinity, and implicitly through feasibility studies on salinity mitigation and adaptation solutions.

Step 2 - Integration into programme design

Score: High

Strategy types: Knowledge

The DUPC2 programme treats climate change adaptation as a cross-cutting issue throughout its portfolio. Projects are expected to integrate climate change from the proposal stage onwards, integrating it into their activities and formulating success indicators.

The main strategy of the DUPC2 programme is to strengthen the capacities of professionals, training and education institutes in developing and transition countries and to conduct joint water-related research programmes with them. The programme aims to reduce vulnerability to droughts and floods by understanding and assessing the application of appropriate adaptation measures in different contexts. This knowledge should enable the identification and implementation of various types of adaptation strategies, including nature-based solutions, new technologies and better water governance.

Step 3 - Implementation

Score: (probably) High

Strategy types: Knowledge

Both the annual report and the evaluation of the DUPC2 programme report on the actual implementation of mainstreaming climate change adaptation throughout the research and capacity strengthening portfolio. Multiple activities are mentioned in the annual report (2021), such as studies on changes in groundwater and salinity levels in Mozambique and Vietnam, on flood-based farming systems (Mekong), on groundwater rejuvenation as a climate change resilience measure in the Ganges basin, and a course on water diplomacy in the Brahmaputra basin. Based on a survey, 75% of the projects report a medium to strong focus on climate change resilience. Nevertheless, the evaluation mentions that existing monitoring tools make it difficult to assess the degree to which DUPC2 projects have considered CCA in their design and implementation.

CCA scale score

Score: (probably) Responsive

The DUPC2 programme focuses on a precondition for effective climate change adaptation in the water sector, namely the knowledge and capacity of institutes and (future) decision-makers in the sector to be able to make informed decisions on strategies to combat the effects of climate change. This rationale is clearly explained in the project design and is (probably) also implemented throughout the portfolio.

Inclusion of marginalised groups

Score: Unknown

Knowledge institutes are the main target group of this programme, not marginalised groups. However, it does address marginalisation in capacity strengthening and research pathways. The programme proposal states that gender and inclusion hierarchies deeply shape processes of water governance and co-determine the allocation of water and water services, the distribution of the risks of climate hazards and floods, as well as the distribution of the benefits of water interventions. By defining it as a cross-cutting theme, DUPC2 sets out to make these linkages visible, and to better understand the social impacts of water interventions or water-related disasters, as part of the development of strategic knowledge about what works for whom.

The evaluation concludes that at the project level, DUPC2 integrates gender and inclusion from the proposal stage, where projects need to take these cross-cutting themes into account in their activities and formulate success indicators for their integration. At programme level these topics are well represented in the DUPC2 project portfolio. Also, a dedicated inclusion team was established in 2018 to advise the DUPC2 management team and projects on the topic. However, the monitoring tools do not show the extent to which individual projects address these cross-cutting issues. As a result, actual outcomes for marginalised groups remain unknown.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Unknown; Ownership: Low

While the alignment with national adaptation policies remains unknown, the evaluation concludes that DUPC2 projects collaborate with key stakeholders in the water sector in the partner countries and address the challenges and needs of the local water sector. Numerous projects address important topics in the national or regional water sectors that are neglected or ignored by national governments. DUPC2 partners consider the programme to be highly relevant both to their organisation and to local/regional needs and priorities. Stakeholders interviewed emphasised that DUPC2 has helped to increase the relevance of projects to local water and institutional needs and challenges, through demand-driven research. At the same time, the evaluation concludes that links with local policymakers are weak and not sufficiently considered from the proposal phase onwards.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

Both short-term and long-term results concerning climate change adaptation and other cross-cutting issues such as gender and inclusion are not captured by the programme or the evaluation. While the evaluation concludes that DUPC2 is successful in achieving its capacity strengthening, research and knowledge-sharing targets, it also indicates that there is a lack of monitoring data on how climate change adaptation is integrated into these targets. This means that no conclusions can be drawn about its effectiveness. This is a missed opportunity as the DUPC2 programme has the potential to contribute to adaptive capacity. Short-term outcomes would be increased knowledge of adaptation options through research and increased capacity to assess and implement them through capacity strengthening. Long-term outcomes would then be increased resilience and reduced exposure as a result of (advocating for) the implementation of such adaptation options. The evaluation finds hints of this potential as various case studies pointed out that projects address important topics in the national or regional water sectors that are neglected or ignored by national governments, in particular topics relating to climate change, ecological sustainability and inclusion. In doing so, they could influence and guide changes in the political water agenda.

Underlying mechanisms, factors and conditions explaining effectiveness

- Co-funding enhances both local engagement and ownership, which contributes to the long-term sustainability of the results. Stronger involvement of national governments is crucial as they can define the end use of the project results and improve their countries' enabling environment.
- Multi-stakeholder initiatives that bring together academics, government, civil society and the private sector are instrumental to achieving stronger societal impacts by encouraging them to be mutually responsive. This is particularly important when addressing complex development challenges, such as climate change adaptation, that impact people and society as a whole.
- For water diplomacy and water governance, including for climate change adaptation, spatially explicit information about current and future availability and use of water resources is important, as well as the linkages with related sectors, such as food, energy, transport and trade.

7 Value Chain & Youth Development Programme (SNV Cabo Delgado)

Programme goal

The programme seeks to stimulate agricultural development in the Cabo Delgado region and, in particular, generate employment opportunities for youth. The programme aims to explore the largely untapped potential of the region, namely the availability of good soil, water and a favourable climate, a young labour force and projected growth in demand for agricultural produce. It proposed three components: soy value chain development; mango value chain development and opportunities for youth employment. Due to increased conflict and Covid-19, the mango component was replaced by horticulture, and a component on the promotion of economic resilience in agriculture for internally displaced persons was added at the request of the government.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

The programme proposal briefly mentions climate change as an important issue for Mozambique in the form of increasingly extreme weather conditions such as droughts, changing rainfall patterns, floods and cyclones. It also mentions that smallholder farmers in developing countries in general are particularly vulnerable to climate change, as they have limited resources to cope with shocks and stresses. However, there is no more specific analysis of particular climate projections and how this impacts the goals of the programme and the vulnerability and/or exposure of the target groups.

Step 2 - Integration into programme design

Score: Mixed

Strategy types: Technological (drought-resistant seeds), knowledge (training in climate-smart agriculture), financial (value chain development)

While the climate change adaptation strategies remain quite abstract in the programme proposal, the annual report provides some more detail, but without linking them to a contextual analysis. The proposal identifies four elements of a climate-smart approach: (A) identifying climate-relevant business and industry; (B) supporting climate-smart interventions; (C) measuring and demonstrating results, and (D) and communicating impacts to celebrate achievements and encourage changes in the future. However, only components A and B are being translated into the practical design of the programme. For component A, the main climate-smart elements in the proposal are choosing mango as a variety that can cope with droughts and choosing soy bean for its nitrogen-fixing capacity to maintain soil fertility (for which it is not explained why this should count as a CCA strategy). The annual report mentions that during the programme, sweet potato was introduced as a drought-tolerant crop for communities to withstand environmental shocks. Climate-smart interventions (component B) in the proposal include using drought-tolerant seeds and technical (agro) training that takes into account water use, and the application of organic inputs for improved soil fertility and productivity. The annual report provides more detail on the types

of climate-smart agriculture techniques. These include zero tillage, mulching, bio-compost, intercropping (maize and beans), crop rotation, integrated pest management and the promotion of drip irrigation systems. The annual report also mentions collaboration with government institutions on disaster preparedness and recovery.

Step 3 - Implementation

Score: Unknown

Strategy types: Technological (drought-resistant seeds), knowledge (training in climate-smart agriculture), financial (value chain development)

Unknown: As components C and D are not really implemented in the proposal and the annual report, nor described in the evaluation, it is difficult to assess the extent of implementation of specific climate change adaptation strategies within the various components.

CCA scale score

Score: CCA sensitive

The project documentation does mention climate change and vulnerability, albeit in a very general way. Various adaptation strategies are proposed, though they are not linked to a contextual analysis. Also, the extent of implementation of these adaptation strategies remains largely unknown due to a lack of systematic monitoring information.

Inclusion of marginalised groups

Score: Medium

While the programme does focus on the most marginalised groups and has a good strategy for gender mainstreaming, local ownership seems to be lacking. The programme targets the rural population of Cabo Delgado with a specific focus on youth and women. It aims for a transformative gender approach, addressing inequitable gender norms and unequal access to productive resources, skills and market opportunities. The MTR concludes that the programme design responded accurately to the needs of youth and women in Cabo Delgado in terms of improving livelihood prospects, but it also concludes that no evidence was found of using lessons learned from the current implementation to improve local ownership.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Unknown; Ownership: Medium

The MTR concludes that the programme is strategically aligned with the national, provincial and district strategic objectives, while addressing key constraints for the development of agriculture. Most key stakeholders and beneficiaries consulted have confirmed the relevance of the programme, especially the local government authorities. However, alignment with adaptation policies in particular is not mentioned. While government institutions are not the primary owners of this programme, the programme has responded to government requests and sought participatory engagement with them at the national, provincial and district levels, both in the identification of beneficiaries and in the implementation of activities.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

The MTR reports progress on the targets of the various components, which could lead to increased resilience and reduced exposure to the impacts of climate change. However, as this is not monitored and reported as such, the extent to which these results reduce the risk of future negative impacts of climate change remains unknown. The most important results mentioned by the MTR are the improvement of income of over 1,286 families (32.15% of the target) from soybean or soybean value chain-related (self) employment. Regarding youth empowerment, the programme has supported the integration of 1,027 young people, which corresponds 24.6% of the planned global target.

8 WaterWorX

Programme goal

The aim of the programme is to ensure sustainable access to safe drinking water and/or sanitation for 10 million people in the 2017-2030 period, of which at least 25% belong to marginalised groups. This will be achieved by improving the technical, operational and financial performance of local water operators, by developing 'bankable' investment proposals to attract (inter)national investors, and by improving the enabling environment for water utilities in several countries. It is a public-private partnership between Dutch water supply companies and the MFA.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Mixed

The programme proposal stresses the need for climate-resilient water facilities to ensure a sustainable water supply in the future. As the programme operates in many different contexts, it proposes the development of long-term climate scenarios for each water operating partnership. The scenarios should identify the long-term risks of climate change for drinking water facilities and propose adaptation measures for the different contexts. This should result in climate-resilient water supply plans for 2050. While this approach is good, the evaluation concludes that it has not been adequately implemented.

Step 2 - Integration into programme design

Score: Low

Strategy types: Financial/infrastructural/political/knowledge

Due to poor implementation of step 1, there is little information on the various contextualised CCA strategies. An annual plan mentions several adaptation strategies but does not provide detailed information. These strategies include the signing of five climate-sensitive investment proposals, the building of a climate-resilient water treatment facility, advocacy initiatives at the CoP in Glasgow, and publishing and knowledge sharing on how to make the water sector more climate resilient.

Step 3 - Implementation

Score: Low

Both the annual report and the evaluation mention the lack of immediate urgency of climate change adaptation. This, combined with travel limitations due to Covid-19 restrictions, has delayed or put on hold this activity for many of the water operating partnerships. The 2021 annual report mentions that only 6 out of 18 climate-resilient water supply plans for 2050 have been finalised. The scope of the plans varies, with some partners working on specific climate-resilience issues affecting their current operations, while others have developed catchment plans or company-wide resilience plans.

CCA scale score

Score: Sensitive

While the approach of developing long-term adaptation plans based on climate scenarios is a good one, the implementation of this approach is lagging behind.

Inclusion of marginalised groups

Score: Unknown

The plans to reach out to marginalised groups are good, but little is known about their implementation and effects. The project proposal presents a strategy for reaching marginalised groups (2.5 million people), namely to use an improved financial situation of the water utilities to improve services in poor areas. The ambition is to develop such a pro-poor approach for about 60% of the water operating partnerships. It is not clear from the proposal why this approach is not applied to all the partnerships, and the evaluation finds that these pro-poor plans are not pursued to a significant extent by all. The proposal has an ambitious gender strategy, aiming for a gender-specific or gender-transformative approach by using gender assessment tools for integrating gender into the strategies, plans and activities of the water operating partnerships. Both the pro-poor and gender aspects are monitored at a general level, providing little detail. As the evaluation also provides little information on both topics, it remains unclear how and to what extent this programme is actually inclusive.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Low; Ownership: Low

The evaluation concludes that the linkages with local and national government have been particularly weak, negatively affecting ownership and alignment. National and local governments, mentee utilities and other important stakeholders are not part of the governance structure of the PPP, which prevents them from taking ownership. The lack of agreements with national/local governments to work with and support the local WaterWorX programme hampers alignment, for instance in obtaining support for the necessary infrastructure investments. In addition to the general lack of alignment, there is no specific mention of adaptation policies.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

The evaluation did not include specific evaluation questions on climate change adaptation, the resilience of the mentee utilities, nor on poverty reduction and gender equality.

9 Beira Master Plan (BMP)

Programme goal

In 2013, the municipality of Beira finalised its Master Plan for future urban development, focusing on economic development, addressing issues of poverty and vulnerability, as well as flood protection and climate change adaptation. The Netherlands supported the development of this plan and is contributing to its implementation through the long-term Beira-NL Delta Programme. This programme is supported by several Dutch ministries (I&W, EZK, BZ) and the Netherlands Water Partnership. The evaluation mentions that the portfolio includes 61 individual projects and has a total volume of approximately EUR 14.6 million. Many of these projects involve feasibility, environmental and social impact studies to leverage investments from other donors, (development) finance institutions, the public sector and the private sector. The MFA appraisal document mentions the following planned outcomes: (1) capacity strengthening of the municipality of Beira (cadastre, land titles), (2) climate-resilient urban development plan, and (3) prepared locations for urban expansion (Maraza and Munhava) for low-income housing (appraisal document Maraza).

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Mixed

In many ways, the BMP contained a very good risk, vulnerability and exposure assessment, much more thorough than many other programmes. The score is mixed because it made an incorrect assessment of the risk of cyclones with huge consequences. The BMP was designed on the basis of an assessment that Beira is vulnerable to rising sea levels as a result of climate change. It states that while climate change can impact both the mean sea level and the storminess of a given region, the most relevant effect of climate change for the Beira coast is considered to be rising sea levels. Despite multiple attempts by the Netherlands to include the impact of cyclones, the municipality decided to focus on rising sea levels. It was only after Cyclone Idai destroyed Beira that the risk of cyclones was included in the 2019 Beira Recovery and Resilience Plan (BRRP).

