KfW Development Bank

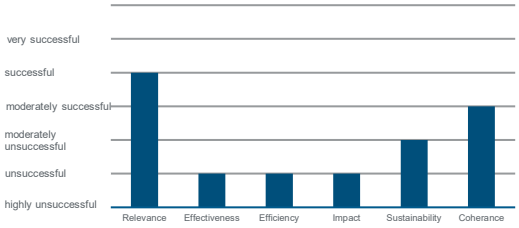
Ex post evaluation: Coastal protection for climate change adaptation, CARICOM

Title	Coastal protection for climate change adaptation in small Caribbean island states		
Sector and CRS code	Biodiversity & flood prevention/control (CRS codes: 41030/41050)		
Project number	BMZ No. 2012 97 621		
Commissioned bv	BMZ		
Recipient/Project-executing agency	Caribbean Community Climate Change Centre (CCCCC), provides advice on climate change policy to CARICOM		
Project volume/ financing instrument	Financing from the Energy and Climate Fund: EUR 10.8 million		
Project duration	April 2014 until the end of 2018		
Year of report	2021	**Year of random sample**	2021

Objectives and project outline

The objective at outcome level was to improve ecosystem services to mitigate the negative impacts of climate change on coastal zones in the project countries (Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Grenada). At impact level, the aim was to contribute to reducing climate-related risks for coastal populations. A tendering procedure for adaptation measures was intended to make use of the knowledge and needs of local institutions in order to finance tailored projects. In addition, a monitoring system for knowledge management and capacity building was to be introduced.

Overall rating:
Unsuccessful



Key findings

The project's approach was generally well suited to addressing the core problem of coastal protection being eroded by climate change. Despite the high relevance of the project for the participating island states and inhabitants, the region in the broader sense, the political partners and for German DC, the project failed due to the lack of operational, administrative and management-related capacities of the project-executing agency. Overall, the project is rated as "unsuccessful" for the following reasons:

- Due to a low implementation rate of the funded adaptation measures and the failure to achieve the targeted outputs, effectiveness is considered insufficient.
- Due to high costs for coordination and management, the project was marked by insufficient allocation, production and implementation efficiency.
- The project was not able to exploit synergies with other projects, which is why coherence is rated as moderately unsuccessful.
- Due to the low implementation of adaptation measures, the project was unable to achieve any overarching developmental impacts.
- Despite an approach originally designed for sustainability, no sustainable impacts are expected.

Conclusions

- The approach of providing funding for local adaptation measures is well suited to tackling the core problem of coastal protection being eroded by climate change.
- The involvement of local institutions theoretically ensures that tailored measures with high local relevance are supported.
- A detailed analysis and due diligence of the executing agency and implementation consultant are extremely important in these types of management-intensive projects.
- Time-limited funds should not be used for similar projects.

1 = very successful, 2 = successful, 3 = moderately successful, 4 = moderately unsuccessful, 5 = unsuccessful, 6 = highly unsuccessful

Rating according to DAC criteria

Overall rating: 5

Ratings:

Relevance	2
Coherence	3
Effectiveness	5
Efficiency	5
Impact	5
Sustainability	4

Summary of overall rating

As the highly relevant criteria of effectiveness, efficiency and overarching developmental impact were rated as unsuccessful, the project was given an overall rating of 5, i.e. “not successful”. This evaluation is presented in a short report as only some of the local adaptation measures were implemented and the DAC criteria of effectiveness, impacts and sustainability were therefore only examined to a limited extent.

General conditions and classification of the project

Climate change poses a significant threat to the ecosystems, infrastructure, health and livelihoods of the inhabitants of the Small Island Developing States (SIDS) in the Caribbean as their unique geographical location in the Atlantic Ocean and socio-economic characteristics make them particularly vulnerable to the impacts of climate change. In this context, the FC project aimed to contribute to climate-resilient development in Jamaica, Saint Lucia, Saint Vincent and the Grenadines and Grenada.

The project ran from April 2014 to the end of 2018. The regional, participatory project promoted local ecosystem-based adaptation measures that were already largely ready for implementation. Supported adaptation measures focused on the protection and sustainable management of coastal ecosystems such as coral reefs, mangrove forests or seagrass beds, as well as the rehabilitation of coastal ecosystems relevant for adaptation. The financial resources were provided by the Energy and Climate Fund (ECF); their availability was clearly limited to 2018.

Table 1: Breakdown of total costs

		Planned	Actual
Investment costs	EUR million	EUR 12.9	EUR 5.03
Counterpart contribution	EUR million	EUR 2.1	EUR 1.05
Financing	EUR million	EUR 10.8	EUR 3.98
of which BMZ budget funds	EUR million	EUR 10.8	EUR 3.98

Relevance

The FC project aimed to reduce the negative impacts of climate change on coastal zones and their inhabitants by improving ecosystem services (outcome objective). This was intended to contribute to reducing climate-related risks for the coastal population in the Small Island Developing States[1] (SIDS) (impact objective). The underlying assumption is that these ecosystem-based approaches to climate change

[1] Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Grenada

adaptation mitigate climate risks for the population in two ways. On the one hand, preserving existing coastal ecosystems improves the protection they offer against coastal erosion and thus reduces the threat to inhabitants. On the other hand, the population's vulnerability is directly reduced by protecting income sources such as spawning grounds for fish and tourist attractions.

