Saint Lucia's Portfolio of Project Concept Notes for the Fisheries Sector 2018-2028

Under the National Adaptation Planning Process

NAP Global Network

United States In-Country National Adaptation Plan (NAP) Support Program

Gift of the United States Government

Implemented by: IISD

Initial funding for the Network also provided by: Federal Ministry for Economic Cooperation and Development

Saint Lucia's Portfolio of Project Concept Notes for the Fisheries Sector 2018-2028 under the National Adaptation Planning Process

Prepared under the guidance of:
Department of Sustainable Development; and,
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Saint Lucia National Adaptation Plan logo by Alexandra Grant.

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Foreword

Saint Lucia's National Adaptation Plan (NAP) has been defined as a ten (10)-year process (2018-2028), consisting of priority cross-sectoral and sectoral adaptation measures for eight key sectors/areas and a segment on the 'limits to adaptation', complemented, incrementally, with Sectoral Adaptation Strategies & Action Plans (SASAPs). Priority sectors for adaptation action include: Tourism; Water; Agriculture; Fisheries; Infrastructure and spatial planning; Natural resource management (terrestrial, coastal and marine); Education; and Health. Other key sectors will be identified through a cyclical, iterative NAP process.

Saint Lucia's NAP process is spearheaded by the Sustainable Development and Environment Division (SDED) of the Department of Sustainable Development, currently housed within the Ministry of Education, Innovation, Gender Relations and Sustainable Development. The NAP process has benefitted from the inputs of multiple stakeholders, comprising public, statutory, academic and private sector bodies. Indeed, this process has involved State and non-State actors, such as media personnel, who play an important role in helping efforts to positively influence thinking, mould outcomes, change behaviour and instigate action across the populace, at all levels.

Saint Lucia's overarching NAP continues to be supplemented by several documents:

- *Saint Lucia's National Adaptation Plan Stocktaking, Climate Risk and Vulnerability Assessment Report*
- *Saint Lucia's National Adaptation Plan Roadmap and Capacity Development Plan 2018-2028*
- *Saint Lucia's Climate Change Communications Strategy*
- *Saint Lucia's Sectoral Adaptation Strategy and Action Plan for the Water Sector (Water SASAP) 2018-2028*
- *Saint Lucia's Sectoral Adaptation Strategy and Action Plan for the Agriculture Sector (Agriculture SASAP) 2018-2028*
- *Saint Lucia's Sectoral Adaptation Strategy and Action Plan for the Fisheries Sector (Fisheries SASAP) 2018-2028*
- *Saint Lucia's Portfolio of Project Concept Notes for the Water Sector 2018-2028*
- *Saint Lucia's Portfolio of Project Concept Notes for the Agriculture Sector 2018-2028*
- *Saint Lucia's Portfolio of Project Concept Notes for the Fisheries Sector 2018-2028*
- *Monitoring and Evaluation Plan of Saint Lucia's National Adaptation Planning Process*
- *Guidelines for the Development of Sectoral Adaptation Strategies and Action Plans: Saint Lucia's experience under its national adaptation planning process*

This process also supported a climate change website, an animated video and training for government entities and journalists in communicating about climate change. A NAP Assembly and Donor Symposium were also all made possible under this process, through the support of several entities.

Specifically, the process has benefited from the financial support of the United Nations Development Programme's (UNDP) Japan- Caribbean Climate Change Partnership (JCCCP). Technical and financial support for Saint Lucia's NAP process has also been provided through the United States (U.S.) In-Country NAP Support Programme (NAP-SP), implemented by the International Institute for

Sustainable Development (IISD). Technical support for the chapter on the 'limits to adaptation' in the NAP was provided under the IMPACT project, funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), as part of the International Climate Initiative (IKI). The IMPACT project is jointly implemented by Climate Analytics, the Caribbean Community Climate Change Centre (CCCCC), Secretariat of the Pacific Regional Environment Programme (SPREP) and Charles and Associates (CAA) Inc. The Department extends its thanks to all of the foregoing and takes this opportunity to recognise the consultant, Ms. Clara Ariza, for her tireless efforts in Saint Lucia's NAP process, under the able guidance of SDED.

Saint Lucia looks forward to forging partnerships and alliances that will assist in developing additional SASAPs and implementing the measures, programmes, projects and activities outlined in its NAP, SASAPs and other support documents. Saint Lucia is prepared to welcome support, that is, finance, technology transfer and capacity building, from a variety of sources, including public, private, bilateral, multilateral and alternative sources, all in an effort to help the country build climate resilience and address the seemingly insurmountable phenomenon of climate change.

SNAPSHOT OF

Saint Lucia's Fisheries Sectoral Adaptation Strategy and Action Plan 2018–2028

(Fisheries SASAP)

Saint Lucia's Fisheries SASAP seeks to drive the implementation of effective adaptation actions for strengthening the sustainability of the country's fisheries and fishery-dependent businesses and the security of fisheries-dependent livelihoods under a changing climate.

STRATEGY:

This SASAP consists of **a set of measures** considered essential for adaptation and prioritized by stakeholders in the sector. The SASAP determines for each measure, whether its **implementation** should start in the **short term (2018–2021), medium term (2021–2024) or long term (2024–2028)**, according to the measure's level of **urgency**, and as funding becomes available, with short term being the most urgent.

The SASAP measures were formulated to:

- Improve the national policy, legal, regulatory and institutional framework
- Facilitate climate adaptation
- Enhance human and institutional capacities for the design, implementation, monitoring and evaluation of fisheries-related climate adaptation projects
- Improve productivity through climate-resilient fisheries management systems
- Promote climate-resilient aquaculture production
- Promote alternative livelihoods creation and development
- Improve access to financial and business support
- Strengthen climate monitoring and communication for emergency planning and informed decision making
- Strengthen and expand climate resilient fisheries infrastructure

Climate change threatens fishing livelihoods and resources through: rising sea temperatures and ocean acidity; more intense winds and storms; degradation and loss of fish nurseries and breeding habitats; changing fish species distribution; and reduced fish stocks and increasing damage to fishing equipment and infrastructure, among other negative effects.