The initial analysis was that, as a coastal city only slightly above sea level, Beira is becoming more susceptible to flooding due to rising sea levels combined with periods of excessive rainfall. The BMP uses climate scenarios to illustrate the likelihood and scale of these risks and relates them to current levels of exposure and vulnerability. The city's coastal defences against tides and sea surges, both natural and artificial, are failing. This has resulted in coastal erosion, leading to severe flooding, which is impacting the community in numerous ways, including disruptions of movement and accessibility, economic damage, environmental degradation, and health problems, such as increased cases of malaria and cholera. The fact that the poorest (usually illegal) neighbourhoods are located in swamp areas with failing drainage canals has exacerbated this situation.

Step 2 - Integration into programme design

Score: Mixed

Strategy types: Social/behavioural, political, knowledge, technological options, infrastructure, financial, nature-based. While the BMP incorporates a combination of highly relevant CCA strategies, its main design flaw was the planning and prioritisation of these strategies. The evaluation concludes that the main focus at the start of the programme was economic development and finding opportunities for Dutch businesses, with limited attention to the resilience of the population. This was a request from the municipality that dovetailed well with the Dutch aid and trade agenda. After the cyclones hit, it became clear that the first focus should have been on addressing vulnerability, drainage and coastal protection. It was only after Idai that coastal protection and drainage became a top priority, even though the risk of cyclones had been raised by the Netherlands years before. These changes were incorporated in the 2019 BRRP. Another problem in the design of the BMP is identified by the evaluation, namely that it lacked a clear ToC and results framework for monitoring resilience and inclusiveness.

The BMP and the BRRP incorporate the following adaptation strategies:

- Knowledge: Environmental and social impact assessments, and (updates of) studies on issues such as coastal protection, drainage, land registration and development, and resettlement. Also, organising trainings/workshops and networking sessions on these issues.
- Political: Institutional strengthening of the Beira municipality was considered to be important for it to be able to implement the BMP and act on climate change adaptation.
- Social/ behavioural: Projects addressing behaviour change for climate change adaptation, including early warning, resettlement of displaced people (Maraza, Praia Nova), and the (mis)use and maintenance of drainage canals by local communities.
- Technology: Creating flood-proof, accessible and affordable land plots for hurricane-proof housing and businesses in a reserved area of 1,000 ha.
- Infrastructure: Through DRIVE (and D2B studies), NL has committed EUR 60 million for coastal protection and drainage projects, as part of an integral agreement between the government of Mozambique and the World Bank. Also, the Netherlands was involved in the preparation of the Beira Port access road. Drainage problems are to be addressed

through a pilot project on tertiary canals and cleaning activities. The BMP did not include concrete outcomes in terms of achieving sustainable coastal defence systems, protection of people and livelihoods from water hazards and adequate climate-resilient infrastructure. Due to the agreements with the World Bank after Idai, the likelihood of achieving outcomes in the future has increased significantly (interviews).

- Nature-based: Mangrove and dune restoration for coastal defence.
- Financial: Business-oriented projects with the (Dutch) private sector to invest in or set up joint ventures with the Dutch state to implement several of the above-mentioned strategies. Most importantly, the establishment of a land development company with FMO and the involvement of (Dutch) dredging companies to provide the sand for the creation of flood-proof plots. Feasibility studies were used as a strategy to attract investors. Another financial strategy in the BMP was to provide vocational training for women and youth to generate alternative income.

Step 3 - Implementation

Score: Mixed

While the BMP implements many relevant CCA strategies, the evaluation identifies several important shortcomings. First, the implementation of both the BMP and the BRRP suffers from the lack of an integrated approach and the lack of clear selection criteria to agree on priorities. This is linked to the lack of a ToC, which resulted in many projects pursuing priorities for which it was not always clear how they are related to the overall objectives of resilient and inclusive urban delta management. Second, no structural and integrated risk analysis or management system are present, which would be required for such a complex programme in a high-risk environment. This, combined with the positive attitude of many stakeholders involved in the Delta Programme, appears to have led to some risks being ignored. Third, the studies that were conducted led to limited concrete follow-up. It was only after Idai that donors came together to decide on priority funding for climate-resilient infrastructure in a coherent way. Since then, coordination between various donors and the municipality has improved significantly, according to several respondents. So far, actual implementation has been limited to the land cluster, although with two planned DRIVE projects, the focus of implementation will shift to coastal protection (infrastructure and nature-based) and drainage.

The BMP and the BRRP implement the following adaptation strategies:

- Knowledge: Studies (41 out of 61 projects), training and networking sessions have been the main focus of implementation. The expertise and knowledge of the Netherlands in Delta management is recognised and appreciated. However, the evaluation finds that the studies on climate-resilient infrastructure were not coherent enough; only eight studies have been followed up so far, and that in general little attention has been paid to documenting lessons learned and knowledge exchange.
- Infrastructure: With the exception of the Maraza pilot area, there has been little implementation of infrastructure (see technology). There has been a trial with the construction of 10 relatively cheap climate-resilient houses, which appeared to be successful after Idai (7/10 persisted), according to IGG. Projects such as the port access road and the use of dredged sand for land development have not been implemented to date, partly because of the high costs estimated in the RVO feasibility studies, partly because a Mozambican dredger decided to sell the sand at a higher price, and partly because of political tensions between the national and municipal (opposition) governments. The DRIVE coastal defence projects will be implemented in a smaller area than initially anticipated due to lower available budgets (interviews).
- Social/behavioural: Compensation for farmers to be resettled has been provided, although with delays. The drainage canal cleaning campaigns have resulted in a well-functioning approach, according to FACE, although it is a demanding and dangerous task (snakes, diseases, etc.)
- Nature-based: Due to budget cuts (from EUR 90 to EUR 60 million), areas where nature-based solutions were planned were not prioritised (interview with the Municipal Department of Coastal Protection and Risk and Disaster Management). Some of this has been picked up by other donors, such as a World Bank project that created a green infra retention park in the city.
- Political: While the weak capacity of the municipality was recognised from the start of the BMP, this did not become a key priority. The decision was made to address capacity challenges in relation to specific projects such as land administration.
- Technology: A pilot project was carried out in the Maraza area to provide flood-proof, accessible and affordable land for hurricane-resistant homes and businesses.. This pilot included preparatory studies and the implementation of a strengthened land registry system and the establishment of a land development company in 2018. Activities included working with the Dutch Kadaster on formalising land rights, backfilling the required area, upgrading the access road and a small wastewater treatment plant. In the case of the land development company, there were several serious problems related to its mandate, its business plan and its capacity. These problems hampered implementation. Out of the 50 ha of planned land development activities, only 3 ha was carried out, without the planned affordable hurricane-proof houses. Respondents also said that, unexpectedly, the central government claimed the industrial area as state property, so this area could not be developed.
- Financial: The land development company was established, but the above-mentioned problems led to the withdrawal of FMO, which further hampered its functioning and financial self-sufficiency. Also, the planned involvement of dredging companies did not materialise due to high costs. The strategy of vocational training for women and youth to generate alternative income was implemented.

CCA scale score

Score: CCA responsive

The BMP did a thorough analysis and designed and implemented a comprehensive programme to address CCA. Despite this approach, it also (partly) employed a reactive approach, as it did not take into account the possibility of devastating hurricanes in the short term.

Inclusion of marginalised groups

Score: Low

The evaluation concludes that so far most of the attention has been given to the economic development of Beira, with relatively little attention to issues of inclusion and resilience of the most vulnerable population. Consultation with marginalised groups has remained rather limited, as noted by the current mayor in an interview. The evaluation notes that housing in Maraza is presently targeted at middle-income level households, and the idea of cross-subsidising houses for low-income households, as was originally conceived, appears to have been abandoned. IOB's site visit found that the 3 hectares of filled land have become suitable for housing, but remain fallow because they are too expensive. In addition, the programme to secure land rights for all people did not focus on unregistered urban settlers. Regarding the displaced people in relation to the Maraza land development pilot, it is not yet clear whether the vocational training of displaced persons (with a special focus on women) will lead to sustainable income generation. Therefore, the evaluation questions whether there has been sufficient focus on inclusion. Interviews with people in the poor neighbourhood of Praia Nova, which is located in an unsafe area, echo these doubts, as they are aware that much needs to be done to make them resilient to climate change. The main issues they mention are drainage, clean and safe drinking water, well-maintained and climate-proof infrastructure, land titles, affordable housing and/or compensation in case of resettlement/displacement. Both the interviews and the evaluation confirm that attention to the poor people has recently increased, with infrastructure plans for vulnerable areas, and a newly appointed independent observer on inclusion to ensure the needs of local communities are taken into account, and vocational training for vulnerable youth through the Young Africa programme.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: High

The BMP was developed and endorsed by the municipality of Beira with support from the Netherlands. Interviews make clear that the collaborative attitude of the former mayor has been key to the development and ownership of this integrated master plan. As such, it is highly aligned with local policies, priorities and needs to combat the effects of climate change. The BMP is a good example of localising adaptation goals that fit within a broad national adaptation strategy. However, due to conflicting political interests (Beira is ruled by the opposition), the central government has not formally approved the BMP. To improve national buy-in, the Netherlands has been organising roundtables since 2019 with the central government, the municipality and other donors.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term – Mixed; Long term – Unknown

Given the limited implementation of the programme thus far, combined with implementation challenges (Covid-19, cyclones), the evaluation concludes that it is not possible to reasonably assess the extent to which the programme is on track to achieve its long-term inclusive resilience results. Also, it is unclear whether there is an adequate balance between short-term outputs and long-term results. While the integrated approach of the Beira Master Plan is a good strategy for improving resilience in the long term, the focus on individual projects has prevented the implementation of such an integrated approach. Given the occurrence of multiple cyclones, the timing of the projects should have been different, with more emphasis on (tertiary) drainage, disaster preparedness and infrastructure early on. The new DRIVE projects will most likely contribute to a safer and more resilient Beira. However, as these projects are still in an early phase, their impact on the resilience of the population cannot yet be assessed. The overall weak institutional and financial capacity of the municipality, and political tensions with the central government affect sustainability and need to be addressed.

In the short term, the NL-Beira programme has produced some positive results, according to the evaluation and several interviewed respondents. First, the coordination mechanisms that the Beira-NL programme established in the years prior to Idai facilitated the rapid establishment of a joint damage and needs assessment after Idai. This was instrumental in securing over USD 200 million in pledges for recovery. Second, it contributed to Beira's cyclone risk awareness and preparedness, but only after the first cyclones had already hit the city. Third, the evaluation concludes that although the overall development of the city's institutional capacity is lacking, some progress is being made in specific areas such as land administration. This generates tax revenue that can be used for the maintenance of drainage canals and waste management. Fourth, the long-term approach combined with the expertise and knowledge of the Netherlands in Delta management is recognised and appreciated by the various stakeholders, thus building the trust necessary for implementing the BMP. This manifested itself in a good collaboration between the main stakeholders on the NL side and the municipality of Beira, in particular the former mayor. Fifth, the early warning system introduced for the whole city proved to be partially functional during Idai. Despite

extensive damage to the city's housing stock and infrastructure, the number of casualties was relatively low. In addition, the mentality or sense of urgency to prepare Beira for the rainy season has increased. Vulnerable/weak trees are being cut, sand(bags) are being put on roofs and ditches are being cleaned (interviews).

However, the assessment also identifies some negative aspects. First, the future of land development is threatened as it is currently not economically viable. Factors include the absence of a viable business plan, the limited municipal budget, limited access to capital, the risk of corruption, no agreement for the access to sand at commercially attractive rates and a limited portfolio of business propositions. Second, two-thirds of the programme's budget was spent on studies, process support and technical assistance, with limited concrete follow-up. Out of 41 studies, only 8 can be linked to follow-up activities. Third, the framework contract and RVO procurement procedures (in Dutch) led to a relatively small group of Dutch consultants being involved in the Delta programme with limited price competition. Interviewees indicated that (Mozambican) companies with previous experience in Beira would probably have been better qualified. Fourth, the evaluation links the absence of a joint steering committee to the fragmentation of activities, which negatively affects the ownership of the BMP by Beira and the sustainability of results. Finally, M&E and results orientation at the programme level (especially in terms of exposure and resilience) have remained rather limited. Also, the design of the key funding instrument, Partners for Water, with many small individual contracts, does not allow for good overall monitoring. A question raised by interviewees is how to create space in the M&E of MFA for long-term pathways to measure local ownership, continued funding from private parties and income from tax revenues.

Underlying mechanisms, factors and conditions explaining effectiveness

- Long-term collaboration is important for mutual trust and, in turn, effective implementation.
- The central role of the former mayor was both a strength and a weakness. As an enthusiastic and powerful leader, he ensured the implementation and local ownership of the BMP. His untimely death also made the programme vulnerable.
- A more detailed and integrated urban structure plan is an essential condition for a coherent implementation of all projects. The evaluation notes that the BMP is still too abstract and that a detailed plan for Beira is not yet available. Only some partial urbanisation plans exist, with the risk of fragmentation.
- Political tensions between Beira and the central Frelimo government are hampering implementation.
- An unclear mandate and a weak business plan led to the malfunctioning of the land development company. The evaluation notes that too little attention was paid to lessons learned from previous PSD programmes to prevent this.
- The weak institutional capacity of the municipality hampers its ability to collect revenue, which harms the (financial) sustainability of the long-term programme goals. Nevertheless, improved land administration has led to increased revenues.
- Fragmentation leads to relatively high costs for coordination and management. A steering committee with both Dutch and Mozambican (municipal) parties could help to improve the coherence of the implementation.