Core problems

The core problem identified during project planning and which continues to be relevant was that the Caribbean, due to its geographical location, is one of the regions of the world most affected by the negative impacts of climate change. Coastal zones in particular are affected by overuse and extreme weather events. In addition, climate resilience, which was already weak at the project planning stage, is likely to be further reduced by the impacts of climate change.

The four SIDS are highly dependent on large areas with ecosystems relevant for adaptation: most of the population of the Caribbean island-nations lives in coastal regions and from the tourism, fishing, industry and agriculture sectors based there. These core sectors also account for the largest share of the countries' GDP. For example, in the case of Jamaica, on average 90% of GDP is generated in the coastal zone (GOJ/EU/UNEP n.d.)[2].

The insufficient adaptation and resilience to climate change impacts thus poses a significant economic, social and environmental risk for them. For example, in the last 20 years, environmental disasters in the countries of Saint Vincent and the Grenadines and Saint Lucia have caused damage in the range of double-digit percentages of GDP. In St. Vincent and the Grenadines, Hurricane Ivan caused destruction equivalent to 10% of GDP in 2004, and in St. Lucia, Hurricane Tomas caused destruction equivalent to 43.4% of GDP in 2009. (NEMO 2014; OCHA 2010)[3][4]. In the case of Grenada, Hurricane Ivan in 2004 destroyed almost 90% of residential buildings, but also tourist facilities and farmland. This resulted in damages exceeding 200% of GDP (IMF n.d.; GIZ n.d.)[5][6].

Poverty and social inequality are intensified by the impacts of climate change: poor people in particular cannot adequately insure themselves against future events caused by climate change due to low incomes and a lack of insurance cover. The target group of the project was thus the coastal population living in the catchment area of the adaptation measures and affected by the impacts of climate change. These included, in particular, local people who are directly endangered by coastal erosion, storm surges, etc. or who live from sources of income that are affected by climate change.

Table 2 summarises the 2018 climate projections and key climate impacts for the project countries. The projections are based on USAID data and highlight the need for adaptation and resilience to the impacts of climate change.

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[2] GOJ/EU/UNEP (n.d.) Coastal Zones & Communities. Government of Jamaica, European Union, United Nations Environment Programme; last accessed on 13 December 2021, https://www.mona.uwi.edu/physics/sites/default/files/physics/uploads/02_CCAndCoastal%20Zones2.pdf

[3] NEMO (2014) Saint Lucia: Country Document for Disaster Risk Reduction, 2014. National Emergency Management Organisation; last accessed on 13 December 2021, https://dipecholac.net/docs/files/869-documento-pais-saint-lucia-para-la-web.pdf

[4] OCHA (2010) Saint Vincent and the Grenadines: HURRICANE TOMAS EMERGENCY RECOVERY LOAN PROJECT; United Nations Office for the Coordination of Humanitarian Affairs; last accessed on 13 December 2021, https://www.cepal.org/en/publications/38612-assessment-economic-impact-climate-change-tourism-sector-saint-lucia

[5] IMF (n.d.) Grenada Climate Change Policy Assessment. International Monetary Fund; last accessed on 16 November 2021, https://www.imf.org/en/Publications/CR/Issues/2019/07/01/Grenada-Climate-Change-Policy-Assessment-47062 https://www.adaptation-undp.org/explore/caribbean/grenada

[6] GIZ (n.d.) Integrated climate change adaptation strategies in Grenada. Gesellschaft für Internationale Zusammenarbeit; last accessed on 16 November 2021, https://www.giz.de/en/worldwide/27030.html

Table 2: Climate risk profiles of the four project countries

CLIMATE PROJECTION AND THE MOST IMPORTANT CONSEQUENCES	JAMAICA	SAINT LUCIA	ST. VINCENT AND THE GRENADINES (EAST AND SOUTH CARIBIC)
TEMPERATUR RISE UNTIL 2050	1.0-1.4 °C	0.9-1.3 °C	0.9-1.3 °C
SEA LEVEL RISE UNTIL 2050	Rise of the sea level (0.4-0.7m) and increase in storms	Rise of the sea level and increase in storms	Rise of the sea level and increase in storms
WEATHER CHANGES	4.8-7.2 % Rise in average yearly precipitation, 3.6-15 % more dry days until 2050	Increase in hurricane intensity, including strong winds and more precipitation	Increase in hurricane intensity, including strong winds and more precipitation
WATER RESOURCES	Decreased water supply, deterioration of water quality	Decreased water supply and quality, damaged infrastructure due to more intense storms	Decreased water supply and quality, damaged infrastructure due to more intense storms
AGRICULTURE, FISHERY	Decreased harvest rates, ground erosion, damage to cultivated plants and cattle	Harvest losses, decreased land and water resources for irrigation; Habitat degradation and loss, decreased biodiversity, altered fish migration patterns	Harvest losses, decreased land and water resources for irrigation; Habitat degradation and loss, decreased biodiversity, altered fish migration patterns
HUMAN HEALTH	Spread of vector-borne diseases, increase in diseases transmitted by water, increase in heatstrokes	Shifting burden of infectious diseases, increased heat stress, lack of access to health services	Shifting burden of infectious diseases, increased heat stress, lack of access to health services
INFRASTRUCTURE	Damages to traffic-communication-, energy- and water supply systems, Damages in coastal infrastructure and tourist sites	Damaged infrastructure, limited access to services	Damaged infrastructure, limited access to services
COSTAL ECOSYSTEMS	Beach erosion, decline in mangrove forests and in fish stock	Damaged coastal ecosystems	Damaged and degraded coastal ecosystems
TOURISM		Degraded coastal ecosystems, damaged infrastructure, increased difficulties in service provision	damaged infrastructure, increased difficulties in service provision