The cost of inaction on climate change in Saint Lucia has been calculated to be 12.1 per cent of GDP by 2025, rising to 24.5 per cent by 2050 and 49.1 per cent by 2100.[1]

EXPECTED OUTCOMES

1. Enhanced enabling environment for climate adaptation action in the fisheries sector
2. Enhanced nutrition, food availability, quality and security through adaptation in the fisheries sector
3. Strengthened partnerships for building sustainable and resilient fisheries in a changing climate
4. Strengthened preparedness for climate variability and extremes in the fisheries sector

IMPLEMENTATION AND FUNDING

It is expected that the execution of the SASAP's measures in the next 10 years will result mostly from their inclusion in projects and programs funded from both national and international sources. However, it is also assumed that over time adaptation will become immersed in all new development projects of the sector and that the national institutions involved will be able to generate revenue from their regulatory functions (e.g., user fees, royalties, licenses, and others) that can possibly be directed to help supplement other support received for adaptation. **To support fundraising efforts**, the SASAP is complemented by a series of **project concept notes**.

FISHERIES IN SAINT LUCIA

In Saint Lucia, small-scale traditional fishing forms a large part of the social fabric and economy of many coastal communities. It supports livelihoods for 1,170 households[2] and contributes to tourism, healthy lifestyles and food security. In 2016, the total annual production for commercial capture fisheries in the country was 1,732 tonnes, with the offshore pelagic fishery accounting for 69 per cent of the annual landings.[3] However, fisheries landings have been progressively declining in the past 10 years.

Aquaculture is seen as a valuable component of the agricultural diversification thrust and an industry with the potential to grow significantly, which will reduce dependence on falling wild-caught fish stocks.

CHALLENGES TO THE DEVELOPMENT OF THE FISHERIES SECTOR UNDER A CHANGING CLIMATE

- Reduced fish landings.
- Outdated vessels.
- High price of fuel and fishing gear.
- Considerable fish imports.
- Large waves of Sargassum seaweed, affecting fish and fishing operations.
- Changes in availability and catchability of pelagic fishes (e.g., dolphinfish and tuna) and high-value species such as spiny lobster, conch and shrimp.
- Increase of ciguatera poisoning.
- More difficult fishing conditions. Fishers will have to fish longer or travel further to maintain catch rates, with both financial and safety implications.
- Decreased profitability of fishing, with impacts on fishers, the post-harvest sector, national food security and food sovereignty.
- Expected loss of fishing livelihoods. Fishers will need to look for alternative—and already scarce—employment opportunities.

[1] Bueno, R., Herzfeld, C., Stanton, E.A., Ackerman, F. (2008). *The Caribbean and Climate Change: The Costs of Inaction*. Medford, Massachusetts: Stockholm Environment Institute – US Center, Global Development and Environment Institute, Tufts University.

[2] GoSL (2013). Census of the Fisheries Sector in Saint Lucia 2012. Ministry of Agriculture, Food Production, Fisheries and Rural Development.

[3] GoSL (2017). Annual Fish Landings Data of 2017. Department of Fisheries, Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives.

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CONTENTS

1. SUMMARY OF CONCEPT NOTES FOR CLIMATE CHANGE ADAPTATION PROJECTS IN SAINT LUCIA'S FISHERIES SECTOR

The Government of Saint Lucia has formulated a National Adaptation Plan, NAP (2018-2028) and Sectoral Adaptation Strategies and Action plans (SASAPs) to ensure that effective steps are taken, in a coordinated and timely manner, to address the challenges posed by climate change and minimise, to the extent possible, damages and losses which could exceed 24.5% of GDP by 2050 and 49.1% by 2100, if no action is taken.

The NAP and SASAPs detail adaptation objectives and priority measures; propose activities and timing for the execution of the measures and offer project concept notes for resource mobilisation and implementation. This document summarises the **project concept notes prepared under the lead of the Department of Fisheries** for Saint Lucia's Fisheries SASAP. By allowing the implementation of the measures in the SASAP, the projects proposed will contribute to building national capacities for adaptation planning and integration, while accelerating the implementation of climate adaptation and risk reduction actions that are critical to safeguarding the country's socioeconomic and environmental systems under a changing climate.

The project concept extracts listed here are a reflection of the measures and project concept notes contained in Saint Lucia's NAP and Fisheries SASAP. The extracts are not listed in order of priority. Given that these documents are living or organic, it is envisaged that additional project concept notes will be added over time.

While the **lead agency for *Saint Lucia's Sectoral Adaptation Strategy and Action Plan for the Fisheries Sector (Fisheries SASAP) 2018-2028* is the Department of Fisheries**, the implementation of projects and programmes would require the involvement of multiple agencies and stakeholders. In some cases, collaboration with other lead agencies would be warranted.

No	Title	Summary	Indicative Beneficiaries	Indicative Cost	Private sector involvement	Duration
1	Piloting a financial system to build the capacity of fishers to adapt to climate change	This project seeks to develop, test and promote innovative financing mechanisms and models for overcoming barriers and facilitating fishers' access to affordable finance (based on lessons learned by the Saint Lucia Development Bank (SLDB) and Credit Union from their small-loan disbursement programmes and in line with the Climate Change Adaptation Policy's Finance element.	Fishers and their value chain actors	USD 300,000	yes	2 years
2	Expanding sustainable financing for the provision of marine ecosystem	This project aims at promoting sustainable conservation financing mechanisms developed through the 'Sustainable Financing for Eastern Caribbean Marine Ecosystems Project" which was tested	All Saint Lucians,	USD 300,000	Possible	3 years