10 Integrated Water Resources Management Fund (IWRM)

Programme goal

The IWRM programme aims to improve water security and water safety for at least 1,500,000 people. This should be achieved through the following outcomes: 1. equitable allocation of water; 2. Reduced flood (and drought) risks; 3. Improved water quality; 4. increased availability of water. The IWRM Fund covers five separate pre-existing projects that have been grouped together to create synergies (PRIMA II, DNAAS, DNGRH, ARA-Centro, ARA-Norte). The Prima II project focuses on transboundary negotiations on water distribution between Mozambique, Eswatini and South Africa. The projects with DNAAS (National Directorate for Water Supply and Sanitation) and DNGRH (National Directorate for Water Resources Management) focus on improving their institutional capacity to strengthen them in their role as key policymakers and regulators of the water sector. Both ARAs (regional water management administration) are supported to strengthen them in water management, service delivery and accountability. Most of the support is delivered at the decentral level (support to ARA-Norte and ARA-Centro) and at the transboundary level (PRIMA II). Engagement at the national ministerial level is also maintained, as it is considered crucial for the guidance and monitoring of the Mozambican water sector (support to DNAAS & DNGRH). A fund manager was contracted to increase the coherence of the IWRM programme and strengthen the capacity of the implementing organisations. Also, an expert facility for technical assistance by Dutch consultancies was established.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Mixed

At the programme level, the appraisal document clearly shows that the programme has been designed with climate change adaptation in mind. It describes the impact of climate-related hazards such as droughts, floods and cyclones on IWRM. Water supply, drought management and flood control are already precarious issues due to deficiencies in infrastructure, poor sector management and a downstream position. These are expected to be exacerbated by climate change. The general design and rationale of the programme is not followed up by a more specific analysis of the climate change impact, exposure and vulnerability by the fund manager. There is no mention of climate change in the fund manager's proposal.

At the project level, PRIMA II briefly mentions that water scarcity is expected to be exacerbated by (among other factors) climate change. DNAAS briefly reflects on the importance of climate change to its work in its proposal, while no proposal was available for DNGRH. Both ARAs present a somewhat more detailed climate and vulnerability analysis for their IWRM work. However, they report exactly the same analysis, even though they are located in different areas that are expected to experience different impacts from climate change (see, for instance, USAID climate factsheet). An interview with ARA-Centro revealed that they do not use medium to long-term climate projections, but make their own predictions by looking back three to four years. In an interview with DNGRH, it was mentioned that there is no good national territorial planning system to take into account vulnerability.

Step 2 - Integration into programme design

Score: Mixed

Strategy types: Nature-based, infrastructural, technological, knowledge, political, socio-cultural

The appraisal document presents a good argument for the overall design of the programme, linking the importance of supporting the various institutions to their role in combating the effects of climate change. However, this logic is not mentioned or operationalised by the fund manager responsible for coordinating the programme. At the project level, several adaptation strategies are presented that fit the mandate and tasks of the various institutions, though at various levels of detail. To secure water during droughts and prevent disasters during floods, the Prima II programme focuses on transboundary negotiations on water distribution between Mozambique, Eswatini and South Africa. The ministerial departments DNAAS and DNGRH have a coordinating and regulating role, so their adaptation strategies are mainly political/institutional. DNAAS mentions that strategies to mitigate the effects of climate change are not sufficiently covered in policy documents and proposes to harmonise, update and complement them with new regulations such as a Regulation for Water Use in Critical Periods. No proposal could be found for DNGRH, so it is not known how they integrate CCA strategies into this programme. Both ARAs present strategies in various areas such as infrastructure adaptation, application of flood monitoring technology and knowledge management. The various adaptation strategies include:

- Nature-based: Demonstration projects to convince the population of ecosystem-based water storage techniques (ARA)
- Infrastructural: Maintenance and development of infrastructure for water storage and flood control (ARA)
- Technology: Setup of a transboundary information sharing system on water resources (PRIMAII), hydrological monitoring and forecasting stations/techniques (sediment, water level, water quality), early warning systems (ARA)
- Knowledge: Joint training on IWRM (PRIMAII), training course on dam construction and management for technicians (ARA), research on flood risk mapping, studies on important groundwater resources (ARA)
- Political: International negotiations on water use (PRIMAII), adjustment and updating of policies and regulations, institutional coordination for adaptation (DNAAS, DNGRH), planning of large dams (DNGRH)
- Socio-Cultural: disaster risk reduction and preparedness, advise on spatial planning and resettlements (ARA, DNAAS, DNGRH)

Step 3 - Implementation

Score: Mixed - Low (overall programme, PRIMA-II, DNAAS, ARA-N) and High (DNGRH, ARA-C)

The MTR concludes that the programme is generally not on track, both in terms of activity implementation and budget expenditure. At the programme level, the MTR finds that the appraisal document is the only overarching document, and hence an integrated approach and implementation (also on CCA) is missing. Nevertheless, the evaluation also notes that the programme puts much emphasis on the flood and drought components, which are relevant to climate change adaptation.

At the project level, the MTR finds that PRIMA-II has not made much initial progress due to the reorganisation of the funding channel, and challenges with staff recruitment. DNAAS's achievements are limited thus far, with slower progress in the area of regulations and agreements in particular. ARA-Norte has also made limited progress, often due to an unfavourable external context, lack of resources and reliance on external advice. DNGRH is well on track in implementing its activities in the areas of equitable water allocation, flood risk reduction and water quality improvement. Due to the lack of a proposal, it is difficult to determine what type of CCA strategies are involved. ARA-Centro is showing some tangible progress, with the exception of the reinforcement of the hydrographic network monitoring system.

CCA scale score

Score: CCA sensitive to CCA responsive

Overall, the programme can be scored CCA sensitive, as it clearly addresses climate change issues, but it lacks detailed analyses and an integrated approach and it has limited implementation. Individual components of the programme can be scored CCA responsive, especially ARA-Centro with a more detailed approach to CCA strategy design and implementation.

Inclusion of marginalised groups

Score: Low

The MTR concludes that the IWRM programme lacks both a pro-poor and a gender-sensitive approach. While the ARAs mention some aspects in their programme proposals, the MTR finds no link to concrete activities, let alone results. It therefore recommends that these matters be made more visible and integrated into the programme, its components, its activities and its result framework. In an interview with DNGRH, the importance of a pro-poor focus was mentioned, as poor communities tend to settle in flood-prone areas for agricultural purposes. At the same time, it was mentioned that communication with these groups needs to be improved.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: High

The MTR concludes that the IWRM programme remains relevant to national and regional policies and priorities, including climate change adaptation. The design of the programme benefited from existing national strategic studies, such as the National Water Resources Management Plan developed in 2018 and the Water Sector Action Plan for the implementation of SDGs 2015-2030. The geographical focus of the programme is well aligned with the priorities of the sector plans.

Furthermore, the underlying plans and activities have been formulated by the implementing government agencies and are linked to their own core activities and institutional priorities. At the same time, several interviews (ARA Centro, DNGRH, WB) indicated a mismatch between what Mozambique wants for CCA in IWRM (big dams for water storage, electricity and flood control) and what it gets (small dams, capacity strengthening, monitoring tools, etc.). Corruption scandals and environmental and social risks are mentioned as the main reasons for the lack of interest of donors to invest in such large infrastructure.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

Due to the overall limited implementation of the programme, it is difficult to define any results. The MTR finds that the results framework used by the programme offers little information. In particular, no conclusions could be drawn for the cross-cutting issues (climate change, pro-poor and gender) as the results are unknown. Also, there is a big gap between project results and programme results, as the five different projects show weak linkages caused by the weak role of the fund manager. Lack of progress and major delays are due to external (Covid-19, insecurity in the north of Mozambique) and internal factors (short inception period, weak implementation capacity of implementing partners, lack of dedicated project teams, inefficient procedures for contracting and procurement). The external factors had been identified by a risk analysis, but no mitigating strategies had been designed for them. A positive aspect for the effectiveness and sustainability of the IWRM programme is mentioned in interviews with EKN and ARA-centro, namely the focus on the maintenance of existing infrastructure and connections rather than only focusing on new ones.

11 Shared Resources, Joint Solutions (SRJS)

Programme goal

The overall programme goal is to safeguard ecosystem-based international public goods (IPGs). These include water supply, food security, climate resilience and biodiversity. Safeguarding these public goods should be achieved through a strategic partnership between civil society organisations (CSOs) and the MFA. The programme strengthens the lobbying & advocacy (L&A) capacity of CSOs so they can advocate for better corporate and government policies and practices. The programme focuses on 16 low- and lower-middle-income countries across nine landscapes. SRJS aims to work towards sustainably managed landscapes that provide the most essential ecosystem services on which local communities and broader economic development depend (programme proposal).

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

Throughout the SRJS programme proposal, climate change risk and vulnerability are mentioned as important factors affecting the livelihoods of marginalised communities. The overall programme proposal describes climate change issues in the various landscapes the programme operates in. The impact of climate change has been used as an indicator for the selection of landscapes. A detailed context analysis in each of the landscapes was carried out during an inception phase, taking stock of specific threats and opportunities.

The overall programme proposal describes ecosystems that are essential for maintaining the resilience and adaptive capacity of landscapes to respond to shocks and climate change. These ecosystems, which provide water, food and climate stability, are under severe pressure in many places around the world. For local actors, often the most marginalised groups, climate change is an additional threat they have to cope with. The short-term interests of stakeholders are often at odds with a well-managed ecosystem, which has long-term benefits. The proposal recognises that capital allocation, corporate decision-

making processes and ecosystems management by public and private financial institutions rarely take into account major global challenges such as climate change and resource scarcity. Available assessments are rarely translated into practical approaches for and by decision-makers. In addition, the annual report states that, according to research by the International Institute for Environment and Development (IIED), only 10% of the funds from climate finance programmes reaches communities, while the impact of climate change is felt mainly at the local level. Here, international intermediaries contribute to a 'waste' of climate finance.

Mozambique's inception report presents a more rigorous and context-specific risk and vulnerability assessment linked to the management of the landscape. It describes droughts, floods, loss of biodiversity and forest fires as the main hazards. The climate scenario uses 40 peer-reviewed articles on climate change impacts in the Zambezi River Basin. It concludes that the Zambezi will experience drier and more prolonged drought periods, and more extreme floods. Several studies estimate that the Zambezi's runoff will decrease by 26%-40% by 2050. This has not yet been translated into an exposure assessment, but the plan is to undertake an analysis of the sensitivity to hydrological processes of key sectors in the Zambezi River Basin, such as rainfed agriculture, freshwater fisheries, hydropower, wildlife and water supply. The field visits and the final report provide evidence that local mapping of climate-related problems has been used to inform planning. Focus group discussions made it clear that local communities are experiencing challenges related to climate change, such as a decrease in production, perennial rivers that turn into seasonal streams and a shifting growing season. This knowledge is abundantly available. Near the Cahora Bassa Dam, the programme found that communities were resorting to maladaptive practices such as slash and burn agriculture, unsustainable fishing, and deforestation for charcoal production to compensate for the loss of income from rainfed agriculture.

Step 2 - Integration into programme design

Score: High

Strategy types: Social/behavioural, political/institutional, nature-based, knowledge, financial, technological and infrastructural.

Based on its climate assessments, and combined with local knowledge, SRJS designed various CCA strategies. The main strategy of SRJS is to create joint solutions for securing ecosystems and the IPGs they provide through L&A. Taking a demand-driven and flexible approach was convenient according to the final report, as it allowed for a response to the Paris Agreement, which was reached after the start of the programme. To secure IPGs, a balance between short-term and long-term social and economic interests was aimed for. The strategy for achieving this balance was to develop a strong civil society as a countervailing power to government and businesses interests. In Mozambique, the programme helped local CSO partners such as WWF Mozambique to focus on the Zambezi Delta. The choice for this area was based on the fact that it is highly vulnerable to climate change (inception report). The CCA strategies for this landscape are described below.

Social/behavioural: Changing the behaviour of communities, businesses and governments towards more sustainable practices in relation to IPGs is the overarching goal. This is to be achieved through the creation of multi-stakeholder partnerships and through all the other types of strategy described below.

Political/institutional: Through L&A, SRJS aims to change the policies and practices of companies and governments (proposal). In Mozambique, for instance, L&A activities were planned to influence the Strategic Environmental Impact Assessment for the Lower Zambezi (proposal). The government of Mozambique started implementing this process to address major economic developments and find more sustainable and climate-resilient development strategies. For SRJS, this process provides an opportunity to influence decision-making on major investments.

Nature-based: Protecting, restoring and enhancing ecosystems offers a climate-smart development perspective. The assumption is that the ecosystem function is a key ecological aspect of the landscape that needs strengthening to increase people's and nature's resilience to floods and droughts (inception report). Examples mentioned include:

- mangrove reforestation, which serves as a fish nursery and urban infrastructure protection;
- carbon sequestration methods;
- advocacy for better government policies and practices that integrate the value of natural capital;
- addressing infringements in national parks and reserves by the mining and agricultural sectors;
- improving multi-stakeholder management of forest reserves for climate resilience;
- integrating wetlands protection for water storage into land use plans;
- improving national-level ecosystem-based adaptation policies and implementation for restoring reserves with natural vegetation;
- improving river basin water management based on climate change impacts and ecosystem-based adaptation measures (proposal).
- specifically for Mozambique, WWF is integrating the Environmental Flow programme to conserve the mangroves in the Zambezi Delta (interviews).

Knowledge: The strategy of the SRJS is to strengthen the L&A capacity of implementing partners, so they can provide the right information to the right stakeholders. Cooperation with international and local knowledge institutes should strengthen the scientific and empirical base of programme interventions and monitoring activities (proposal). As mentioned in step one, the climate risk analyses remain general, but studies are anticipated in which climate change scenarios are translated into impact for business, livelihoods, nature and economic opportunities. The appraisal report confirms the planned context-

specific studies on the effects of climate change. Indeed, the evaluation, the annual report, the inception report and the field visit to Mozambique demonstrate that these analyses are being conducted. The Delft University of Technology carried out a review of climate studies in Mozambique. The results were inconclusive, so it was not possible to develop a strategy in advance. This is why the project implementation was planned in a flexible way, allowing for changes.

Financial: The financial sector was targeted because of the potential impact of their decisions on (climate) financing and investments on high-impact sectors (proposal). Therefore, CSOs are being trained on how to engage the financial sector (evaluation). Also, business cases were planned to be developed to ensure environmental and economic gains (proposal). To allow climate finance to flow to the local level, SRJS is involved in the spin-off project 'Mobilizing More 4 Climate' with the aim of facilitating efforts to identify potential business cases with positive climate impacts for funding and support.

Technological: In general terms, the proposal describes that there will be support for climate-resilient technologies, such as pest management methods to increase yield stability and early warning systems for local communities.

Infrastructure: The L&A will focus on infrastructure at the landscape level, specifically advocating for an adequate interconnected green infrastructure, which is protected and effectively managed to provide key ecosystem services (proposal).