Source: ClimateLinks USAID (2017/2018) CLIMATE RISK PROFILE JAMAICA; CLIMATE RISK PROFILE EASTERN AND SOUTHERN CARIBBEAN; last accessed on 16 November 2021 https://www.climatelinks.org/sites/default/files/asset/document/2018-26-Feb_CadmusCISF_Climate-Risk-Profile-ES-Caribbean.pdf; https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID-CCIS_Climate-Risk-Profile-Jamaica.pdf; https://www.climatelinks.org/sites/default/files/asset/document/2018-26-Feb_CadmusCISF_Climate-Risk-Profile-ES-Caribbean.pdf

Development policy objectives

The development policy objectives of the project were consistent both with the objectives of the partner region and with the basic development policy focus of German DC.

At the time of the project appraisal and beyond, climate adaptation was a priority area for the policymakers in the project countries. For example, CARICOM's Strategy Paper for 2015-2019 included adaptation

to climate change and management to mitigate climate-related risks as one of its top priorities (CARICOM n.d.)[7]. Furthermore, all four project countries had already committed to climate change adaptation and improved management of coastal ecosystems before the module began.

The focus of the project design on protecting the global public assets of climate, environment and biodiversity, as well as adapting to climate change, was consistent with the plans of the BMZ's Biological Diversity strategy, which envisaged focusing activities in the Caribbean on climate change adaptation and biodiversity (BMZ 2011)[8]. The project design also corresponds to the first area of intervention found in BMZ's core area strategy, "Responsibility for Our Planet – Climate and Energy". With its core area strategy, the BMZ emphasises support for systematic adaptation measures, as well as – with reference to SDG 13.b – the climate policy relevance of cooperation with small island developing states, which also included the four project countries Jamaica, Saint Lucia, Saint Vincent and the Grenadines and Grenada. The same applies to the German climate change adaptation strategy adopted by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) in 2008: This also underscored the need to support the adaptation strategies of countries threatened by climate change (BMU 2008)[9]. There was no overlap with other DC projects.

The financial resources for the project came from the ECF, which is intended to enable additional investments in the promotion of an environmentally friendly, reliable and affordable energy supply and climate change mitigation (Federal Ministry for Economic Affairs and Energy n.d.)[10].

Project approach

To achieve its objectives, the project relied on an ecosystem-based approach of local adaptation measures implemented under component 1 of the project (Output 1: The integrity of ecosystems relevant to adaptation is improved). This ecosystem-based approach was designed not only to reduce the threat of climate change impacts and build more resilient coastal ecosystems, but also to alleviate the vulnerability of coastal populations at the same time. The approach included an invitation to local organisations and institutions to submit their ideas or already elaborated implementation proposals for ecosystem-based measures (Call for Proposals). Selected adaptation measures were then to be financed by the project and implemented by local organisations and institutions. The project focused on two funding areas: protection and sustainable management as well as rehabilitation of adaptation-relevant coastal ecosystems. For example, supported local adaptation measures were aimed at rehabilitating coral reef ecosystems and improving fish biomass, as well as increasing resilience to climate change and reducing the extent of coastal erosion while creating sustainable livelihood opportunities.

The project pursued a regional approach by involving four Caribbean island-states and delegating central management to the Caribbean Community Climate Change Centre (5Cs) (project-executing agency). The second component of the project therefore aimed to strengthen regional knowledge management on ecosystem-based adaptation to climate change (Output 2: Systematisation and dissemination of lessons learned). The aim was for as many stakeholders as possible to contribute their experience in order to achieve the greatest possible synergy effects and knowledge sharing through cooperation.

It should be noted that the conceptual approach of the project was sustainable, innovative and well-conceived for the overall conditions described. The extent to which the individual (partially) financed ecosystem-based adaptation measures were appropriate in terms of subject matter and content for addressing the respective core problems in the SIDS was not examined in detail in this EPE.

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[7] CARICOM (n.d.) VISION, MISSION AND CORE VALUES. Last accessed on 7 November 2021, https://caricom.org/vision-mission-and-core-values/