No	Title	Summary	Indicative Beneficiaries	Indicative Cost	Private sector involvement	Duration
	services under a changing climate	and successfully adopted in Eastern Caribbean countries. The project will contribute to finance the expansion of the marine protected areas network the region and establish research and observation systems needed for improving ecosystem management decisions. The financing system consists of a 1:1 matching agreement between the Caribbean Biodiversity Fund (CBF) and the countries involved. Support is required for setting a national fund to help Saint Lucia generate revenue to match with the CBF to increase fund allocation to the country.	particularly fisherfolk			
3	* Increasing the capacity of fishers and other actors to manage climate risks through improved data management and Early Warning Systems (EWS)	To increase safety at sea and make fishing operations more efficient, this project proposes the design and development of a mobile phone application that allows fishers to access timely, accurate and useful meteorological data and be able to record real-time catch data. Through the app, this information will allow them to make quick decisions on hazardous areas to avoid.	All Saint Lucia's fishers and fisheries value chain actors	USD 200,000	yes	1 year
4	Development and Implementation of a National Coral Reef and Seagrass Bed Management and Enhancement Policy and Action Plan to reduce the impacts of climate change	This initiative aims at building and expanding at the national level, the results of the "Coral Reef Enhancement Action' project, which led to the preparation of a Plan of action for coral reef enhancement within the Pointe Sables Environmental Protection Area (PSEPA); built national capacities on coral reef enhancement activities and delivered a set of guidelines for the preparation of reef enhancement plans in Saint Lucia.	Fishers, tourism sector, dive operators, coastal communities	USD 800,000	N/A	5 years
5	Strengthening fresh water aquaculture and marine aquaculture through	This project seeks to foster climate resilient freshwater aquaculture and marine aquaculture production and businesses through the identification, testing, introduction and promotion of	Seafood consumers, freshwater and	USD 750,000	yes	5 years

*Projects with mitigation co-benefits

No	Title	Summary	Indicative Beneficiaries	Indicative Cost	Private sector involvement	Duration
	diversification and business opportunities	improved climate-resilient farming practices, technologies, products and by-products (e.g. improved ponds, improved feed, use of resilient local fish species). Also, the project seeks to formulate a clear strategy and an action plan on how aquaculture for fish (e.g. prawn, tilapia) and sea moss production can be developed into a robust, sustainable business that could contribute to socioeconomic and environmental well-being, as well as an alternative livelihood opportunity in a changing climate.	marine aquaculture farmers, fish farming households			
6	Upgrading fisheries facilities to be more resilient to the impacts of climate change	This project seeks to improve existing fisheries complexes in Saint Lucia to be more resilient to the impacts of climate change e.g. hurricane straps, coastal stability; starting with the improvement of the Choiseul Fisheries Complex Facility and to develop a viable business model to raise revenue to maintain and operate the facility.	Fishers	USD 1,400,000	yes	2 years
7	Upgrading and Installing Climate Resilient Infrastructure at the Castries Fish Landing Site	This project proposes the restoration and retrofitting of the Castries fish landing site, which has deteriorated from the exposure to the elements for years and is not fit to sustain recurrent hydrometeorological impacts expected with climate change.	Fishers, buyers, fisher families, management of staff of facility, visitors, general public	To be assessed	yes	N/A
8	Pilot testing climate resilient and fuel-efficient fishing fleets in Saint Lucia	This project proposes the acquisition of a small fleet to be shared among members of fishers' cooperatives as a pilot test of business and fisheries' models. Business model is to nurture vertical integration in the sector and the amalgamation of fishing vessels and experienced fishers into larger business enterprises.	Fishers, Cooperatives	USD 600,000	yes	2 years

*Projects with mitigation co-benefits

No	Title	Summary	Indicative Beneficiaries	Indicative Cost	Private sector involvement	Duration
9	Coastal Adaptation Blueprint for Saint Lucia	This project aims to provide a critical evaluation of the best available information for guiding decisions on complex climate change and environmental issues. This information is crucial for planning and implementing adequate climate change adaptation measures, and also to inform the development and implementation of policies that permit building climate resilience of marine resources and associated and sectors.	Saint Lucia's coastal areas' inhabitants	USD 1,650,000	yes	30 months
10	Piloting water and feed efficient aquaculture systems to increase production, profitability, employment and climate resilience in the sector	This project proposes to pilot the introduction of low water input aquaculture production systems and the development of a low-cost nutritionally complete feed for the island's aquaculture (shrimp and tilapia) as a way to increase productivity, create new businesses, improve water use efficiency and reduce the risk of conflicts for scarce water and land in non-flooding areas with climate change.	Residents of Mahout, Micoud, in a first phase	USD 400,000	yes	4 years

*Projects with mitigation co-benefits

2. CONCEPT NOTES

The project concept notes outlined here are a reflection of the measures contained in Saint Lucia's NAP and Fisheries SASAP. They are not presented in order of priority. Given that these documents are living or organic, it is envisaged that additional project concept notes will be added over time.

While the lead agency for *Saint Lucia's Sectoral Adaptation Strategy and Action Plan for the Fisheries Sector (Fisheries SASAP) 2018-2028,* is the Department of Fisheries, the implementation of projects and programmes would require the involvement of multiple agencies and stakeholders. In some cases, collaboration with other lead agencies would be warranted.

PROJECT CONCEPT 1. PILOTING A FINANCIAL SYSTEM TO BUILD THE CAPACITY OF FISHERS TO ADAPT TO CLIMATE CHANGE

CONCEPT NOTE 1	
Project title	**Piloting a financial system to build the capacity of fishers to adapt to climate change**
Objective(s)	To develop and promote competitive value chain financial products and services for fishers to diversify or invest in their livelihood activities.

Rationale

In Saint Lucia, land-based agricultural activities and fisheries production have declined in recent decades, leading to a net import food bill and to concerns regarding future national food security and nutrition. The Government of Saint Lucia has made efforts to support the diversification of these sectors. This has been well-received. However, fishers and farmers require financial support to engage in or expand profitable business ventures.

Despite being well trained and experienced, many fishers are unable to access competitive and affordable finance to start, operate and sustain or expand their businesses, mainly because local financial institutions are reluctant to offer them loans as they may lack collateral. Other reasons for loan request rejections are the variability of fishers' incomes and the consequent high-risk of loan defaults or the low volume of transactions, associated with high transaction costs, leading to low returns. Climate change adds to the lenders' concerns.

Based on lessons learned by the Saint Lucia Development Bank (SLDB) and Credit Union from their small-loan disbursement programmes and in line with the Climate Change Adaptation Policy's Finance element, this project seeks to develop, test and scale up innovative financing mechanisms and models for overcoming the mentioned barriers and facilitating fishers' access to affordable finance.