Step 3 - Implementation

Score: Medium

The evaluation provides evidence that the programme started to implement the strategies described in step 2. However, it also concludes that implementation has been limited (hence the medium score). This was partly caused by the Covid-19 pandemic, which made travelling to communities impossible at the time. The following examples of implementation were noted:

Social/behavioural: The evaluation states that partnerships with different social layers and CSOs have been created, but it does not explain how this was done or provide an indication of the number of partnerships. Triangulation of the evaluation findings with the site visits, interviews and reports provided more information. It was clear that partnerships were provided with training, awareness raising, networking and learning exchange activities. Business actors and government officials were invited to join CSO meetings. Site visits to a remote community supported by the SRJS programme in Mozambique showed that alternative livelihood strategies were introduced, i.e. the establishment of a women's savings group, a sustainable fishing group and wood-saving stove groups. However, the process of legalising the fishing groups has been slow.

Political/Institutional: The evaluation provides many examples of L&A activities with (local) governments to mainstream CCA measures into existing plans, laws and rules. The programme has also been involved in the process of developing new climate resilience and climate adaptation plans. For instance, four municipal plans for CCN and CCA were developed in Paraguay and Bolivia that integrate climate scenarios, climate variability diagnosis and disaster management in policy planning.

Nature-based solutions: CSOs and communities were trained in fire prevention, reduction of deforestation and restoration of mangrove forests (evaluation and final report). The final report mentions, for instance, the restoration of 20 ha of mangrove forests in Indonesia. In Mozambique, the Environmental Flow Programme was developed and launched with the aim of ensuring a certain flow from the Cahora Bassa Dam to protect the mangroves and other vegetation in the Zambezi Delta. The programme also lobbied against the dredging of the Zambezi River to transport of mined resources. During site visits in Mozambique, strategies were encountered aiming to reduce deforestation, such as the introduction of fuel-efficient stoves.

Infrastructure: The evaluation mentions several examples of lobbying activities focusing on infrastructure such as roads and dams. Examples include lobbying the Ministry of Energy in Zambia to commit to a process of hydropower infrastructure planning, and lobbying policy in Paraguay to create the necessary water infrastructure. Upstream of the Zambezi River, SRJS advocated against the construction of a dam in Zambia, increasing water security in Mozambique.

Financial: A climate finance workshop was organised in the Netherlands for SRJS partner CSOs to strengthen their advocacy on access to climate financing for local ecosystem-based adaptation measures (final report). Site visits in Mozambique showed that several strategies were implemented to increase household income while integrating climate change issues. Women's saving groups were established to enable women to make relatively big investments. The programme provided small start-up grants to set up a small business. In addition, the fuel-efficient stove groups were expected to reduce cooking costs, which can increase household resilience.

Knowledge: The evaluation provides evidence that the programme was involved in the process of developing climate-resilience studies. Climate studies were also carried out by Naturalis and Deltares. Based on these studies, recommendations were developed to help mainstream climate adaptation into district development programmes. Most activities regarding knowledge sharing activities on accessing climate financing at the global level were cancelled due to the Covid-19 pandemic.

Technical: Innovative technologies introduced included drones and GIS tools, which were new to many CSOs and local governments in most countries. These technologies enabled local communities to plan agricultural activities in a more climate-smart way (evaluation and annual report). Together with stakeholders, locally-led climate-smart measures were developed, such as increased distribution of tree seedlings, planting of community forests and fuel-efficient stoves.

CCA scale score

Score: CCA Responsive

The programme is assessed to be responsive to climate change, as most of the strategies described in step 2 have been implemented.

Inclusion of marginalised groups

Score: High

The SRJS has a strong focus on inclusion in both planning and implementation. It uses a demand-driven approach from a local perspective with the aim of adjusting (adaptation) policies, laws and regulations according to the needs of marginalised groups. The proposal clearly describes that these groups are particularly vulnerable as they depend directly on the goods and services provided by ecosystems that are threatened by climate change. The programme aims to strengthen locally based CSOs as they can help protect nature and represent the interests of local groups (proposal). Their knowledge, insights, traditions and innovations can contribute to locally suitable sustainable practices. In addition, the proposal makes a clear assessment of the vulnerability of marginalised groups to the negative impacts of climate change. It highlights the vulnerability of women, in particular, such as their lack of access to adequate early warning information, education, training, and facilities to cope with disasters and climate change impacts.

The evaluation found evidence of numerous efforts to strengthen marginalised groups, in particular women, minorities, the elderly and youth. It found that through a bottom-up approach was used to consult communities, and women in particular, on the selection of issues to focus on. Nevertheless, it also concludes that gender equality and social inclusion need to be further strengthened as they require a shift in mentality and behaviour, which takes more time.

Alignment with domestic adaptation policies and ownership

Score: Not Applicable

The objective of the programme is to align with local CSOs and their members, not with government policy and institutions. It seeks to influence and change (adaptation) policies based on community needs and perspectives.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term - Medium to (possibly) high. Long term - Unknown

As the quality of the SRJS evaluation was assessed to be poor¹, no firm conclusions can be drawn on effectiveness of the CCA measures, hence the score '(possibly)'. However, the fieldwork provided an opportunity for triangulation.

In the short term, climate change awareness activities have been mainstreamed into L&A activities. This increased the capacity of CSOs to put solutions for increased resilience on the agenda of governments and businesses. The evaluation concludes that the L&A initiatives, partnerships and awareness-raising campaigns have resulted in a shift in thinking of many actors on the sustainable use of natural resources and more participatory governance systems. However, the adoption of practices in the communities is slow. The following short-term CCA results have been identified in policies and practices:

Social/behavioural: The programme has raised environmental awareness in the communities and provided them with alternative livelihood strategies. However, the evaluation concludes that the adoption of new practices is slow as communities do not seem to be convinced by them. These include climate-resilient practices such as climate-smart food production, reforestation hillsides and ecosystem connectivity. Concrete examples were found during the site visits around the reservoir of the Cahora Basa Dam. Communities had organised themselves in a wood-saving stove group to decrease deforestation, a women's savings group to empower women to invest in resilience and a sustainable fishing group to replace income from agriculture and assist the local government in controlling illegal fishing. Adoption of the wood-saving stoves was slow due to the high cost of a metal part in the stove, the progress of the savings group was frustrated by the Covid-19 pandemic, and only after years of motivating fishermen to use different nets (to avoid bycatch) did they see the fish population grow. From a broader perspective, the evaluation points out that communities are now taking the lead in nature conservation by, for instance, combating overfishing.

Political/institutional: Partnerships have been most effective at the local, district and provincial levels. There is evidence that local and district level multi-stakeholder processes have been replicated at the national and eco-regional levels. There is no evidence yet of the implementation of municipal plans for CCM and CCA. With regard to the EIA in the Lower Zambezi, the study was followed up with the Environmental Flow project (see infrastructure).

Nature-based: According to the final report, SRJS activities have contributed directly to 2,669,000 hectares of forest land being under improved sustainable forest management or other improved practices, with a positive impact on the resilience of 207,000 beneficiaries. More specifically, the percentage of tree cover brought under sustainable management was above

¹ See: <https://english.iob-evaluatie.nl/publications/reports/2023/04/15/effectiveness-support-to-lobby-and-advocacy>

20% in Ampasindava, Mekong Flooded Forest, Murchison Falls, Nakambe, Queen Elizabeth and Southern Palawan; between 10% and 20% in Aceh and Weto; between 5% and 10% in Cordillera; and below 5% in the remaining landscapes.

Knowledge: According to the evaluation, CSOs have gained the necessary skills and knowledge for L&A and for having fruitful partnerships with governments and companies. The capacity of communities to demand accountability from policy-makers was also strengthened. Climate resilience studies have been conducted and district-level climate adaptation plans have been developed and followed up, including evidence-based monitoring. An example is the incorporation of climate studies conducted by Naturalis and Deltares into Langsa city's spatial plan in Aceh (annual report).

A range of outcomes were documented in relation to *financial* strategies:

- The effectiveness of L&A work towards the private sector varied greatly across the countries and landscapes, as these outcomes depended on many factors. Where one or more local partners had the capacity to follow up, interventions did follow through. In other cases, an unfocused L&A agenda or lack of local CSO capacity on certain issues made follow-up less effective.
- With the help of SRJS lobbying, FMO prioritised climate adaptation and the landscape approach in its bid for and implementation of the Dutch Fund for Climate and Development (DFCD). Local SRJS partners also informed the development of the DFCD, including the need for the fund to prioritise adaptation and climate action in least-developed countries and to devote attention to local communities
- Local partners in Uganda and Mozambique started cooperating with the International Institute for Environment and Development to make climate financing more accessible for local-level CSOs. This resulted in the spin-off project 'Mobilising More 4 Climate' (evaluation). The final report claims that this resulted in improved access to climate financing for partners from Uganda and Mozambique.

Technological: The use of new technology supported the CSOs in their efforts to increase climate resilience. For instance, GIS tools proved helpful in effectively responding to crisis situations such as forest fires. In Uganda, there was evidence that training and awareness-raising led to the adoption of climate-resilient practices such as tree planting, energy-saving technologies (cooking stoves), and local governments opening up nursery beds for poor farmers to grow seedlings safely.

Infrastructure. Infrastructure has been the topic of several L&A activities with mixed results. In Mozambique, for example, WWF initiated a lobbying campaign for an environmental flow regime for the Zambeze River. This put the topic of preserving the river delta and its mangroves on the agenda, and it resulted in a multi-stakeholder platform. However, it has not yet resulted in a different discharge regime for the Cahora Basa Dam. Upstream on the Zambezi River, the SRJS (successfully) advocated against the construction of a dam in Zambia.

Looking at long-term effects, the evaluation claims that the continuation of outputs and outcomes beyond the life of the programme is likely, assuming stable funding in the future. However, the SRJS programme was unable to secure additional funding. There was also no evidence yet of any change in behaviour towards CCA (the next step after policy change), particularly by governments and businesses.

Underlying mechanisms, factors and conditions explaining effectiveness (evaluation)

- Increasing respect and legitimacy is essential for building partnerships and can be obtained through strengthened capacities and skills.
- To be effective in climate-resilient activities, the first step for CSOs is to gain the trust of local communities. This could be done by adopting a demand-driven and participatory approach, by building on local knowledge and by engaging key local actors who are trusted by local communities.
- Conflicts with the private sector can be reduced through multi-stakeholder processes, including local communities and the government.
- The demand-driven approach made activities relevant to the landscape challenges.
- Formal compliance and monitoring requirements were seen by several CSOs as burdensome, diverting their focus and taking time and resources away from a more hands-on approach to advocacy and engagement.
- The participation of CSOs with local knowledge and expertise helped to achieve a broader understanding of complex interactions at various levels.
- The evaluation provides evidence that the adoption of climate-resilient water management and food production practices is enhanced by showing how these new technologies work.
- If gender inclusion receives concrete attention at the local level during the planning stage, women are more empowered.
- Focusing on local communities is essential to achieving many of the outcomes and is key to the sustainability of the programme results.

12 Institutional Support to FIPAG (FIPAG)

Programme goal

According to the appraisal document, the goal of the second phase of support to FIPAG aims to increase the water supply coverage in 21 towns in Mozambique from 70% to more than 80%, reaching an additional 2 million people by 2019. This should be done by strengthening FIPAG's capacity to manage water supply and by creating conditions for its economic competitiveness (proposal).

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

While the analysis of the impact of climate change on FIPAG's operations remains very limited in the proposal and appraisal documents, interviews and site visits revealed that this knowledge is increasing, especially in the form of lessons learned after disasters. In addition, several conventional problems faced by FIPAG, such as low-quality and deteriorated infrastructure, low staff capacity, lack of knowledge, poor service provision and high levels of non-revenue water, climate change further reduces water availability. The proposal mentions floods that destroy intake installations, flooded water treatment plants, water pipes destroyed by erosion and water quality issues due to huge loads of sedimentation. Combined with demographic and economic growth, the high pressure on the water supply system is recognised (proposal). The appraisal report focuses on non-revenue water (leakage, theft) and mentions the same problems as the proposal, without explicitly linking them to climate change. Only after the occurrence of an extensive drought does an adjustment appraisal document mention the impact of drought on FIPAG's operations and argue for the need for additional funding.

In interviews with FIPAG staff, it was mentioned that FIPAG's institutional knowledge and financial capacity were insufficient to keep up with climate change. While interviewed employees from FIPAG were able to evaluate climate change risks for their drinking water system, this was mainly in relation to disasters that had already occurred, without systematically considering those that might occur in the future. For instance, while FIPAG in both Maputo and Beira considered the risk of cyclones, this did not appear to be the case for droughts. In Maputo, FIPAG employees mentioned droughts in their risk assessment because of a drought that occurred in 2016. In Beira this issue did not appear to be identified as a future possibility, as the pumps have been able to meet demand thus far. This observation is in line with the evaluation's finding that information sharing between various FIPAG departments is inadequate.

In relation to the disasters experienced, FIPAG did learn a lot about the risks involved for the continuation of the water supply after (cyclone, floods) or during (droughts) such an event. In Maputo, FIPAG employees mentioned that during the drought in 2016, the water level of the basin supplying drinking water to Maputo dropped to 13%. The water treatment plant was not designed for this, resulting in poor quality and limited supply. Water was restricted to domestic use only, cutting off agriculture and industry. Even potable water became scarce, and transport was used to reach people without access to drinking water, driving up the price. Boreholes were drilled to overcome the water shortage, both privately as well as by FIPAG. Climate change was also linked to damage to the pipes. As floods cause erosion and (near) exposure of the pipe system, the pipes are being damaged by heavy traffic.

An important aspect which was missing from the documentation, interviews and site visits was knowledge and research on surface and groundwater flows. In interviews with FIPAG employees, it was mentioned that water sources (both surface and groundwater) should be managed in an integrated way, but that there was not enough knowledge available on this issue within FIPAG. Also, these analyses could not be found in the documentation reviewed, although this is essential for sustainable and climate-resilient water abstraction. Furthermore, interviews confirm that the locations and volumes of boreholes are not determined by research and official monitoring systems, whereas FIPAG employees see groundwater replenishment and related management as essential. For instance, one of the meetings with FIPAG revealed that they are concerned that a stream near Maputo where water goes underground will be occupied, with the risk of blocking the groundwater inflow.