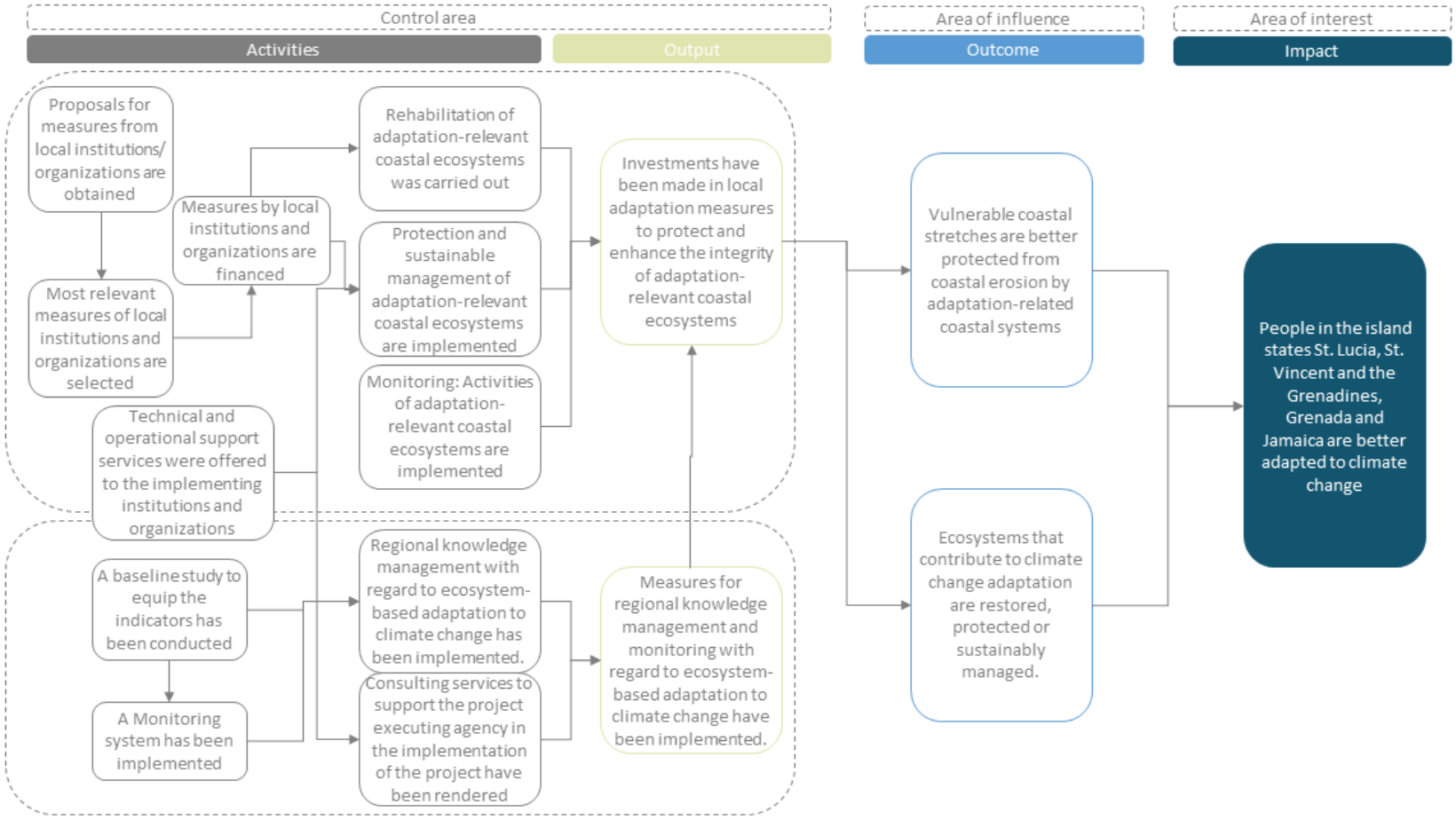
[8] BMZ (2018) Responsibility for Our Planet – Climate and Energy Federal Ministry for Economic Cooperation and Development; last accessed on 13 December 2021, https://www.bmz.de/resource/blob/23332/39566031aae46b188f02b7bfdb7aeb9e/materialie240-biologische-vielfalt-data.pdf

[9] BMU (2008) German Strategy for Adaptation to Climate Change. Last accessed on 17 November 2021, Federal Ministry for the Environment, Nature Conservation, Nuclear Safety https://www.bmu.de/fileadmin/bmu-import/files/english/pdf/application/pdf/das_zusammenfassung_en.pdf

[10] BMWI (n.d.) Act on the Establishment of a Special Energy and Climate Fund Federal Ministry for Economic Affairs and Climate Action; last accessed on 17 November 2021, https://www.bmwi.de/Redaktion/DE/Gesetze/Energie/ekfg.html

The activities, outputs, outcomes and intended impacts of the project are outlined below in the Theory of Change (see Figure 1). This is mainly based on the project's impact logic and was adjusted slightly during the evaluation.

Figure 1: Project's Theory of Change



KfW has implemented the project approach described above several times in the follow-up to the project being evaluated here. For example, the project “Adaptation for SIDS in the Caribbean: The EbA Facility” with a volume of approximately EUR 45 million and project-executing agency “Caribbean Biodiversity Fund” has been implemented in the partner countries involved here among others since 2016. Furthermore, the conceptually similar bilateral project “Adapted management of ecosystems to protect against coastal erosion in a changing climate” is being implemented in Colombia with a volume of EUR 8 million. Another example is the “Ecosystem-based Adaptation Programme” in the western Indian Ocean. However, based on the lessons learned from these projects, the view is now shared within KfW that sufficient time, experienced and adequately resourced executing agencies and a strong implementation consultant are important for the effective implementation of this approach.

These factors did not exist in this project: the assumptions made in the project appraisal about sufficient capacities and experience with the implementation of regional FC projects by CARICOM institution 5Cs were not confirmed. This means that the capacity analysis of the project-executing agency by KfW was not examined critically enough. The choice of the project-executing agency as a regional organisation was therefore generally relevant, but not conducive to the successful implementation of the project and the adaptation measures.

Despite this insufficient institutional configuration, the project is assessed as fundamentally relevant in view of the relevance of the targeted measures for the region and the SIDS involved, as well as the political relevance for the partners in the region and for German DC.