Beneficiaries

Fishers and their value chain actors (suppliers, processors, distributors, retailers). Including women and youth led-Small and Medium Enterprises

Activities and Tasks

- Start loan/credit line as working capital with favourable terms and concessional interest;
- Create a matching rebate or sweat-equity instead of 'subsidy';
- Partial loan guarantee as means to share and transfer risks in case of loan defaults;
- Training and outreach to fishers to improve their capacity to use and take advantage of the loans/credit lines.

Main outputs/products

Outcome: Improved access to competitive finance to scale up climate resilient fisheries best practices and businesses

- Feasibility study to assess the needs, gaps, opportunities, challenges and lessons learned (from SLDB and Credit Union) in the development and disbursement of value chain financial products and services in Saint Lucia to implement fisheries businesses conducted, endorsed and published
- Value chain financial products and services developed, tested, improved, endorsed and promoted for selected fishers (payment terms, interest rate)
- Viable, proven and competitive value chain financial products and services disbursed to support fishers' start or expand their climate resilient business ventures
- Knowledge and communication products developed and endorsed to train value chain actors on how to disburse (from bank), access the finance (by fishers) and advice on

CONCEPT NOTE 1	
Project title	**Piloting a financial system to build the capacity of fishers to adapt to climate change**
business and finance management for fishers	
Implementation Potential partners: Government agency with responsibility for Fisheries and Financial institutions (e.g. Saint Lucia Development Bank-SLDB, Credit Union). Responsible agency/partner: Government agency with responsibility for Fisheries	
Cost estimate USD 300,000	
Duration	**2 years**
Additional information • This project is aligned with the Fisheries SASAP's measure 22 and can contribute to implementing measures 16 and 20	

PROJECT CONCEPT 2. EXPANDING SUSTAINABLE FINANCING IN SAINT LUCIA FOR THE PROVISION OF MARINE ECOSYSTEM SERVICES UNDER A CHANGING CLIMATE

CONCEPT NOTE 2	
Project title	**Expanding sustainable financing for the provision of marine ecosystem services under a changing climate in Saint Lucia**
Objective(s)	To address Saint Lucia's marine and coastal resource degradation, climate change threats and management challenges through access to sustainable conservation funding**.**

Rationale

Climate change and environmental degradation are serious threats to Saint Lucia, its natural resources, populations and economy. The designation of new and expansion of existing conservation areas has been included in the National Adaptation Plan (NAP) as a no-regrets adaptation measure for the country to conserve under a changing climate, its biodiversity and critical ecosystems. Fisheries, and some important economic activities (such as ecotourism) depend upon these natural resources. However, reduced national resources limit the possibility of establishing and maintaining important conservation land and marine areas.

This project aims at increasing Saint Lucia's capacity to benefit from a sustainable conservation financing mechanism developed through the 'Sustainable Financing for Eastern Caribbean Marine Ecosystems Project" which was tested and successfully adopted in Eastern Caribbean countries. This initiative was supported by the Global Environment Facility (GEF) "to enhance the long-term sustainability of protected area networks in the participating countries". The financing system consists of a 1:1 matching agreement between the Caribbean Biodiversity Fund (CBF) and the countries involved. Support is required for setting a national fund to help Saint Lucia generate revenue to match with the CBF to increase fund allocation to the country and expand the GEF project has brought to date.

The objectives and achievements of the GEF project were highly relevant, given the economic and environmental importance of marine ecosystems in the Eastern Caribbean region. Scaling up this initiative in Saint Lucia is even more important now, as a study emerging from the same project indicates that the Eastern Caribbean could lose between US$350 million and US$870 million per year between 2015 and 2050 due to declining fish stocks, reduced tourism, loss of shoreline protection, and coral reef degradation. Financial mechanisms to increase the cover of healthy ecosystems and prevent many of the business-as-usual losses is a priority for building Saint Lucia's resilience with climate change.

The GEF project consisted of the following 3 components, which could be further extended in Saint Lucia, taking into consideration the lessons learned in the design and implementation of the regional project.

Component 1: Establishment of Sustainable Financing Mechanisms:

- This component was to finance the facilitation of the establishment of the Caribbean Biodiversity Fund (CBF) and carry out its initial capitalisation.
- The aim was to generate sufficient income to finance sustainable management activities in the protected areas of participating countries through their respective National Protected Area Trust Funds (NPATF).

CONCEPT NOTE 2	
Project title	**Expanding sustainable financing for the provision of marine ecosystem services under a changing climate in Saint Lucia**

- Furthermore, this component was to finance the facilitation of establishing respective NPATFs in each of the participating countries, as well as the designing and implementing of a capitalisation strategy to generate additional financing to that provided by the Caribbean Diversity Fund.

Component 2: Strengthening and phased expansion of marine protected area networks:

- This component was to finance the expansion of the systems of the marine protected areas through the designation of new ones and the establishment of demonstration sites in participating countries to showcase best practices in the management of marine protected areas.

Component 3: Deployment of a regional monitoring and information system:

- This component was to finance the facilitation of eco-regional and management effectiveness monitoring, including regular observation of data collection on biophysical and social economic indicators within the protected areas network, and assessment of management effectiveness.
- Furthermore, this component was to finance the establishment of an electronic database for an eco-regional environmental information system and the facilitation of the dissemination of results derived from monitoring systems.

Beneficiaries: Marine resource users

Activities and Tasks

- Set-up fund or other national revenue-generating mechanism to increase Saint Lucia's access to CBF's funds.
- Expand the implementation of the components of the GEF project in Saint Lucia.

Main outputs/products

- Sustainable financing mechanisms and business models to scale up marine ecosystem services in selected sites of Saint Lucia established and operating
- Research and observation systems, part of the project in place and monitoring environmental and climate change on fish stock, fish nurseries and eco systems
- Promotion and scaling up of Sustainable Financing Activities for Marine Ecosystem services

Implementation
Saint Lucia National Conservation Fund (SLUNCF)

Cost estimate: USD 300,000

Duration 3 years

Additional information This project can contribute to implementing Fisheries SASAP's measures 1, 8, 9, 11, 16, 20, 22 and 31

PROJECT CONCEPT 3. INCREASING THE CAPACITY OF FISHERS AND OTHER ACTORS TO MANAGE CLIMATE RISKS THROUGH IMPROVED DATA MANAGEMENT AND EARLY WARNING SYSTEMS (EWS)

CONCEPT NOTE 3	
Project title	**Increasing the capacity of fishers and other actors to manage climate risks through improved data management and Early Warning Systems (EWS)**
Objective(s)	To create a mobile app based on improved climate monitoring to allow fishers to make informed decisions, increase fishing efficiency, safety at sea and reduce fuel consumption.