Step 2 - Integration into programme design

Score: Low

Strategy types: Knowledge, infrastructural

As there is limited analysis of climate change impacts, there is also little translation into specific CCA strategies. The main focus of the programme is on strengthening FIPAG's institutional capacity, which is not linked to CCA in the proposal. Another important part of the programme is the reduction of non-revenue water (NRW), which refers to technological, behavioural and infrastructural measures. Here, the proposal briefly links this strategy to CCA by stating that it reduces the need to extend water abstraction and boreholes for future water demands and contributes to the availability of natural resources for other activities. This may indeed be an important element for CCA. However, it is not part of an integrated CCA strategy. The proposal recognises this by stating that measures to avoid and mitigate climate-related risks still need to be developed during implementation, without further specification.

The most concrete strategy in the proposal is the planning of water availability studies that will also include IWRM aspects. Here, some information is provided on what type of issues in what contexts these studies will address and how the

information will be useful for CCA. Another concrete measure is described in the adjustment appraisal report, concerning additional infrastructure measures to mitigate the consequences of the 2015-2016 drought. The additional amount is earmarked for the connection of the Intaka distribution centre to the main water supply system of Greater Maputo as an emergency measure to mitigate the consequences of the drought.

Step 3 - Implementation

Score: Low

Due to limited analysis and design, there is little evidence of implementation of CCA measures. Also, the announced design of CCA measures during implementation could not be traced in the documentation. In general, the evaluation concludes that implementation is hampered by various design flaws, such as a high number and variety of activities in different technical and geographical areas and an absence of SMART indicators. On a positive note, the evaluation confirms that the water availability studies and the connection of the Intaka distribution centre have been carried out.

Interviews and site visits to FIPAG in Maputo and Beira confirmed this picture of limited implementation of specific CCA measures. This was particularly the case in Beira. Here, interviewees mentioned that training provided by VEI did not include climate change adaptation, and that no flood-proof equipment had been provided. Also, although FIPAG is involved in the Beira Master Plan (BMP) and climate-resilient solutions are available, interviews with FIPAG staff in Beira made it clear that these are insufficiently integrated. For instance, they mentioned that in the event of flooding, essential machinery could be raised or temporarily moved up. However, the current strategy is to turn off the machinery in the event of flooding.

CCA scale score

Score: blind to sensitive

Due to the limited analysis, design and implementation of CCA measures, FIPAG can be scored as CCA blind. However, it became clear from the interviews that there is an ongoing learning process, which shows that FIPAG is becoming more CCA sensitive. Events that occurred during implementation have raised awareness and forced FIPAG to take more action on climate change, but only in a reactive and, as yet, unsustainable manner.

Inclusion of marginalised groups

Score: unknown

The score is unknown as it remains difficult to assess to what extent marginalised groups have actually been reached by this programme. The design of the FIPAG programme aims to connect (urban) marginalised groups that do not have safe access to drinking water. Although this is not linked to CCA, it can be argued that having access to clean drinking water increases resilience, for instance by reducing the risk of disease after a disaster or by providing continued access during droughts. While the proposal aims for 2 million additional connections by 2019, the evaluation finds that it is impossible to link the activities of this programme to the achievement of this goal. It concludes that as an institutional support programme, the link between all the activities carried out under the programme and the additional number of people with a connection is very weak. A respondent at the embassy also commented that the number of new connections is not the right indicator to measure the success of this programme, which was confirmed by the evaluation. It was clear from the interviews and the evaluation that FIPAG is struggling to become economically viable while at the same time increasing the coverage of connections in vulnerable areas. According to the evaluation, only 70% of bills are actually collected. FIPAG has no means of recouping these losses, other than cutting off water supplies after three consecutive months of non-payment.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Low; Ownership: High

FIPAG is a state-owned company with a mandate to provide water to Mozambican cities. As such the ownership of the government of Mozambique over this programme is high. The evaluation of the FIPAG programme even states that the programme resembles budget support, which increases the ownership. At the same time, the evaluation concludes that this approach has undermined the extent to which the programme has ultimately promoted FIPAG's organisational development, due to a lack of programme logic and synergies between the different activities.

The programme is aligned with the National Development Strategy and the Poverty Reduction Action Plan, but no concrete links are made to CCA plans (proposal). Interviews revealed that FIPAG depends on collaboration with the National Directorate of Water Resources Management (DNGRH) for climate-resilient water abstraction. However, as coordination with DNGRH is limited, FIPAG employees experience that they have limited influence over this.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term – Low; Long term – Low

In the short term, there are some successful activities in response to extreme weather events, but the overall effectiveness is low. Activities to increase the number of water sources have helped some districts to overcome periods of drought or floods. For instance, improvements to the Zimpeto system allowed it to remain operational during and after the flooding of the Umbeluzi River (evaluation). Also, as an emergency response to a severe drought in the Greater Maputo area, 12 boreholes were equipped and 7 km of pipelines were constructed, reducing the shortfall in water production by around 11%. While elements of the institutional support to FIPAG were evaluated as positive, there was no specific institutional strengthening of CCA. The evaluation concludes that FIPAG has improved its management of water supply through improved NRW processes, including asset and financial management. However, overall water availability has not increased and water loss has not been reduced, mainly due to extreme weather events (droughts, floods and cyclones). Additionally, improved skills are not widely shared throughout the organisation, and successful pilot projects are not being continued or replicated in other FIPAG systems. The evaluation also concludes that it is nearly impossible for an institutional development programme to have an impact unless it is combined with additional investment. According to the evaluation, (significant) investment is required to keep pace with population growth and to deal with climatic aspects. Investment in repair, rehabilitation, expansion and improvement of infrastructure is already necessary merely to maintain service levels. Even more investment is needed to sustainably improve service levels.

The main issue for the long term is the lack of an overall plan for climate change adaptation. The fieldwork found that while knowledge on this issue is growing, it is still scattered. Increasing the number of water sources does not increase climate resilience. This requires an IWRM approach with hydro-geological analysis. Interviews and site visits made it clear that such an approach is lacking, partly because of the limited coordination with DNGRH.

13 Sustainable Agriculture, Food Security, and Linkages (SaFaL)

Programme goal

The overall goal of SaFaL-2 is to promote resilient livelihoods through improved food and nutrition security for smallholder farmers and landless workers in the delta region of Bangladesh. SaFaL has 4 interconnected result areas:

- Best practices: promotion of diversified, market-oriented, climate-smart and sustainable agriculture in the delta region of Bangladesh that optimises farmers' social, environmental and economic performance.
- Sustainable market development: addressing infrastructure, input, credit and market access through public and private sector collaboration.
- Food security: improving food and nutrition security resulting in overall physical and cognitive capacity of the poor and smallholders.
- Sustainable landscape: development of a sustainability framework to help adapt to and mitigate the negative effects of climate change to make the farming system of the delta region more resilient.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The project documents a comprehensive context-specific analysis and assessment of the increasing climate risks for households relying on agricultural activities. The region faces catastrophic impacts from cyclones, tidal surges and droughts, adversely affecting resilience in terms of increased poverty, decreased farm productivity and food security, and loss of employment and income. Changing precipitation patterns are already causing extensive damage to field crops and losses for aquaculture farmers. Other risks include ecological degradation, decreased soil fertility due to saline intrusion and reduced access to freshwater and drinking water. According to the climate projections of the IPPC and the World Meteorological Organization, the vulnerability of the coastal regions to flooding, storm surges and salinity will increase in this century.

Step 2 - Integration into programme design

Score: High

Strategy types: Social/behavioural, institutional, knowledge, technological, nature-based, financial

SaFaL uses a holistic approach to building resilience to climate change. This includes introducing climate-smart agricultural practices and the development and implementation of a climate-smart sustainability framework. The idea behind this framework is to create a multi-stakeholder platform to improve the adaptive capacities of farmers, while simultaneously increasing productivity and improving the food market system. The proposal and annual report mention the following strategies.

Technological & nature-based: To make farming communities more resilient, the project promotes eco-friendly and climate-smart agricultural techniques for soy, aquaculture, fruits and vegetables and dairy. Specifically, these include the development of crop calendars, the use of short-duration varieties, the use of saline resilient seeds, water use efficiency

measures and the use of bio-fertilisers to reduce water pollution. The crop calendar is designed to help farmers manage multiple agricultural processes, including harvesting times and protecting their crops from climate-related natural disasters. *Social/behavioural/knowledge*: Pilots, demonstration projects and lead farmers encourage the adoption of eco-friendly and climate-resilient farming practices.

Financial: Support should help farmers enter into new business ventures in the supply chain, which should result in higher incomes. This, in turn, is expected to enable farmers to invest and diversify, thereby increasing their resilience.

Knowledge: Information is provided on climate forecasts, cyclones and other potential external shocks (market or climate-related) that need to be considered in the production cycle. The programme monitors meteorological conditions itself (evaluation).

Political/institutional: The programme aims to establish a multi-stakeholder platform with the government, businesses and other local actors to promote the sustainability framework. This should stimulate the adoption of new agricultural practices at multiple levels (the sector, landscape, regional or national levels).

Step 3 - Implementation

Score: High

Strategy types: Social/behavioural, institutional, knowledge, technological, nature-based solutions, financial

The evaluation, combined with the field visits and interviews, shows that the strategies listed under step 2 have been well implemented. Through the developed multi-stakeholder platform and directly through the programme, farmers received training on climate-smart agriculture and inputs to increase production in the soy, fruit, vegetable, aquaculture and dairy sectors in a sustainable and climate-resilient way. By strategy type that is:

Technological: The crop calendar was introduced, including a mobile-based app. To increase the chances of a successful harvest, short-duration varieties, high-yielding and climate-resilient seed varieties, soil quality cards, water retention measures and biofertilisers were introduced. In saline areas, varieties of prawn and white fish were introduced. To increase water use efficiency and sustainability, community-led renovation of water management systems was carried out in four communities (evaluation, annual report and interviews). However, there is no sustainable water use system, based on water accounting, water use licencing and irrigation restrictions (interviews).

Social/behavioural/knowledge: Inputs were provided and awareness was raised among farmer households on good agricultural practices. Technical support was provided by Solidaridad and the Directorate of Agricultural Extension through farmer field schools, demonstration plots and collection centres (interviews). A total of 471 lead farmers were trained, who are providing technical support to producer group members. Field visits and on-site interviews at pilot plots confirmed the use of climate-smart agricultural practices.

Knowledge: Dissemination of information on climate forecasts is being facilitated among farming communities. With regard to salinity, soil analyses were conducted in order to determine the viability of crops (evaluation).

Institutional: 80 farming clusters and 1,531 producer groups were reached through the multi-stakeholder sustainability platform.

Financial: SaFaL business institutions and village supermarkets were established to increase access to markets for selling produce. Also, training was provided to prevent post-harvest losses.

Nature-based: The evaluation stresses the environmentally friendly approach of the programme, including the introduction of various types of environmentally friendly pest management techniques, such as the introduction of biofertilisers.

CCA scale score

Score: Responsive

The programme addresses the vulnerability of producers in specific actions and is therefore responsive to climate change. However, SaFaL focuses on crop production and income and does not address the root causes that make the farmers vulnerable, such as water resource management, salinisation, floods and infrastructure.

Inclusion of marginalised groups

Score: High

The final beneficiaries of SaFaL are subsistence and commercial smallholders in the climate-sensitive delta region of Bangladesh. Before the programme started, a comprehensive analysis was made of the situation of the targeted households, covering income, productivity, nutrition, market, access to inputs, and finance and value chains. One of the programme's objectives is to improve food and nutrition security for poor smallholders. So far, 500,000 people have been empowered by the programme. However, the evaluation identified the dilemma of whether SaFaL should continue to focus on marginal subsistence and semi-subsistence farmers, or whether it should focus more on entrepreneurial farmers to create sophisticated, self-managed value chains. The researchers conclude that a mix should continue.

With regard to gender equality, the programme has a strong focus on women empowerment through training on and engagement in income-generating activities. This was achieved above target. The evaluation concludes that there has been an increase in the number of women in decision-making positions at the farm cluster level.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: Medium

According to the evaluation, the Southwest Landscape Sustainability Framework developed by the programme is in line with the Bangladesh Delta Plan 2100. The programme has also taken into consideration the Bangladesh Perspective Plan and the policy for agricultural development to accelerate the process of transformation from the existing semi-subsistence farming to the commercialisation of agriculture, taking advantage of the market economy.

SaFaL is organised as a multi-stakeholder platform to build links between farmers and the government. One example is the involvement of the Directorate of Agricultural Extension, which organises farmer field schools. Ownership is scored medium, because Solidaridad involves the government through training and information sharing, but does not focus on enhancing and transferring ownership of programme interventions. For example, interviews revealed that the involvement of the Ministry of Water and the Bangladesh Water Board is marginal.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term - High, Long term - Unknown.

In the short term, the evaluation concludes that household incomes and production have increased, making them more resilient to shocks. The adoption of various good agricultural practices, including climate change adaptation measures, has increased considerably in all subsectors. Compared with the comparison group, the households scored higher on the food and nutrition resilience index, a score that ranks households based on their resilience. The area managed under good agricultural practices was larger than planned. The production of fish, shrimp, vegetables, soy and dairy products increased and post-harvest losses decreased. Farmers have increased the use of environmentally friendly pesticides in vegetable and fish farming; for instance they now use mahogany fruit to produce pesticides and lime and tea seed cake in aquaculture. This results in less pollution after a cyclone.

The evaluation states that the programme has contributed to the development of an equitable and sustainable agriculture and food supply system. However, this claim is not supported by evidence concerning the long-term impact of SaFaL, particularly as flooding and salinity are not directly addressed.

Underlying mechanisms, factors and conditions explaining effectiveness

- Through continuous follow-up and regular information dissemination among the farming clusters, the programme has proven to mitigate the significant challenges of water logging, excessive rainfall and other weather conditions.
- Migration from the rural coastal areas could be stemmed through interventions that prevent the loss of fertile land due to flooding.
- Women benefit most from the increased availability of crops, especially those grown in homestead gardens, as it is a widespread practice in Bangladesh for women to eat last.
- The evaluation found a correlation between the income, consumption and food and nutritional resilience (and dietary diversity). The treatment group was found to be more resilient than the comparison group.
- The adoption of good agricultural practices requires awareness-raising. Combined with a market access strategy, income can be increased, which in turn increases resilience to climate change.
- Collaboration with the Directorate of Agricultural Extension to train lead farmers helps to reach large numbers of beneficiaries and to target the right (influential) people.