Relevance rating: 2

Coherence

Internal coherence

When designing the project, the idea for implementing the local adaptation measures was to draw on synergies with two projects of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) running from 2012 to 2017: 1) “Management of coastal resources and conservation of marine biodiversity in the Caribbean - CARICOM” and 2) “Adaptation to climate change for the conservation of natural resources and diversification of agricultural production and forestry”. In particular, potential local adaptation measures aimed at improving management in existing protected areas were intended to complement or be complemented by Technical Cooperation activities.

However, there was effectively no cooperation and synergies between the GIZ and this KfW project during project implementation. One of the main reasons for this is that the local adaptation measures selected were largely implemented only during the last months of the project and thus at the end of the GIZ projects. Also, most of the local adaptation measures focused on the rehabilitation of coastal ecosystems relevant for adaptation, and less on improving the management of existing protected areas.[11] As there was no direct link to other DC projects, the project was unable to achieve synergy effects with other German DC actors and projects in the same intervention context.

Still, the project’s strategic frame of reference in relation to international and global conventions and objectives can be rated as positive. In an international context, the project was expected to contribute to the achievement of several Sustainable Development Goals: SDG 13 “Take urgent action to combat climate change and its impacts”, SDG 14 “Conserve and sustainably use the oceans, seas and marine resources for sustainable development” and SDG 11 “Sustainable cities and communities – Make cities inclusive, safe, resilient and sustainable”. Established international standards and norms, such as the Paris Declaration, were also to be applied during project implementation. The “leave no one behind” principle would also have been adopted if implementation had been successful, by focusing on the vulnerable population living in the project area.

[11] Only one local adaptation measure focused on the management of coastal ecosystems for climate change adaptation. However, the measure was implemented in Grenada, and not in one of the GIZ project countries.

External coherence

In terms of external coherence, the project integrated well into CARICOM's "Regional Framework for Achieving Development Resilient to Climate Change" in terms of development policy. The framework provided context for measures by member states and regional organisations in the period 2009-2015 and drew on the foundations of the predecessor programmes and projects of 5Cs. The framework drew on previous work carried out under the "Adaptation to Climate Change", "Adaptation to Climate Change in the Caribbean" and "Mainstreaming Adaptation to Climate Change projects, as well as related work by other regional organisations, NGOs and academic institutions (5Cs 2007)[12].

However, it was not possible to develop any synergies with projects or activities of other donors or development organisations. Although synergies with a number of other bilateral and international development cooperation projects implemented by 5Cs were planned, the evaluation found no evidence for this. This was also due to the low degree of implementation of the adaptation measures and the lack of relevant projects in the same timeframe and content context during project implementation. There was therefore no negative interaction or duplication with the projects of other donors.

In summary, the project coherence is considered to be moderately successful.

Coherence rating: 3

Effectiveness

The effectiveness of the project is measured by the achievement of the project objective (outcome objective). In this case, an assessment of the target achievement is only possible to a limited extent since the project indicators were defined but never finally supplied with baseline and target values (see Table 3). Alternatively, indicators drawn from the impact model or proxy indicators can be used to check whether the intended changes have been achieved by the project. An important prerequisite is that sufficient information is available on the project's achievements (outputs) and that their target achievement makes it plausible that the envisaged impacts will be fulfilled. In this case, however, the low implementation of the outputs effectively precludes the achievement of the project objectives.

The formulated objective of the project was to reduce the negative impacts of climate change on coastal zones in the selected island-states by improving ecosystem services. In this way, vulnerable sections of the coast were to be better protected from coastal erosion by adaptation-relevant coastal ecosystems, and ecosystems should be restored, protected or sustainably managed in order to contribute to climate change adaptation. Two indicators were defined to measure the success of the project (see Table 3).

Table 3: Project objective indicators

PROJECT GOAL INDICATORS	PLANNED	ACTUAL	EPE
LENGTH OF VULNERABLE COASTAL STRETCHES BETTER PROTECTED FROM COASTAL EROSION BY ADAPTATION-RELATED COASTAL ECOSYSTEMS	No target defined	Final Inspection (2019): 70 km (estimated)	Not included
AREA OF RESTORED, PROTECTED OR SUSTAINABLY MANAGED ECOSYSTEMS THAT CONTRIBUTE TO CLIMATE CHANGE ADAPTATION.	No target defined	Not included	Not included

Data source: Project appraisal 2013 & final review 2019

To achieve its objectives, the project relied on local, ecosystem-based adaptation measures implemented under component 1 of the project. To select relevant adaptation measures, the project focused on obtaining proposals via a public application procedure. Prior to this, public information events were held in the

[12] 5Cs (2007) The Regional Climate Change Strategic Framework And Its Implementation Plan For Development Resilient To Climate Change. Last accessed on 17 November 2021, Caribbean Community Climate Change Centre https://www.caribbeanclimate.bz/blog/2017/11/28/the-regional-climate-change-strategic-framework-and-its-implementation-plan-for-development-resilient-to-climate-change-us2800000/

four programme countries to publicise the programme, its funding concept and the funding instruments as planned. After an initial pre-selection phase, nine proposals were examined by the project-executing agency, financed and then partially implemented by the local project-executing agencies. Of these nine selected projects, seven projects were partially implemented: one in Jamaica, two in Saint Lucia, two in Grenada and two in Saint Vincent and the Grenadines.