Rationale

Fishing communities and livelihoods are amongst the most vulnerable to climate change in Saint Lucia. Not only is climate change projected to reduce fish stocks, but it will induce stronger winds, stronger and more unpredictable rainfall events and will increase the intensity of tropical storms, making fishing activities more expensive (as more fuel would be needed to reach fish stocks), but also more dangerous.

To increase safety at sea and make fishing operations more efficient, this project proposes the design and development of a mobile phone application that allows fishers to access timely, accurate and useful meteorological data and be able to record real-time catch data.). . Through the app, this information will allow them to make quick decisions on hazardous areas to avoid while fishing. The app will be complemented with the installation of technology to send biophysical data remotely on the fish caught aggregation density and well as meteorological data). The app will provide fishers with information on various hazards that may affect them (i.e. sea surges, high winds).

Beneficiaries: All Saint Lucia's fishers and fisheries value chain actors

Activities and Tasks

- Identify and improve existing data collection systems that can be used for generating monitoring information relevant to the fishers (daily weather, movement of fish stocks, sea weed, position of FADs, etc.);
- Design, develop and pilot the app;
- Promote and raise awareness about the app;
- Train fishers on the use of the app.

Main outputs/products

- Material for SMART FADs
- User friendly mobile app designed, developed, piloted, improved, operating and used by fishers
- Communication products to promote the app created and used
- Training materials on the use of the app

Implementation: Government agency with responsibility for Fisheries

Cost estimate: USD 200,000

Duration 1 year

Additional information:

- This project is aligned with the Fisheries SASAP's measures 23, 24,25, 26, 27, 28 and can contribute to implementing measures 1, 4, 5 and 8
- This project will build on the lessons learned from the regional projects 'Fisheries Early Warning Emergency Response' (FEWER) and 'Caribbean Fisheries Co-Management Project' in Saint Lucia [CARIFICO], funded by the Japan International Cooperation Agency (JICA).
- The project will benefit from the existing wide mobile phone coverage in Saint Lucia and from the fact that most of the phones sold in the country are smart phones.
- By providing fishers the location of FADs, which they can track through GPS (in case phone signal is lost at sea), the app will allow fishers to save time and fuel during their fishing activities; therefore, **this adaptation project will offer climate change mitigation co-benefits**

PROJECT CONCEPT 4. DEVELOPMENT AND IMPLEMENTATION OF A NATIONAL CORAL REEF AND SEAGRASS BED MANAGEMENT AND ENHANCEMENT POLICY AND ACTION PLAN TO REDUCE THE IMPACTS OF CLIMATE CHANGE

CONCEPT NOTE 4	
Project title	**Development and Implementation of a National Coral Reef and Seagrass bed Management and Enhancement Policy and Action Plan to reduce the impacts of climate change**
Objective(s)	To create a National Coral Reef Enhancement Action Plan by scaling-up a successful pilot project.

Rationale

Saint Lucia's coral reefs are among the most valuable natural assets of the country. They provide breeding grounds and nursery habitat for economically important fisheries and are a major tourism attraction. They also protect coastal areas and communities against the impacts of hurricanes and storm surges. However, pollution from land-based activities reaching the sea, together with climate change-induced ocean acidification and warmer waters, are leading to the destruction of these important ecosystems.

To improve the health status of coral ecosystems and improve their capacity to deliver their essential environmental and economic services with climate change, this project seeks to create a National Plan for enhancing coral reef systems.

This initiative aims at building and expanding at the national level, the results of the "Coral Reef Enhancement Action' project, which led to the preparation of a Plan of action for coral enhancement within the Pointe Sables Environmental Protection Area (PSEPA); built national capacities on coral enhancement activities and delivered a set of guidelines for the preparation of reef enhancement plans in Saint Lucia.

Beneficiaries: Fishers, tourism sector, dive operators, coastal communities.

Activities and Tasks

- Develop a National Climate Resilient National Coral Reef Enhancement policy and Action Plan, following the guidelines prepared during the 'Coral Reef Enhancement Action' project;
- Enhance data collection and reporting system to expand parameters and location for coral health and cover;
- Develop remote monitoring of biophysical parameters affecting reef health (triggers of coral bleaching)
- Scale up coral restoration initiatives;
- Map critical sea grass areas, assess health and connectivity to coral areas;

Main outputs/products

- Creation of the National Plan using the results of the 'Coral Reef Enhancement Action' project, as well as the lessons learned from it
- National Coral Reef Enhancement Action Plan endorsed
- Knowledge and communication products created to raise awareness on the importance and engagement in the implementation of the National Plan

Implementation

Government agency with responsibility for Fisheries., working with fishers, dive operators, hotels, and other partners

Cost estimate USD 800,000

Duration 5 year

Additional information

This project is aligned with the Fisheries SASAP's measures 1, 4 and 8 and can contribute to implementing measure 6

PROJECT CONCEPT 5. STRENGTHENING AQUACULTURE AND MARICULTURE FARMING THROUGH DIVERSIFICATION AND BUSINESS OPPORTUNITIES

CONCEPT NOTE 5	
Project title	**Strengthening aquaculture and mariculture farming through diversification and business opportunities**
Objective(s)	To introduce climate resilient aquaculture and mariculture best practices, technologies and products to open alternative livelihood and income generating opportunities under a changing climate.

Rationale

In Saint Lucia, the impacts of climate variability and change have contributed to the decline in land-based agricultural activities and fisheries production, leading to a net import food bill and to concerns regarding future national food security and nutrition. The Government of Saint Lucia has made efforts to support the diversification of these sectors, encouraging aquaculture, among other activities. This has been well-received. However, with climate change, aquaculture activities also face challenges, mainly due to changing temperatures, scarcity and decreased quality of water (due to recurrent dry periods, increased pollution of freshwater resources and salt water intrusion due to Sea Level Rise, reduced availability of dissolved oxygen, and reduced availability of feed, all affecting the productivity and the nutritional value of aquatic products and putting farmers' incomes at risk.