14 Food Systems Project Dhaka

Programme goal

Urban development in Dhaka is leading to significant environmental degradation and numerous social issues such as unemployment, poverty, inadequate health-care services and poor sanitation. Rapid population growth and urbanisation are putting pressure on adjacent agricultural land, water bodies, forest areas and wetlands. The loss of arable land is a major concern for a country that has a history of high food insecurity. To address food insecurity in the Dhaka metropolitan area, the project focuses on generating data, tools and approaches that will support and enable food system stakeholders (producers and consumers, private and public), to improve the performance of food value chains in a long-term sustainable manner. The project focuses mainly on the enabling environment and the supply and consumer side of the value chain.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

The appraisal document mentions that the programme has climate relevance, but links this mainly to minimising the impact of human interventions on the environment, in terms of biodiversity loss, avoiding further depletion of water resources and environmental degradation. Floods and cyclones are mentioned in the appraisal document, without linking them to climate change.

Step 2 - Integration into programme design

Score: Low

Strategy types: knowledge, technology

There is no integrated approach to climate change adaptation. Several activities are mentioned, but they are not linked to an analysis of the impact of climate change. The proposal briefly mentions that the project aims to increase the productive engagement of poor women in climate-resilient agriculture and contribute to their empowerment and resilience. However, this is not further elaborated. Two research projects relevant to climate change adaptation are mentioned (on wheat and on trade-offs between climate change and agriculture). A dynamic GIS mapping tool is mentioned that should enable scenario building on the impact of natural disasters such as cyclones and floods on the Dhaka food system. Again, this is not explicitly linked to climate change.

Step 3 - Implementation

Score: Low

The MTR notes that the strategic studies for the GIS mapping are now largely complete. However, there is no mention of any link to climate change adaptation here or for any of the other strategies.

CCA scale score

Score: CCA blind

While elements of this programme can be very relevant for climate change adaptation, this does not become clear from the documentation.

Inclusion of marginalised groups

Score: Unknown

A gender strategy has been developed, but there is no information on its implementation. Indigenous groups are included in surveys on consumer behaviour, but it remains unclear how they are engaged.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Low; Ownership: Low

The MTR concludes that the project has been operating until now without the usual oversight and steering from key stakeholders, including the government of Bangladesh. It urges the establishment of a project steering committee to provide the planned oversight and to promote national ownership of the project. Overall, the programme does not establish any links with national adaptation policies. Furthermore, while the programme addresses several national food security priorities, there is limited alignment with national food security policies. In addition to the lack of government involvement, this is also due to the fragmented nature of Bangladesh's national food security policy, which is addressed in several policy documents and implemented by 16 ministries and 40 government departments.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

The MTR does not mention any links to climate change adaptation.

15 WASH SDG Programme

Programme goal

The NL WASH Programme aims to sustainably improve access to safe drinking water for at least 450,000 people, and also to improve access to and use of sanitation and improved hygiene behaviours for at least 2 million people. Three main outcomes are: (1) increased demand for improved WASH facilities and practices, (2) improved quality of service provision and (3) improved governance of the sector. While the programme operates in seven countries, this assessment only looks at the overall programme documents and at Bangladesh in particular.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The WASH SDG consortium presents a general climate vulnerability and resilience (CVR) analysis in its overall proposal, and more detailed analyses in the inception reports for each of the target countries. In particular, the consortium aims to reach marginalised populations in areas that are disproportionately affected by climate change. The overall analysis is that all target countries are expected to experience higher temperatures, leading to increased water demand, potentially resulting in water shortages and longer periods of reduced water flow and stagnant water. Water insecurity is further compounded by poor water management in recent decades, increased competition from other water users and degradation of water quality. Water insecurity can lead to higher prevalence of water-borne diseases, and higher temperatures can lead to changes in the distribution of major disease vectors. Also, changing rainfall patterns and rising sea levels will result in more frequent drought, flooding and changes in seasons.

The CVR analysis in the Bangladesh inception report documents the negative impact of frequent natural hazards such as cyclones, floods and droughts on access to WASH facilities. The assessment observes a significant increase in cyclone frequency and flooding in the districts (especially Patharghata and Kalaroa), which is expected to continue in the future. In recent years, water sources (tube wells, freshwater ponds) have been damaged during floods and waterlogging caused by heavy rainfall and poor drainage. This has significantly reduced the availability of freshwater. During and after cyclones, many people resort to drinking contaminated water for prolonged periods, increasing the likelihood of disease (e.g. cholera, dysentery, malaria). In addition, the resulting loss of privacy negatively impacts sanitation and bathing practices (especially for women and adolescent girls). A decrease in seasonal precipitation and an increase in temperature will also lead to a reduction in freshwater supplies (rivers and ponds), challenging communities' sanitation and hygiene practices. Rising sea levels increase the salinity of groundwater and surface water resources, which is reducing the availability of safe drinking water in Satkhira and Barguna.

Step 2 - Integration into programme design

Score: Medium

Strategy types: Nature-based, infrastructural, knowledge, technological, financial, political/institutional, behaviour

The overall programme proposal presents an integrated approach to climate change adaptation, which is further substantiated in inception reports for the various countries based on the findings of the CVR analysis. While this attention to the design of context-specific climate change adaptation strategies is a very good approach, in the case of Bangladesh it did not materialise. In the inception report, the strategies for Bangladesh remain rather abstract, making it difficult to see what measures will be taken and how they relate to the CVR analysis.

Overall, the programme works from a catchment/watershed perspective, acknowledging the links between different water uses (including WASH), the water cycle and related ecosystems and livelihoods. All available information on the effects of climate change on the local water cycle and other WASH-related issues will be used to ensure that WASH interventions are climate adaptive. Interventions will focus on no-regret measures (for example, raised latrines) and follow a no-harm principle: e.g. interventions will not negatively affect water availability (including groundwater availability) or water quality downstream, and will not pollute (for example, promoting ecosan). As current knowledge is insufficient to predict events in a specific location, the programme focuses on building the resilience of local management structures and the responsiveness of surrounding support structures. Despite much attention to the importance of designing context-specific climate change adaptation strategies, the strategies for Bangladesh remain rather abstract.

The overall programme proposal identifies the following strategies:

- *Nature-based*: From a sustainability perspective, working towards long-term resource availability (quality and quantity) by protecting and restoring water-related ecosystems.
- *Technological*: Introducing new paradigms and technical innovations. Promoting and ensuring the use of climate- and disaster-resilient sanitation and hygiene technologies. Employing technologies to locate water sources. Using the 3Rs in WASH (reduce, re-use and recycle), in particular in faecal sludge management and rain water harvesting.
- *Financial*: Developing new products and services for consumers at the bottom of the pyramid, taking into account the impact of climate change and the different needs and interests of women and men.
- *Knowledge*: Strengthening the capacity of relevant WASH and IWRM stakeholders (users, service providers, government) to assess the potential effects of climate change on water resources in relation to WASH services, to plan for adaptation, and to apply holistic programming and budgeting.
- *Political/institutional*: Promote effective policies, regulations and laws in WASH, including climate resilience and water security strategies. Introduce quality standards for WASH service providers, including environmental standards and climate resilience aspects. Where possible and relevant, standards will be incorporated into regulations.
- *Behaviour*: Create demand for climate-resilient technologies and promote climate-resilient behaviour. This will be done by strengthening the capacity of local organisations to implement contextualised behaviour change interventions in relation to the effects of climate change on the local water cycle and on other WASH-related issues.

The CVR analysis for Bangladesh proposes the following strategies:

- *Infrastructure*: Promote disaster-proof and climate-resilient infrastructure.
- *Knowledge*: Integrate awareness raising on the adverse effects of climate change on WASH and strengthen the capacity of local government institutions and communities to manage climate risks.
- *Knowledge/Financial*: Strengthen the capacity of WASH entrepreneurs to provide climate- and disaster-proof services and products.
- *Technological*: Promote disaster-proof and climate-resilient technologies.
- *Political/institutional*: Link the programme to ongoing climate change programmes for maximum leverage.
- *Social/Behavioural*: Create demand for investment in climate- and disaster-proof WASH services and products. Promote monitoring of water quality, water availability and water use by stakeholders.

Step 3 - Implementation

Score: Medium (partly unknown)

The overall MTR (conducted by the consortium itself) concludes that the WASH SDG consortium partners have understood the importance of considering climate change in programme implementation. However, from various documents (MTR, Bangladesh MTR, sustainability check country report Bangladesh, annual report) it remains difficult to grasp the actual scope of implementation of the different strategies mentioned in step 2. In particular, the reports concerning Bangladesh do not become very specific about what has been done in this area. The overall MTR mentions several examples of measures to reduce the climate vulnerability of WASH services. However, some of these examples (see list below) partly differ from the planned interventions, which makes it difficult to assess the level of implementation.

- *Political/institutional*: Investments were made in building the institutional and regulatory frameworks that ensure equity and continuity of services under different climate scenarios.
- *Nature-based*: A climate-resilient WASH pilot was implemented in both Uganda and Ethiopia. It addresses the issue of environmental sustainability of WASH services, including a catchment treatment approach in cooperation with local communities and the local government.
- *Knowledge/behaviour*: In Ethiopia, an IWRM training was provided to government water professionals and community members. Also, a social contract was signed with the community to protect the catchment area. The communities are now highly involved in the management of the catchment area, which is currently being restored.
- *Technology*: Affordable flood-proof sanitation technologies are implemented.
- *Financial*: Responsibilities under extreme (weather) events have been clarified in private sector contracts to share risks and incentivise the creation of buffers. Climate-smart public finance and investment was also promoted, including the redistribution of resources to the most vulnerable groups and places in order to be better prepared.
- *Social/Behaviour*: Timely emptying schedules were introduced to prevent septic tanks from overflowing during periods of high water levels.
- *Infrastructure*: Climate-smart wastewater treatment infrastructure was built, tailored to the organisational and financial capacity.

CCA scale score

Score: CCA responsive

As the MTR reports several concrete interventions, this programme is scored as CCA responsive. Overall, the programme has a good approach to integrating climate change adaptation, but lacks detail in implementation. An independent MTR, more systematic reporting on implementation and more concrete descriptions of strategies (e.g. in Bangladesh) would strengthen the approach.

Inclusion of marginalised groups

Score: Mixed

The programme has a strong gender and social inclusion approach, for which the MTR finds positive effects but also structural barriers. The programme proposal explicitly aims for a gender-sensitive and socially inclusive approach to WASH, including hard-to-reach households; the poorest of the poor and those living in remote or slum areas. As with the CVR analysis, each country programme did a gender and social inclusion (GESI) analysis to design context-specific strategies for including various marginalised groups (e.g. ethnic minorities, people living with a disability, elderly or poor people). Examples of such strategies include working with government officials on social inclusion, developing GESI action plans at the local, municipal and city levels, and addressing social stigma. The MTR finds positive effects at several levels, namely: a decrease in intra-household and inter-household/community marginalisation; an improvement in service levels for marginalised groups; a reduction in marginalisation in public administration; and an impact on legal and policy barriers and enablers. It also finds that many structural barriers remain, namely: entrenched restrictive social norms; lack of acknowledgement of intersectionality; ineffective implementation of policies and strategies on GESI; and a lack of ownership by local WASH authorities and limited participation of marginalised groups in sanitation development at the village level. As a result of these barriers, the lowest wealth quintile shows the least progress towards improved services compared with the other

wealth quintiles. In terms of intersectionality, the effect of climate change is mentioned, as women and other marginalised groups are more affected by the climate crises than others, particularly in relation to drinking water, but also to sanitation and hygiene.

Alignment with domestic adaptation policies and ownership

Score: Alignment: Medium; Ownership: High

While the score for local ownership of the programme is good, the link between WASH and climate change policies remains problematic. The programme was designed to promote locally driven change in selected geographical areas. It takes a holistic approach to system change in WASH governance at the sub-national level, including the market environment, government organisations and socio-cultural environment, and the checks and balances in this system. As such, it aims not only to align with national/local policies and governance structures, but to improve them. The MTR concludes that 10 out of 15 programmes are on track to achieve their goals. However, limited progress has been made in linking WASH and climate change policies. The MTR concludes that few of the (national) climate change policies include specific policies on WASH as they are buried among many competing priorities.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short-term – Mixed; Long-term: Unknown

While the programme succeeded in increasing access to basic water services in both urban and rural areas, people in the lowest wealth quintile have seen their access decline, particularly in terms of sustainable water supply. According to the MTR, this is mainly due to the effects of climate change, which hit this part of the population the hardest, and it proposes additional and tailored support. However, this conclusion was already part of the design of the programme, as the CVR and GESI analyses and the subsequent design and implementation of CCA and GESI strategies were meant to prevent such an outcome. The MTR does not explain why and how this (partly) failed; this would require more systematic M&E of CCA. Hence, also little is known about the long-term effectiveness.

16 Profitable Opportunities for Food Security (PROOFS)

Programme goal

The overall objective of the project was to improve food and nutrition security, and drinking water supply and sanitation for 80,000 base-of-the-pyramid households in northwest and southwest Bangladesh. This was to be achieved through market-based interventions in agriculture, water and sanitation. It is expected that the increased supply of nutritious foods and hygiene products will reach the targeted households, effectively reducing malnutrition.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

The appraisal document foresees a short write-up to be added to the project proposal clarifying interventions on aspects such as climate change adaptation. However, according to the evaluation, the programme was not designed with climate change in mind. Indeed, the PROOFS proposal does not contain a climate change adaptation assessment and only mentions climate change and environmental issues as part of the description of the context. The evaluation claims that the proposal for the next phase, PROOFS 2, has a stronger focus on climate change and building resilience.

Step 2 - Integration in programme design

Score: Low

Strategy types: None

The appraisal document and the programme proposal do not mention strategies related to CCA. The appraisal document mentions natural disasters as a potential risk, without presenting mitigating strategies. The evaluation also describes the lack of focus on climate change in the design of PROOFS. In general, PROOFS uses the concept of base-of-the-pyramid as its organising principle, which provides the rationale for linking up small and poor rural households to markets. The strategies used within this concept include organising farmers into groups, training them in business skills, introducing basic agro-processing activities and facilitating market linkages. The proposal mentions diversification of agricultural production as an expected outcome. While this could be useful for increasing resilience to climate change, this link is not made.