Table 4: Overview of funded individual projects

COUNTRY	PROGRAMME OBJECTIVE	PROGRAMME EXECUTING AGENCY	IMPLEMENTATION RATE	OUTPUT RATE
JAMAICA	Adaptation to the Climate Change in the protected area Portland Bight	Caribbean Coastal Area Management Foundation	82 %	67 %
	Develop climate change adaptation strategies for Portland	University of West Indies, Centre for Marine Sciences, Jamaica	Canceled	
	Montego waterfront redevelopment	Urban Development Corporation	Canceled	
	Adaptation strategies for fisheries ecosystems & technology to improve climate change resilience in Negri marine protected areas	Westmoreland Municipal Corporation	Canceled	
ST. VINCENT AND THE GRENADINES	Restoring the Ashton Lagoon ecosystem to promote nature-based adaptation to climate change while creating sustainable livelihood opportunities for the people of Union Island.	Sustainable Grenadines Inc.	82 %	92 %
	Island Marine and Coastal Protection Project on the South Coast to improve ecosystem Health and Resilience to Climate Change	National Parks, Rivers and Beaches Authority	22 %	33 %
	Bay Sandy Bay coastal protection	Ministry of Transport, Works, Local Government, and Urban Development	Canceled	
GRENADA	Terrestrial and marine ecosystem-based adaptation actions in the Sandy Island Oyster Bed marine protected area and two other communities	Grenada Organic Agriculture Movement	48 %	46 %
	Improving the management of two marine protected areas (Gouyave and Molinière Beauséjour)	Grenada Community Development Agency	63 %	80 %
ST. LUCIA	Rehabilitation of the local coastal ecosystem (ridge to reef). Climate change adaptation and fish stock improvement in two coastal communities	Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives	5 %	16 %
	Coastal stabilization and rehabilitation on Pigeon Island National Landmark and the Pointe Sable Environmental Protection Area	Saint Lucia National Trust	11 %	33 %

Data source: Final review 2019

Since the outcome indicators could not be definitively assessed, this EPE uses the implementation progress of the individual measures as a proxy output indicator. Of the nine selected projects, only seven measures with an implementation rate of between 5 % and 82 % were carried out, primarily due to considerable implementation problems and delays, and therefore only show a partial output achievement. Three initially planned projects in Jamaica were cancelled due to delays in planning and the resulting significant risk that the implementation schedule would be delayed. One previously agreed project in Saint Vincent and the Grenadines was cancelled (see Table 4). In total, these seven projects represent only about 30 % of the funds earmarked for financing the measures.

In view of the low target achievement of the measures and the low level of fund disbursement of 30 %, the output targeted with component 1 – the integrity of ecosystems relevant for adaptation is improved – was only implemented to a very small degree.

The reasons for the low level of implementation of the adaptation measures and the targeted outputs are due to significant problems and delays in implementation. A project implementation unit was set up to manage the operational, administrative and financial aspects of 5Cs. However, the project implementation unit was not equipped to deal with the necessary processes due to a lack of experience with FC projects and comparable planning and implementation procedures. The cooperation between the project-executing agency 5Cs and the implementation consultant IUCN was also marred by misunderstandings of the respective roles and communication problems. It was also not possible to leverage the intended synergies through the involvement of local institutions and organisations. For this reason, the selection of a weak project-executing agency, which was responsible for managing the project, and the choice of an insufficiently strong implementation consultant were the main reasons for the considerable losses in effectiveness.

The reasons listed above for the low level of implementation of the adaptation measures also largely explain the loss of effectiveness in the implementation of the project's second component. Component 2 aimed, among other things, to establish a monitoring system to measure the impacts of the adaptation measures and the project as a whole. Part of this planned monitoring was a baseline study on the set of project objective indicators and the creation of a measure-specific indicator matrix. Due to delays, lack of interest on the part of 5Cs and the focus on implementing the measures (component 1), the baseline study was not compiled and the indicator matrix was only available shortly before project completion. Component 2 also included the establishment of an M&E information support system that would transmit the respective decentralised indicator values online to 5Cs, where they would be incorporated into the monitoring of the overall project. This activity was not implemented either.

The only outcome of component 2 that can be listed is knowledge management and capacity building at the level of local implementing organisations. For example, a number of interviews conducted as part of the EPE showed that local implementing organisations have become more aware of stabilising selected ecosystems and adapting to climate change. Various stakeholders confirmed this and highlighted the awareness-raising of local institutions and organisations as one of the project's achievements. Despite this partial success, the targeted output of the second component was largely not reached.

Due to the low degree of implementation and the low achievement of the targeted outputs of the adaptation measures, no impact was achieved at the project objective level (outcome); despite some positive partial results, the negative results clearly dominate - the effectiveness of the project fell well short of expectations. The effectiveness of the project is therefore rated as unsuccessful.

Effectiveness rating: 5

Efficiency

The efficiency assessment looks at the efficiency of implementation, i.e. the cost-effectiveness of measure management, on the one hand, and the production and allocation efficiency on the other.

The project design was based on promoting local adaptation measures that were already largely ready to be implemented. This approach was intended to ensure cost-efficient use of the available funds. The project was also expected to benefit from synergies with existing initiatives and plans, as well as from the expertise of the project-executing agency 5Cs and the implementing consultant International Union for the Conservation of Nature (IUCN).

In addition, ecosystem-based approaches are generally considered more cost-effective than traditional coastal protection infrastructure measures since they rely on natural resources such as coral reefs, mangroves or seagrass beds instead of costly infrastructure constructions. These parameters promoting efficiency were not met.

Since most of the outputs were not achieved, it is assumed with regard to the allocation efficiency that the funding used made little or no contribution to achieving the impact objective.