This project seeks to foster climate resilient aquaculture and mariculture production and businesses through the identification, testing, introduction and promotion of improved climate-resilient farming practices, technologies, products and by-products (e.g. improved ponds, improved feed, use of resilient local fish species).

The project seeks a clear strategy and an action plan on how aquaculture for fish (e.g. prawn, tilapia) and seamoss production can be developed into a robust, sustainable business that could contribute to socioeconomic and environmental well-being, as well as an alternative livelihood opportunity.

Beneficiaries : Seafood Consumers, Aquaculture /Mari culture Farmers, Fish farming households

Activities and Tasks

- Identify current and future challenges imposed by climate change and other main factors on Saint Lucia's aquaculture and mariculture activities;
- Conduct a study to determine environmentally sustainable and climate-resilient solutions to existing challenges in the aquaculture and mariculture sectors. This should include best practices and the production of new products and sub-products to increase productivity and income (e.g. diversifying aquaculture to include non-canivorous commodities; marine cage culture and climate-smart technologies such as aquaponics, intensive aquaculture, marine cage culture);
- Identify current and future challenges imposed by climate change and other main factors on Saint Lucia's aquaculture and mariculture activities;
- Conduct a feasibility study for the adoption of the best practices identified and the diversification options available and suitable to Saint Lucia's context, including economic, environmental and market considerations;
- Implement pilot tests of the feasible and best climate-resilient best practices and diversification options for the aquaculture and mariculture sectors;
- Upgrade existing facilities and building capacities for improved training and information transfer to strengthen capacity of the DOF and aquaculture farmers;
- Train aquaculture and mariculture farmers in the identified practices and in the production of new commodities;

CONCEPT NOTE 5	
Project title	**Strengthening aquaculture and mariculture farming through diversification and business opportunities**
• Develop a marketing strategy (including a value chain assessment) for value added aquaculture and mariculture products, as well as an action plan to maximise social and economic benefits for fishers, sea moss producers and processors.	
Main outputs/products • Increased range of aquaculture and mariculture products identified, tested and under production • Best aquaculture and mariculture practices adopted and replicated • Marketing strategy for value added aquaculture and mariculture products developed • Increased income and number of aquaculture and mariculture farmers	
Implementation: Government agencies with responsibility for Fisheries, Commerce, Education.	
Cost estimate: USD 750,000	
Duration: 5years	
Additional information • This project is aligned with the Fisheries SASAP's measures 4, 8 10 and 14 and can contribute to implementing measures 1,2, 11, 13 and 20 • This project builds on the Food and Agricultural Organization (FAO) Seamoss (Eucheuma cottoni) Development Programme (2015 to 2018) and the DFID-funded CARIBSAVE Partnership Seamoss Project and Caribbean Fish Sanctuary Partnership Initiative (C-FISH).	

PROJECT CONCEPT 6. UPGRADING FISHERIES FACILITIES TO BE MORE RESILIENT TO THE IMPACTS OF CLIMATE CHANGE.

CONCEPT NOTE 6	
Project title	**Upgrading fisheries facilities to be more resilient to the impacts of climate change.**
Objective(s)	• To upgrade existing fisheries facilities to be more resilient to the impacts of climate change. • To develop a viable business model to raise revenue to maintain and operate the facilities
Rationale Climate resilient infrastructure plays an important role in providing a safe haven and shelter for fishers during storms. Unfortunately, in Saint Lucia, many of the fisheries facilities fall into disrepair, partly due to lack of funding to maintain and manage them. This is of concern as climate change projections indicate that in the coming decades Saint Lucia will experience stronger and more unpredictable rainfall events, stronger winds and more intense tropical storms, decreasing safety at sea for fishers and exposing fisheries facilities to direct impacts. This project seeks to improve existing fisheries complexes in Saint Lucia to be more resilient to the impacts of climate change e.g. hurricane straps, coastal stability; starting with the improvement of the Choiseul Fisheries Complex Facility and to develop a viable business model to raise revenue to maintain and operate the facility.	
Beneficiaries: Fishers	
Activities and Tasks • Develop building codes and standards for fisheries facilities; • Assessment of climate change readiness of Fisheries facilities; • Build resilience and redesign of pilot sites; • Expand sustainable financing mechanisms to support distress to fishers due to climate – related impacts.	
Main outputs/products • In partnership with local fishers, the needs and challenges of existing fishing complexes identified, surveyed, costed and recommended for upgrading (e.g. Choiseul and Castries Fisheries Complex Facility could be upgraded to reduce sedimentation build up and improve safety) • Upgrading Action Plan (strengthening design, cost, work plan, tendering documents, monitoring and evaluation plan) for upgrading developed and endorsed • Business model to raise revenues (e.g. membership fees, income generating activities) to maintain and operate the facility developed, evaluated, tested and improved • Retrofitting initiative monitored and evaluated • Business model implemented	
Implementation: **Potential partners:** Fishers Cooperatives **Responsible agency/partners:** Government agencies with responsibility for Fisheries and Infrastructure	
Cost estimate: USD 1,400,000	
Duration: 2 years	
Additional information This project is aligned with the Fisheries SASAP's measures 8 ,29 and 30 and can contribute to implementing measures 4 and 10	

PROJECT CONCEPT 7. UPGRADING AND INSTALLING CLIMATE RESILIENT INFRASTRUCTURE AT THE CASTRIES FISH LANDING SITE

CONCEPT NOTE 7	
Project title	**Upgrading and installing climate resilient infrastructure at the Castries fish landing site**
Objective(s)	• To create a more climate resilient, environmentally friendly, sustainable and aesthetically pleasing fishing landing site to serve fishers within the Castries basin • To improve the quality of infrastructure at the Castries fish landing site

Rationale

The high ratio of coastline to land area, coupled with the concentration of people and economic activity along the coast makes Saint Lucia, and in particular, its coastal resources, fishing communities, and infrastructure, highly vulnerable to the impacts of climate change and particularly at risk of Sea Level Rise.

Fisheries-dependent livelihoods and economies are challenged by extreme weather events, such as intense tropical storms and hurricanes and associated storm surges and flooding. Besides irreparable personal injuries and household losses, these events damage and often lead to the loss of vessels, fishing gear – including fish traps and fish aggregating devices (FADs) and impair fish landing sites, fish markets, fishermen's locker rooms, and other onshore facilities.