Step 3 - Implementation

Score: Medium

Strategy types: Knowledge, technological, financial, nature-based, political/institutional

Despite the absence of climate change adaptation strategies in the programme's plan, the evaluation documented the implementation of several climate change adaptation measures:

Knowledge: Training on climate-smart agriculture. Farm business planning sessions included consideration of the cropping calendar in relation to expected weather. Training was provided on climate-smart agricultural products. Farmers were supported to grow more varieties of cash crops. PROOFS farmers in the south were linked to other projects working on varietal adaptation and resilience to climate change.

Financial: A disaster risk reduction contingency fund was established, to be used in case of emergency.

Nature-based: An analysis of the implementation guidelines shows that the agricultural technologies supported by PROOFS were designed to minimise the environmental impact, which can be linked to CCA. These included the reduction of chemical pesticides, the use of bio-pesticides and bio-fertilisers, the use of pheromone traps, the reduction of post-harvest losses, more fuel-efficient engines, the use of water and solar power, and the use of water bio-filters.

CCA scale score

Score: blind/sensitive

As there was no analysis in step 1 and no design of CCA strategies in step 2, the programme scores CCA blind. However, as the implementation did integrate strategies to increase resilience to climate change, the CCA scale score is also sensitive. The lack of analysis makes it difficult to assess whether these are the right strategies.

Inclusion of marginalised groups

Score: Medium

PROOFS uses the base-of-the-pyramid concept to provide a rationale for linking up poor rural households to markets. It explores how suitable and affordable products can help overcome poverty and improve food security. The final report claims that PROOFS households are showing steady improvements in both income and poverty status, with a decrease from 19% to 2% living below the poverty line. However, the evaluation found that the focus on poverty was less than implied in the proposal. The market-based approach succeeded in establishing the services needed in many of the targeted communities, but this approach was unable to tackle 'public good' components such as advice on soil fertility management. The evaluation also states that the proposal for the second phase of the programme is going to target a poorer target group, implying that the current target group is not the base of the pyramid. This claim is confirmed by project partners who told the evaluators that PROOFS does not work with the extreme poor, but with those just above them.

The programme is gender sensitive and aims to empower women economically by removing barriers to women's access to markets. The final report claims that employment opportunities have been created, particularly for women. The evaluation states that there was a clear impact on gender equality. However, it also states that according to programme staff gender had not been a specific focus of PROOFS. For instance, they had not received gender training.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: Low

The programme is aligned with the Country Investment Plan for Agriculture and contributes to several sub-programmes of this policy plan (appraisal document). The sub-programme on sustainable and diversified agriculture through integrated research and extension could be linked to climate change adaptation. The evaluation points out the coherence of PROOFS with the 7th Five Year Plan, which supports, among other things, the use of environmentally friendly green technologies and climate-smart/resilient technologies. The evaluation also found that PROOFS has contributed to several of the policy priority areas listed in the National Agriculture Policy 2013, of which adaptation is one of the priority areas. In terms of government ownership, the programme scores low, as the evaluation concludes that the link with public providers of agricultural extension and training services is relatively weak. Rather than strengthening government services, the programme tends to complement them. The evaluation identifies this lack of cooperation with the government as a blind spot in the programme.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term – Medium; Long term - Unknown

The PROOFS programme is a good example of a programme with a learning curve on CCA. While little was found in terms of analysis and design, the evaluation found that PROOFS has worked to increase resilience to climate change. It concludes that this was achieved through income diversification, a wider cropping calendar, more options to sell crops, increased income-earning opportunities for women, and improved health and nutritional status. Productivity increased by at least by 20% for 83% of the households, and cropping intensities of >1.5 were achieved by more than 50% of the households. Nevertheless, the evaluation also finds that these results were not sufficiently achieved among the most marginalised groups (the base of the pyramid), which was the focus of the programme. In the long term, the evaluation concludes that there is no evidence that the target group has become resilient enough to overcome climate change-related weather events.

17 Blue Gold Programme

Programme goal

The overall objective is to reduce poverty for 150,000 households living on 160,000 ha of selected coastal polders by creating a healthy living environment and promoting sustainable socio-economic development through four components:

- Protecting communities and their land located in polders against river and sea flooding and optimising the use of water resources for their productive sectors.
- Organising communities in cooperatives that will become the driving force of development based on natural resources (agriculture, fisheries and livestock), effectively addressing cross-cutting issues such as the environment, gender and good governance.
- Increasing the household income derived from the productive sectors.
- Strengthening the institutional framework for the sustainable development of water resources and related development services.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The Blue Gold programme clearly identifies climate change as one of the main challenges for water resources and the productive sectors. In the polders, freshwater is scarce, and many of the existing embankments built in 1960s and 70s are heavily damaged due to poor maintenance and recent cyclones. Climate change adds a new dimension to existing risks and vulnerabilities. The inception report provides a detailed analysis, including the lessons learned over the past years. Reference is made to the Bangladesh Climate Change Strategy and Action Plan and the National Adaptation Programme of Action, both of which analyse and recognise the effects of climate change. These includes increased flooding, moisture stress, salinity intrusion and sedimentation. Specifically, the inception report identifies the following risks for the polders of southwest Bangladesh:

- Rising sea and high-tide levels, resulting in inundation of coastal plains, tidal blockage and subsequent drainage congestion and water logging inside the polders.
- Strong winds and high waves causing overtopping and erosion of embankments and subsequent flooding inside the polders.
- Frequent cyclones and tidal surges that damage water infrastructure, crops and properties, sometimes endangering human and animal life.
- Increased salinity in estuaries that destroys soil structure and hampers crop production.
- Increased siltation in the estuaries due to the pushing back of the high tidal prism, resulting in reduced drainage/flow capacity of the estuary rivers, which in turn impede drainage of the internal canals.
- Increased drought and/or excessive rainfall, causing water stress and/or flood damage to crops.
- Environmental problems that affect human and animal health.
- Natural disasters disrupt markets, and in their aftermath relief programmes often ignore market forces and disrupt private sector actors, thereby exacerbating the problems of markets, market infrastructure and market relations.

Step 2 - Integration into programme design

Score: High

Strategy types: Infrastructural, technological, social/behavioural, knowledge, political/institutional, financial, nature-based
Based on the analysis in step 1, climate change adaptation and disaster risk reduction (DRR) are mainstreamed into the activities of the four components of Blue Gold described under 'programme goal'. The main strategy is to organise communities into cooperatives to initiate natural resource-based development (agriculture, fisheries and livestock), while taking into account the environment, gender equality and good governance. Specifically, the inception report mentions the following strategies.

Political/Institutional: The strengthening of existing and formation of new water management groups (WMGs) that will be given responsibility for water operation and maintenance of infrastructure in collaboration with the Bangladesh Water Development Board (BWDB). High-quality technical rehabilitation and strict operation and maintenance of water management infrastructure will be ensured to increase the resilience to high tides and possible overtopping. In addition, a DRR framework will be developed consisting of: (1) risk assessment, (2) education and awareness raising (for the WMGs), (3) risk reduction in key sectors (solutions to water logging, salinity and drainage problems), and (4) disaster preparedness and response.

Social/behavioural: The formation of water management groups requires social and behavioural changes through a process of community mobilisation. Community-based adaptation (CBA) is used to integrate CCA into the programme. CBA is a bottom-up approach in which the community is the main agent for implementing local adaptive measures. Blue Gold will provide training to build the knowledge and technical capacity of the community to implement CBA activities. Landless workers will be contracted to do at least 50% of the earthworks. Other strategies address social safeguard issues arising from

the raising of the embankment crest and subsequent widening of the embankment base (land acquisition and compensation), and the promotion of disaster resilient structures, such as strengthening weak sections of houses.

Infrastructure: Construction/reconstruction and raising of embankments, sluices, regulators, drainage outlets and irrigation inlets, (re-) excavation of canals and construction of low compartmental dykes for efficient on-farm water management. The inception report contains a major disclaimer that for new rehabilitated polders, raising the crest level of the embankments and increasing the size/vantage of sluices will increase the polder rehabilitation cost far beyond the present limit.

Knowledge: The Farmer Field School approach will be used to offer a wide range of learning opportunities to the WMGs. This approach consists of training 'representative' lead farmers who will then train other farmers. Furthermore, research is planned on a range of issues, including siltation in the polders, hydro-morphology and water modelling, the use of pumps for the removal of drainage congestion, and the development of efficient irrigation and soilless agriculture systems. The programme also aims to use lessons learned from other programmes.

Technological: New technologies are introduced to increase crop, fish and livestock production, such as the introduction of salt-tolerant crop varieties, post-harvest techniques, irrigation techniques and farm mechanisation. Innovative ideas are required to overcome issues such as water shortages and salinity in the dry season and should be tested in the field. These include hydro and solar pumps for drainage, agricultural machinery, soilless systems, innovative bank protection works, dredging system technologies, the use of remote sensing and smart dyke sensor technology.

Financial: Given that a major part of the target population is facing food insecurity and a minority is market oriented, Blue Gold will cater to both by developing diverse end-market value chains while avoiding market distortions. This means improving smallholders' access to markets for several newly introduced crops to increase their incomes. Collective action should result in producer groups sharing investment and processing costs.

Nature-based: By promoting the adoption of good environmental practices, raising environmental awareness and strengthening capacity, environmental degradation should be reduced. To this end, a sustainable environmental management plan will be developed, focusing on tree planting with greater emphasis on indigenous fruit and timber trees, the use of balanced doses of chemical fertilisers, and the preparation and use of organic fertilisers.

Step 3 - Implementation

Score: Medium

The final report, site visits and interviews showed that while most strategies in step 2 have been implemented (with some delay), attention for long-term CCA was less pronounced during implementation, raising doubts about sustainability. The basis of the programme was the formation of the water management groups, which succeeded in all polders. Through these groups, new crops and water management techniques were introduced to increase freshwater availability. There were some delays due to the large scope of the programme in general, and Covid-19 in particular. Nevertheless, 800,000 beneficiaries were reached, organised in 509 WMGs in 22 polders (final report). This successful implementation was largely due to the extensive support provided by the programme implementers. At the same time, this extensive support led to doubts about sustainability, as the WMGs were not strong enough to manage themselves when the programme ended. Respondents mention a strong focus on current practices rather than long-term CCA, the absence of a good exit strategy and the need for continued support. For instance, canals were dredged once or twice by the programme, but there was no consensus on who should pay for it in the future. Canals were already silted up by the time the site visits took place in 2021. The same is true for the rehabilitated embankments. Site visits showed that solid and sustainable embankment improvements are too costly to be covered by Blue Gold. In addition, the WMGs are registered and operational, but the mandate and responsibilities are not fully agreed on and formalised. This creates the risk that other institutional layers (BWDB, DAE, local government) will not take their responsibilities for supporting farmers and infrastructure. Furthermore, there was little evidence of implementation of the CBA strategy, as confirmed by a respondent at the embassy who stated that the programme had done little to support farmers in adaptation strategies.

CCA scale score

Score: Responsive

The Blue Gold programme is responsive in its design, with climate change adaptation approaches fully integrated into the different components and, to some extent, into its implementation. While the programme has transformative potential, the lack of a long-term focus and doubts about the sustainability of the interventions undermine this potential.

Inclusion of marginalised groups

Score: High

The Blue Gold Programme focuses on poor and vulnerable households living in the polders of southwest Bangladesh. An impact evaluation carried out in 2017 confirms that this target group was reached with the formation of the WMGs. Since this evaluation, the Blue Gold programme has continued with these WMGs. As there is no new independent evaluation, information on more recent involvement of marginalised groups relies on the programme's final report, combined with IOB site visits. Through the formation of water management groups, Blue Gold is implementing an inclusive approach. The WMGs are a bottom-up institutional system in which all people in a polder have a say. Especially in collaboration with the DAE, farmers are motivated to come up with their own ideas, as confirmed by interviewees. For instance, the idea of

multiple cropping seasons with one or two rice crops came from the farmers and was adopted by the programme. The final report claims that landless people are included through Landless Contracting Societies, and that 50% of the earthworks (canals, embankments) was done by this group. IOB site visits confirmed the involvement of landless people, without being able to confirm the 50% figure. There are doubts, however, about sustainability. Thus far, the WMGs have not demonstrated a robust income generation system to continue employing landless people for construction/rehabilitation work after the programme ends. Interviewees stressed that many WMG members are too poor to pay fees.

The programme was designed with a strong gender perspective, recognising that the impacts of climate change and other natural disasters often weigh heaviest on women and children, as they lack means to cope. Blue Gold's final report notes that 43% of the WMG members are women. It claims that homestead-based food production and construction work has increased employment opportunities (agricultural wage labour), especially for women from landless households. It also claims that the programme has improved the status and position of women. IOB interviews with women in the polders showed that they particularly appreciated the homestead-based food production as it provided them with greater food security. They also indicated that these activities were of direct benefit to them as many men migrate to the city for work.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: Medium

The Blue Gold Programme's alignment with national policies is high. It is mainly linked to the overarching long-term Bangladesh Delta Plan 2100, which presents an integrated vision and approach for land and water resource management for addressing the expected impacts of climate change. Other, more specific policy documents that Blue Gold links to include the Bangladesh Climate Change Strategy and Action Plan, the National Adaptation Plan of Action and the Plan for Disaster Management. Alignment was also high as Blue Gold was designed and implemented in close cooperation with governmental bodies. As the government of Bangladesh requires all development activities to mainstream DRR and CCA, a government DRR expert helped to provide and mobilise the knowledge, skills and resources required for mainstreaming both into the activities of Blue Gold (inception report).