Subsequently, the efficiency analysis focuses on the project's implementation efficiency as well as the coordination and management costs.

Implementation efficiency

First it must be said that the implementation efficiency suffered decisively from communication problems between the implementation consultant IUCN and the project-executing agency 5Cs. There were diverging expectations between the two stakeholders regarding the division of labour, the understanding of roles and the selection of adaptation measures. For example, 5Cs viewed IUCN as an implementation consultant, while IUCN saw itself as a coordinator and technical advisor. IUCN complained that the selection of adaptation measures had taken place in part without them, although this is where they saw their main expertise. This different view of roles was still very evident today in the interviews with the responsible organisations and was discussed at length, especially on the part of IUCN. The two crisis meetings initiated by KfW during the project term were unable to solve the problems of the management model.

In addition to the communication problems, there were coordination problems in administrative, technical and financial implementation. The reason was the weak capacities and limited management experience of 5Cs. For example, the programme implementation unit (PIU) established by 5Cs was not able to cope with the operational, administrative and financial challenges in many respects. For example, the establishment of a disposition fund, the operationalisation of procurement procedures and the transfer of funds to local implementing organisations proved to be a long and complicated process. The staff capacities provided by 5Cs for project management and the additional contributions and services were also not delivered satisfactorily. The requirements resulting from the project's complex regional and conceptual structure were not adequately met by 5Cs.

The selection of the implementation consultant, which took place through a regional tender based on predefined criteria, was also accompanied by delays and efficiency losses. The choice by 5Cs of IUCN as the implementation consultant with its regional office for Mexico, Central America and the Caribbean, based in Costa Rica, was based in part on a financially attractive offer. However, IUCN lacked the institutional and human resources experience managing FC projects. This resulted in a long-term consultant designated by IUCN not being present on the ground for a long time, which eventually led to his replacement. The actual work of IUCN, and therefore of the project as a whole in many respects, did not begin for the most part until two and a half years after the project started.

As a result of the lack of implementation efficiency, cooperation with local institutions also suffered. It was thus not possible to use their existing experience and extensive knowledge of the ecosystems prevalent on the individual islands for successful project implementation. Also, lessons learned were not shared enough to ensure synergies. It was therefore not possible to leverage the intended synergies in implementation.

Coordination and management costs

As shown in Table 1, the total project costs, including the counterpart contributions of 5Cs and the local implementing organisations, amounted to EUR 5.03 million. These are thus EUR 7.87 million or 61% lower than estimated during planning. The high costs given the low level of implementation can be explained by the considerable delays in the operational implementation of the investment measures, which led to significant coordination and management costs.

Table 5: Project cost distribution

COST	PLANNED (EUR)	ACTUAL (EUR)	ACTUAL/TOTAL COST RATIO	PLANNED/ ACTUAL RATIO	FC-TOTAL-COST RATIO (EUR)
INVESTMENT IN ADAPTION MEASURES	8,641,740	2,711,800	54 %	31 %	1,807,800 (45 %)
KNOWLEDGE MANAGEMENT & MONITORING	650,000	146,000	3 %	22 %	146,000 (4 %)
PROJECTMANAGEMENT & COORDINATION	1,294,250	1,313,040	26 %	102%	1,163,040 (29 %)
EXECUTING CONSULTANT	1,350,000	865,360	17 %	64 %	865,360 (22 %)
TECHNICAL RESERVE	1,000,000				
TOTAL	12,936,000	5,036,200	100 %	39 %	5,036,200 (100 %)

Data source: Project appraisal 2013, final review 2019

The largest share of costs, 54 %, pertained to component 1, which was unable to demonstrate any finalised adaptation measures in the four island-states. Compared to the planned expenditure, only 31 % of the planned EUR 8.6 million went to ecosystem-based adaptation measures, which were required to achieve the project objectives and the overarching developmental impact.

Just under EUR 2.2 million was spent on project management, of which 34 % was spent on the costs of the implementation consultant IUCN. Altogether, the project management costs were 43 % of the total costs of the project (see Table 5). The costs of the implementation consultant as well as the project management costs are generally too high and not acceptable given the low degree of implementation of components 1 and 2. This assessment is shared by KfW and IUCN staff, but IUCN points to a lack of capacity among the project-executing agencies of the various adaptation measures, which, according to the organisation, explains some of the high project management costs.

Both the high, absolute coordination and management costs and the associated high, relative project management costs compared to the implementation costs therefore show clear efficiency losses and insufficient production and allocation efficiency.

An extension of the project with the aim of advancing implementation of the adaptation measures and thus improving implementation efficiency was not possible in view of the time-limited funding of the Energy and Climate Fund until the end of 2018; furthermore, the KfW management responsible strongly advised against this type of extension. In view of the serious doubts raised early on by the KfW project manager about the success of the project and the long delay to the start of implementing the adaptation measures (20 months before the project officially ended), the question arises as to whether it would have been possible to reduce efficiency losses by terminating the project before the official end date and whether it would therefore have made sense in retrospect.

Based on these assessments of allocation, production and implementation efficiency, and due to the high coordination and management costs, the efficiency of the project is rated as unsuccessful.

Efficiency rating: 5

Impact

The overall developmental objective of the project was to mitigate climate change-related risks for coastal residents living in vulnerable coastal areas in the selected SIDS. The project was also designed to contribute to biodiversity conservation by protecting regional and global environmental assets, from which larger

population groups benefit indirectly. Table 6 shows the corresponding target indicator at the level of the overarching developmental impact (overall objective indicator).