This project proposes the restoration and retrofitting of the Castries fish landing site, which has deteriorated from the exposure to the elements for years and is not fit to sustain recurrent hydrometeorological impacts expected with climate change. Lamentably, the site no longer offers a conducive environment to carrying out business transactions; fishers and buyers are no longer attracted to the fish landing site. Instead, fishers line-up by the side of the road to sell their catch. This situation poses hazards for fishers, fish buyers and visitors who traverse the area during cruise ship season. This situation is also not sustainable, as the landing site is necessary now and in the coming decades, With climate change, there will be more pressures on livelihoods and every opportunity must be taken to secure and sustain them. An attractive and climate resilience fisheries facility will help facilitate a more seamless transition.

Beneficiaries:

Fishers, buyers, fisher families, management of staff of facility, visitors and the general public

Activities and Tasks

- Needs assessment and pre-freasibility study
- Dredging the fish landing site to remove underwater debris and contaminants in the Castries fishing landing site and to begin the process of cleaning up the coastal waterways.
- Installation of an eco-friendly sewage treatment plant to address the impact of direct sewage dumping into the Castries Harbour.
- Establishment of an engine repair workshop for small fishing craft and stock of spare parts most often used by fishers;
- A boat repair area: a properly equipped boat repair area, including some boat lift out facilities, to enable fishermen to repair their vessels on shore;
- Fishing gear repair area: a small shed with a dry, clean floor for the repair and storage of nets and for other fishing gear;
- Construction of fish vending stalls with overhead cover to encourage fishers to retail fish to the general public in a clean and sanitary areas as opposed to the side of the main John Compton Highway;

CONCEPT NOTE 7	
Project title	**Upgrading and installing climate resilient infrastructure at the Castries fish landing site**
• Repair and/or reconstruction of the jetty to facilitate fishers going out to fish and coming in with their catch; • Upgrade and repair of fishers' storage lockers with climate resilient material to better withstand sea blast and erosion; • Placement of solar lighting, solar compacter waste collection bins to maintain proper garbage disposal practices; • Beautification of Fish Landing Site with plants and other artefacts associated with fishing and ocean; • Establishment of outdoor Sea Food Café.	
Main outputs/products • The Castries fish landing site as a climate resilient model of sustainability and an environmentally friendly site for Saint Lucia and the Caribbean	
Implementation Saint Lucia Fisherfolk Cooperative Society Ltd. in collaboration with the Government agencies with responsibility for Fisheries, Planning and Infrastructure	
Cost estimate: To be assessed and discussed	
Duration: To be assessed and discussed	
Additional information: This project can contribute to implementing Fisheries SASAP's measures 1, 29 and 30	

PROJECT CONCEPT 8. PILOT TESTING CLIMATE RESILIENT AND FUEL-EFFICIENT FISHING FLEETS IN SAINT LUCIA

CONCEPT NOTE 8	
Project title	**Pilot testing climate resilient and fuel-efficient fishing fleets in Saint Lucia**
Objective(s)	To promote and strengthen climate resilient and efficient fishing fleets equipped with modern gear to improve business resilience, yield, productivity and income under a changing climate

Rationale

Fishing communities and livelihoods are highly vulnerable to climate change in Saint Lucia. Not only climate change is projected to reduce fish stocks, but it will induce stronger winds, stronger and more unpredictable rainfall events and will increase the intensity of tropical storms, making fishing activities more expensive (as more fuel would be needed to reach fish stocks) but also more dangerous.

Low fish landings, productivity and fishing incomes are currently often associated with the outdated fishing equipment and gear used, as well as with fuel inefficient fishing fleets. To remain competitive and viable under the increasingly difficult fishing conditions induced by climate change, Saint Lucian fishers need access to fuel efficient vessels, equipped with modern gear. This project proposes the acquisition of a small fleet to be shared among members of fishers' cooperatives as a pilot test of business and fisheries' models. The business model is to nurture vertical integration in the sector and the amalgamation of fishing vessels and experienced fishers into a larger business enterprise to reduce operating costs. The pilot test would be in investment in one to three vessels.

Beneficiaries: Fishers cooperatives

Activities and Tasks

- Appropriate vessel, fishing equipment and gear selected and procured;
- Legal documents and agreements for vessel ownership are signed;
- MoU for the Business model for the vessel's operation are signed between partners members of the fisheries cooperative;
- Captains and crew who will be required to operate mechanised fishing vessel and gear obtain required certification to operate vessel;
- Captain and crew obtain modernised fishing equipment and gear training to engage in sustainable fishing;
- Necessary licenses and permits to allow the pilot project to take place are issued to the relevant parties;
- Proper records on fish catch and other auxiliary data such as fishing days, fuel consumption, fishing grounds etc. are maintained;
- Captain, crew and processors obtain certification in fish handling, processing and business skill;
- Catch structure comprising adult ocean pelagic species developed and promoted.
- Analytical report on the cost and returns and lessons learned of the pilot fishing vessel operations documented and presented to all key stakeholders for knowledge sharing.

Main outputs/products

- Acquisition of appropriate vessels for undertaking a pilot project that will result in greater efficiencies and meet necessary standards in the fishing industry
- Efficient operation of acquired fishing vessel
- Development of viable climate resilient fishing models and businesses

Implementation

Responsible agency/partners: Government Agency with responsibility for Fisheries.