Close cooperation with various governmental organisations was also good for ownership. These included the Directorate of Agricultural Extension (DAE) for the training of farmers through Farmers Field Schools, the Bangladesh Water Development Board (BWDB) for construction and irrigation works, and the Local Government Engineering Department (LGED), among others, for the registration of water management groups. Blue Gold promoted ownership of water management in the polders mainly by establishing and strengthening the WMGs and linking them to the BWDB for water management processes and the DAE for agricultural aspects. The DAE was able to take this ownership due to a strong and trusted embedded network in the polders and high staff capacity. However, interviews revealed that the BWDB lacked the financial and human capacity to take ownership of maintenance and to be a reliable link between the WMGs and the Ministry of Water. Interviews also revealed that the programme did too little to strengthen the capacity of the BWDB. The programme implementer took over many responsibilities during the implementation phase but underestimated the BWDB's weak capacity to take over after the conclusion of the programme.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short-term: High; long-term: Low

As there is no recent evaluation of the Blue Gold programme, information from the final report of the programme has been triangulated with site visits and interviews. This reveals that the participatory approach to water management through the WMGs increases resilience to climate change in the short term, as the WMGs organise water management and maintenance of water infrastructure. However, revenue generation and responsibilities for maintenance and investment still need to be institutionalised. If programme support ceases, there is a high risk that the WMGs, and consequently the infrastructure they manage, will deteriorate. The final report claims that improvements have been made in the following areas, which have been triangulated with site visits and interviews:

- WMGs have been developed, formalised and trained in their responsibilities. The impact study concludes that the functioning of the WMGs has improved more in the programme areas than in the control area, and the interviews made it clear that the WMGs function well within their capabilities. However, not all responsibilities are agreed on, let alone formalised. The WMGs depend on the BWDB for major maintenance, and during the site visits there were complaints about overdue maintenance.
- By improving infrastructure, the Blue Gold Programme has increased protection against flooding and salinity intrusion. This creates a better environment for the production of fruit and vegetables. However, interviews and site visits revealed that these are not long-term solutions as the most durable materials and techniques have not been used. For instance, farmers preferred composite sluice gates, but iron gates were installed, which are far less sustainable than those proposed. Also, raising embankments is necessary for future climate change resilience, but this was too expensive.
- The impact study found that drainage congestion and water logging had improved. According to interviewees, this was only the case immediately after completion, but within three years the drainage canals had completely silted up, as dredging the canals is beyond the (financial) means of the WMGs. In addition, farmers themselves build

mud dams in the canals, which exacerbates the drainage problems (impact study and interviews). In one polder, IOB found that the wrong drainage structures (culverts) were being used, leading to water logging.

- The Blue Gold programme improved agricultural production through better land use, including switching from local varieties to high-yielding varieties, diversifying crop types and increasing cropping intensity. Interviews showed that farmers were very positive about these interventions. There are also indications of increased income due to this increased productivity. The Ministry of Agriculture reported an average 25% increase of income per household in the polders that were supported by Blue Gold.
- To promote climate resilience in the long term, the programme needs to take a broader scope and go beyond in-polder water management. For instance, in some polders, the internal water management depends on the state of the border rivers, which is beyond the responsibility of the WMGs. Sedimentation of the rivers causes drainage problems in the polders, resulting in water logging, with serious consequences for crop production. Site visits confirmed this problem and also found that respondents linked this sedimentation to climate change, even though this link is uncertain.

18 Development Related Infrastructure Facility (ORIO)

Programme goal

ORIO aims to promote inclusive economic growth in developing countries through infrastructure projects involving international businesses.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: Low

There is no assessment of climate change scenarios and vulnerability at programme level. A distinction is made between programme level and project level. At the project level, applicants are required to include an environmental impact assessment, but CCA analyses are not required. While the environment and operation and maintenance are both seen as an important factor for sustainability, these aspects are not linked to climate change.

Step 2 - Integration into programme design

Score: Low

Strategy types: None

The evaluation elaborates on the assumption that the provision of adequate public infrastructure services is an important determinant of sustainable economic and human development, but does not link this to climate change as a risk factor for development. The appraisal document mentions a framework for assessing social and environmental impacts, but this framework does not include criteria for assessing climate change risks. The evaluation confirms the validity of the environmental impact assessments, but does not mention climate change adaptation factors. Furthermore, the evaluation states that these social and environmental impact criteria were given less weight than, for example, economic development.

Step 3 - Implementation

Score: Low

Strategy types: Technological, (probably) infrastructural

According to the evaluation, the programme paid great attention to the sustainability of the infrastructure projects it supported. This included aspects of technical, institutional, financial, and social and environmental sustainability. However, this is not elaborated on, and a link to climate change adaptation is hardly made. Only one case study (Niger River) included a satellite-based early warning system for extreme flood events. It is possible that other ORIO projects are implementing climate adaptation measures, but this was not mentioned in the evaluation.

CCA scale score

Score: CCA blind

Except for one example, there was no evidence of attention to CCA in both the design and implementation of the programme. To improve this situation, the requirement for a CCA analysis could be linked to the mandatory environmental and social impact assessment for each project.

Inclusion of marginalised groups

Score: Low

Compared to its previous phase (ORET), ORIO has changed its terms to reach more low-income countries. The ORET programme struggled to attract Dutch companies to develop projects in low-income countries (appraisal document). The

ORIO evaluation shows that 42 out of 73 projects were implemented in low-income countries. However, there is little direct evidence that the most marginalised groups benefited, let alone that this group became more resilient. Only general assumptions that improved infrastructure could benefit the poor are described (evaluation).

Alignment with domestic adaptation policies and ownership

Score: Alignment: Low; Ownership: High

The evaluation does not make a link to the domestic climate change adaptation needs. The evaluation gives some examples of alignment with local public institutions and their policies, but this is not linked to climate change adaptation. Government ownership of the ORIO programme is high. It is a government-to-government programme, implying that the government of the recipient country identifies the needs and the activities to address these needs prior to the application. The executing party from the recipient country could be one of the national ministries, a local government or an independent institution owned by the government. The national government could, and in many cases did, seek external support to prepare the application and to support and guide the application process.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Unknown

The evaluation does not mention the adaptation of infrastructure to climate change, nor how ORIO contributes to reducing exposure and vulnerability. The evaluation is quite positive about the assessment process, which includes an environmental and social impact assessment. However, the evaluation only makes some indications and assumptions that (environmental) sustainability will be achieved, but without providing strong evidence.

19 Southwest Area Integrated Water Resources Planning and Management Project (Southwest)

Programme goal

The impact goals of the second phase of Southwest are enhanced economic growth and reduced poverty in the rural areas of the selected districts in the southwest area of Bangladesh. The outcome goals are enhanced productivity and sustainability of existing flood control, drainage and irrigation systems. This, in turn, should contribute to improved incomes and livelihood standards for disadvantaged groups, including women. The project is expected to have an impact beyond the specific project areas, through improved systems for flood control, drainage and irrigation. It even aims to have a national impact in Bangladesh by strengthening the capacity of line agencies and promoting the participatory water management approach.

Step 1 - Risk assessment (climate change, exposure, vulnerability/resilience)

Score: High

The appraisal document recognises the urgency of strengthening protection against water and climate-related disasters in selected polders and chars in the coastal zone of Bangladesh. Without proper and regular operation and maintenance, infrastructure will deteriorate and water management groups will cease to function properly, increasing exposure and reducing adaptive capacity. The appraisal document describes how weak institutions such as the BWDB are unable to address these issues on their own. It presents an analysis of the problems encountered in the southwest area, including (1) severe flooding that inundates at least 22% of the country annually, which could go up to two-thirds; (2) changes in river courses due to erosion and sedimentation; (3) limited water during the dry season (less than 5% of monsoon flow); (4) saline intrusion; (5) cyclones and tidal surges in the coastal areas; and (6) widespread arsenic contamination of groundwater. Water management is further complicated by the diverse and sometimes competing interests of different water users (e.g. agriculture, fisheries, shipping sector, industry and drinking water suppliers). Water is also essential for the conservation of the country's vulnerable natural ecosystems.

Step 2 - Integration into programme design

Score: High

Strategy types: Infrastructural, institutional, social/behavioural, financial, technological, knowledge.

To improve resilience to climate-related disasters in selected polders and chars, the programme addresses constraints on agriculture, fishery and livelihood development. Its strategy is to do this through holistic and participatory planning, the development of WMGs and the delivery of support services (appraisal document). Specific strategies for increased resilience to climate change include:

Infrastructural: Restoration and construction of infrastructural facilities such as gated water retention structures, flood embankments, re-excavation of drainage and/or irrigation canals, and local riverbank protection works (aide memoire loan review mission ADB, 2018). Furthermore, a subunit implementation plan will be developed, including specific requirements for the renovation or construction of water management infrastructure (appraisal document).

Behavioural: Community-based strategic planning is supported in order to improve water allocation and operation and maintenance services (appraisal document).

Institutional/behavioural: Past experience in numerous projects has shown that the government cannot provide sufficient funds for the continued operation and maintenance of water infrastructure, resulting in severe underperformance. To solve this problem, local communities are mobilised in WMGs which take responsibility for the routine maintenance of water management infrastructure. The goal is to enrol > 70% of the farming population in these WMGs (appraisal document).

Financial: The agricultural support includes a component on financial empowerment. This consists of financial support to WMG members and promoting market linkages for selling their produce and buying necessary inputs. Furthermore, farmers are trained to increase their production of crops and fish for increased and diversified income, which will make households more resilient (appraisal document).

Knowledge: Farmers receive support in operation and maintenance practices and are trained in more sustainable, climate-resilient and production-enhancing practices through farmer field schools (extension memo). Furthermore, the capacity of government agencies at various levels will be strengthened, namely the Bangladesh Water Development Board (BWDB) and the Department of Agricultural Extension (DAE). Their transparency and accountability will also be improved. This is necessary for managing and monitoring the registration of WMGs and for coordinating service delivery from the departments (appraisal document).

Technological: The programme aims to improve water management techniques such as irrigation practices (water allocation turns, pumping, water saving techniques). Also, the programme will introduce a management information system to monitor the performance of the WMGs (annual report 2022).

Step 3 - Implementation

Score: High

The implementation of the adaptation strategies is considered to be on track following some delays. Difficulties in recruiting consultants for the institutional strengthening and project management resulted in delays in the preparation and implementation of the Integrated Water Management Plans. Also, Covid-19 played an important role in the delay. This resulted in a budget neutral extension of 12 months. Nevertheless, most of the planned strategies were implemented. The number of registered WMGs increased from 150 to 273. The WMGs established during the first phase of the programme were re-registered under a new law. Joint management committees were formed to improve links with other levels of government (mainly ministries). Civil works packages were developed based on stakeholder demands and studies. Rehabilitation and construction works have started with canal excavation, replacement of regulators, pipe and water control constructions, and re-sectioning of embankments. Climate change awareness training was provided, including environmental protection training programmes. In addition to civil works studies, knowledge was increased through socio-economic surveys and through performance assessments and feasibility studies for programme expansion. The management information system database was implemented to monitor the performance of the WMGs. Nature-based strategies were also used during implementation. In the southwest, tree planting was started along embankments and fish sanctuaries were introduced. The Blue Gold impact study mentions that the Southwest programme introduced collective action plans for developing income-generating activities. Additional funding has been allocated to extend the successful experience of the project to nearby geographical areas to improve the productivity and sustainability of nine underperforming flood control and drainage/irrigation schemes.

CCA scale score

Score: Responsive

The Southwest programme presents a climate risk analysis, based on which it designed and implemented adaptation measures to increase resilience to climate change, hence the score of responsive. However, there are some doubts about the long-term sustainability of programme results (see effectiveness below).

Inclusion of marginalised groups

Score: High

The programme has a clear pro-poor and gender equality focus, including poor households in polders that are highly vulnerable to climate change. By forming WMGs, they are capable of managing water allocation and availability and protecting themselves against floods. Prior to the programme, farmers cultivated and irrigated individually and had little capacity. The programme has clearly contributed to the development of the polders (site visits).

Gender mainstreaming training was provided to project officers to ensure that gender was mainstreamed in all aspects of the programme. In addition, the programme supported skills development for WMGs on water use efficiency and to ensure that all gender and social inclusion aspects of water resource management were addressed (aide memoire loan review

mission ADB, 2018). The aide memoire mentions that the target of 33% women as senior and community mobilisers was reduced to 15% due to the reality on the ground that the field work is challenging for women, and due to the unavailability of female candidates with the required qualifications at the local level. Nevertheless, 38% (1,150/3,104) of the elected members of the executive committees of the WMGs were women. During interviews and FGDs, it became clear that the women were involved and were able to speak up and share their knowledge.

Alignment with domestic adaptation policies and ownership

Score: Alignment: High; Ownership: Medium

Several government departments are involved in the programme to embed the participatory water management approach, in particular the formation and functioning of the WMGs, in their policies and practices, thereby promoting local ownership. To this end, the capacity of the BWDB at the national level is strengthened to improve (i) efficient coordination with the DAE and the Department of Fisheries; (ii) the management and monitoring of WMG activities; and (iii) performance monitoring and operation and maintenance of water management infrastructure. However, as also noted under Blue Gold, the site visits revealed that the BWDB still lacks financial and human capacity, which threatens the sustainability of the interventions if technical assistance is discontinued at the end of the programme in 2023.

Level of effectiveness (exposure, capacity to absorb, adapt, transform, sustainability)

Score: Short term - High; Long term - Low

Although the Southwest programme has not been evaluated since the impact evaluation of 2017, several sources can be triangulated to assess the effectiveness of the programme's CCA interventions. The 2017 IOB evaluation of the Dutch food security programme in Bangladesh (hereafter 'evaluation') reviewed the Southwest programme, an ADB mission published an aide memoire on the programme in 2018, and the programme was included in the site visits (2022). The aide memoire confirms that the impact of the project has been to enhance economic growth and reduce poverty in rural areas of the selected districts in the southwest area of Bangladesh. The evaluation and site visits found that water availability in the polders has increased and become more secure through the formation of WMGs and (re-)construction works. This, in turn, increased crop and fish production, enhancing the resilience of WMG members, at least in the short term.

However, as with the Blue Gold programme, the financial, human and organisational capacity of the WMGs and the BWDB is insufficient to maintain the infrastructure. During the implementation phase, the water availability and protection against floods and saline water already appeared to be declining. Excavation and maintenance of irrigation canals has been sporadic, in some cases for as long as five years. Canals that are not regularly maintained silt up, resulting in reduced water availability. WMG members interviewed said they do not have the resources to carry out proper maintenance and that this is the responsibility of the BWDB. The Aide Memoire reiterates the need for adequate staffing of the BWDB and their field units to support the newly formed WMGs in the operation and maintenance of project interventions. In addition, the evaluation provides evidence that the management (ownership) of the irrigation and drainage canals falls under the responsibility of the BWDB. In order to remain resilient in the long term, the BWDB should have sufficient capacity to manage and carry out operation and maintenance activities.