Table 6: Overall objective indicator

OVERARCHING DEVELOPMENT OBJECTIVE INDICATOR	PLANNED	ACTUAL	EPE
PEOPLE IN THE FOUR ISLAND STATES ARE BETTER ADAPTED TO THE CLIMATE CHANGE	Up to 100,000 person within the four SIDS should profit from the measures	Not recorded	Not recorded

Data source: Project appraisal 2013 & final review 2019

It should be noted that this indicator was not used by the project and was never populated with baseline or concrete target values. This meant that it could not be conclusively assessed either in the final review or in this evaluation. Conceptually speaking, the indicator also focused on the people who have adapted to climate change, rather than on the adaptation of ecosystems, which would be more appropriate for the project. A more suitable indicator would therefore have been a decrease (target value < baseline) of “people in the island states of Saint Lucia, Saint Vincent and the Grenadines, Grenada and Jamaica affected by climate change-related risks”.

Due to the very low level of implementation of the adaptation measures, it is plausible that there were no overarching developmental impacts. In line with this, interview participants were unable to point to any macroeconomic effects of the project. Any progress made in relation to the impact target indicator adjusted in this evaluation can therefore not be assessed. The extent to which the project’s target group may have benefited from partial services rendered within the individual measures cannot be conclusively stated either, also because an analysis of the possible contributions of individual measures to overarching developmental impacts was not the subject of the evaluation.

Factors such as a lack of capacity and experience on the part of the project-executing agency, inadequate conceptual and operational planning and considerable delays in implementation are also to be mentioned here as reasons for the failure to achieve sustainable developmental impacts. These factors have thus prevented the potential impact at impact level.

Only component 2 of the project was able to achieve some modest success through knowledge management and capacity building at the level of local implementing organisations, according to interviews and project documentation. However, the extent to which the awareness of the local implementing organisations for ecosystem stabilisation and adaptation to climate change has been raised sustainably and effectively in terms of development policy, and the extent to which this awareness-raising can be attributed to the project, cannot be conclusively quantified based on the available data.

Environmental risks attributable to the project were not identified because no significant negative impacts on environmental resources such as animals, plants, soil or water resources occurred during the implementation of the local adaptation measures.

The overarching developmental impact is assessed as unsatisfactory as a result.

Overarching developmental impact rating: 5

Sustainability

From a conceptual point of view, the sustainability of the project was to be ensured through i) close involvement of the local authorities benefiting directly to identify tailor-made measures, generate ownership and increase the sustainable use and maintenance of the investments, ii) by ensuring the operating and follow-up costs of the adaptation measures and iii) project management by institutionally based and issue-based organisations, and thus the sustainable integration of the local adaptation measures into the national adaptation strategies of the countries. Component 2 in particular was supposed to play a key role here.

Due to the low level of implementation of both components and the non-renewal of the project, no impacts were achieved. Consequently, it was not possible to achieve any sustainable impacts that would last beyond the project itself. The project-executing agency 5Cs did not pursue the project any further either.

Sustainability is therefore rated as unsuccessful.

Sustainability rating: 4

Recommendations and project-wide conclusions

The project's approach was generally relevant to addressing the core problem of coastal protection being eroded by climate change. By involving local organisations and institutions, it can be ensured that measures are promoted that have a high relevance to the individual local problems. It is therefore understandable that KfW is pursuing the project's approach in other projects, including in the Caribbean region.

However, there were some clear factors in the implementation of the project being evaluated that led to significant losses in efficiency and effectiveness; these result in the following project-wide conclusions.

First, when choosing the project-executing agency, it must be ensured that it has the necessary capacities to implement a supraregional FC project with an appropriate financial framework. A detailed analysis and due diligence of a potential executing agency, as well as its project management experience, is therefore essential. In this context, detailed references from former projects should also be sought and, if necessary, checked. The executing agency can also be selected by means of a tendering competition to enable a comparison between potential project executing agencies. This approach is already being implemented by KfW in various project contexts today and deserves even more attention in the future.

Furthermore, when choosing an implementation consultant, it is important to insist on the relevant issue-specific and operational implementation experience. An awarding procedure that prioritises the relevant experience of a candidate over the financial attractiveness of a bid is preferable in this respect. The roles should also be clearly defined in the awarding procedure.

The project's approach also requires that the implementing local organisations have the necessary capacities to implement the adaptation measures. This was not the case with some of the local organisations. For this reason, project measures and demonstrably suitable local organisations should be selected according to formalised criteria (including management and operational implementation experience of ecosystem-based adaptation measures).

Another factor influencing the implementation was the time-limited funding from the Energy and Climate Fund. The tight timeframe as a result does not meet the needs of a participatory, regional and tender-intensive project approach. In the future, alternative funding and longer timeframes should be used for such complex approaches.

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being **relevance, effectiveness, efficiency** and **overarching developmental impact**. The ratings are also used to arrive at a **final assessment** of a project's overall developmental efficacy. The scale is as follows:

Level 1	Very good result that clearly exceeds expectations
Level 2	Good result, fully in line with expectations and without any significant shortcomings
Level 3	Satisfactory result – project falls short of expectations but the positive results dominate
Level 4	Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results
Level 5	Clearly inadequate result – despite some positive partial results, the negative results clearly dominate
Level 6	The project has no impact or the situation has actually deteriorated

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative assessment.

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability): The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The **overall rating** on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (level 3).