CONCEPT NOTE 8	
Project title	**Pilot testing climate resilient and fuel-efficient fishing fleets in Saint Lucia**
Partners: organisations: Fisheries Cooperatives, Attorney General Office	
Cost estimate: USD 600,000	
Duration: 2 years	
Additional information This project is aligned with the Fisheries SASAP's measures 7, 8 ,9 and 18 and can contribute to implementing measures 4, 10, and 11	

PROJECT CONCEPT 9. COASTAL ADAPTATION BLUEPRINT FOR SAINT LUCIA

CONCEPT NOTE 9	
Project title	**Coastal Adaptation Blueprint for Saint Lucia**
Objective(s)	• To assess both climatic and non-climatic pressures and the impact on coastal ecosystems. • To develop spatially explicit maps of ecosystem types to include sea bed conditions, bathymetry, etc. • To develop socio- economic scenarios of selected coastal communities for use in vulnerability and adaptation assessments. • To develop climate change scenarios for defining the necessary adaptation activities. • To generate indicators of impact, vulnerability and adaptation to climate change in the coastal zone. • To identify optimal locations and species for monitoring programmes, to best inform adaptive management via delivery of up- to- date relevant information. • To develop and test/implement adaptation strategies for case study sites, to include tripartite ecosystem (mangrove, seagrass bed, coral reefs) rehabilitation and restoration activities involving local communities/stakeholders

Rationale

Climate change adaptation decisions and actions in Saint Lucia are based on data that is inadequate, sporadic, fragmented and poorly shared. Most of the coastal management, planning and development interventions inadequately consider climate risks and as such, there is a need to better understand climatic and human pressures and related risks in coastal management decision-making.

Coral reefs, mangroves and sea grass beds are important marine ecosystems and provide valuable goods and services The ability of these ecosystems to sustain the generation of goods and services is being threatened by a myriad of natural and anthropogenic disturbances, which result in their degradation and alteration of their ecological complexity These disturbances include storms and hurricanes; (increase sea surface temperature; overfishing; mechanical injury and derived effects from divers (and anchoring; and terrestrial pollutant runoff related to unregulated agricultural practices, land conversion and development activities. Climate change has resulted in, and is expected to, exacerbate the degradation and decline of these critical marine ecosystems.

The reduction of local stresses such as pollution, sedimentation, mechanical damage and overfishing, as well as the protection of critical areas, where natural environmental conditions improve resistance and resilience, is expected to accelerate recovery of these ecosystems. However, one of the major challenges for natural resources managers, is the continual collection of data as it relates to climatic and ecosystem changes. Many of the islands lack both the financial and human capacity to continue to monitor these changes outside of donor-funded projects. Fortunately, there is now a move towards the use of citizen science as well as the use of everyday technology to assist in the monitoring of changes to the ecosystems.

This project aims to provide a critical evaluation of the best available information for guiding decisions on complex climate change and environmental issues. This information is crucial for planning and implementing adequate climate change adaptation measures, and also to inform the development and implementation of policies that permit building climate resilience of marine resources and associated and sectors.

CONCEPT NOTE 9	
Project title	**Coastal Adaptation Blueprint for Saint Lucia**

At this time Marine Spatial Planning, remains primarily as a concept rather than a well-defined framework in the context of addressing the conflicting objectives of climate change adaptation and usage of the marine space in Saint Lucia. It is expected that through the implementation of this project, a robust, reliable and comparable collection of data will enable the development of climate change decision support tools to organise, analyse and in inform the MSP process.

Beneficiaries: Saint Lucia's coastal areas' habitants

Activities and Tasks

- A spatial decision support system (DSS) will be developed which will allow for visual representation of data that will be generated from the following assessments;
  - Climatic and non- climatic pressures
  - Critical marine habitats
  - Capture Fisheries Data
  - Socio- economic dependencies and interactions
- Development of a methodology that can be replicated and will gather the historic and current local knowledge and perception of climatic events, impacts that can be used for better integrated decision- making and support the DSS;
- Development and implementation of Rapid Adaptation Plans (RAPs) for proposed sites (based on outputs and recommendations from Component 1) to include coral reef and seagrass beds enhancement.

Main outputs/products

- Field survey on ecological, climatic (temperatures, sea level rise , pH, etc.) and non- climatic (pollution, sedimentation, etc) parameters resulting in an assessment of the health status of coral reefs, seagrass beds and mangroves, as well as the provision of background data on factors influencing ecosystem health
- Assessment of the socio-economic sectors and level of their dependency from the relevant stakeholder groups to determine community socio- economic vulnerabilities
- Spatial decision support system and GIS- based web viewing tool
- List of species present in seagrass beds, coral reef and mangroves; present coral cover of live coral and seagrass; frequency of disease occurrence; composition of biodiversity among sites; coral reef and seagrass health indices
- Build capacity among stakeholder and communities to assess and monitor habitat health.
- Rapid Adaptation Plan to include, but not be limited to, coastal habitat enhancement and monitoring plan
- Feasibility Assessment Report for habitat restoration intervention area
- A coastal habitat (mangrove, coral reef and seagrass) seeding/nursery procedures/ plan
- A complete pilot habitat restoration
- Monitoring Plan

Implementation: Government Agency with responsibility for Fisheries

Cost estimate: USD 1,650,000.00

Duration: 1.5 years (30 months)

Additional information

This project is aligned with the Fisheries SASAP's measures 4, 6, 8 and 31 and can contribute to implementing measures 1, 24,26, 27 and 28

PROJECT CONCEPT 10. PILOTING WATER AND FEED EFFICIENT AQUACULTURE SYSTEMS TO INCREASE PRODUCTION, PROFITABILITY, EMPLOYMENT AND CLIMATE RESILIENCE IN THE SECTOR

CONCEPT NOTE 10	
Project title	**Piloting water and feed efficient aquaculture systems to increase production, profitability, employment and climate resilience in the sector**
Objective(s)	To test the introduction of water efficient aquaculture systems in Saint Lucia to reduce drought-related risks To develop local complete shrimp and Tilapia feeds to reduce aquaculture costs, increase productivity and generate employment

Rationale

In Saint Lucia, the impacts of climate variability and change have contributed to the decline in land-based agricultural activities and fisheries production, leading to a net import food bill and to concerns regarding future national food security and nutrition. The Government of Saint Lucia has made efforts to support the diversification of these sectors, encouraging aquaculture, among other activities. This has been well-received. However, with climate change, aquaculture activities also face challenges, mainly due to changing temperatures, scarcity and decreased quality of water (due to recurrent dry periods, increased siltation and pollution of freshwater resources and salinity intrusion due to Sea Level Rise), reduced availability of dissolved oxygen, and reduced availability of feed, all affecting the productivity and the nutritional value of aquatic products and putting farmers' incomes at risk.

Aquaculture in Saint Lucia has started experiencing some of the projected impacts of climate change referenced above. Recurrent flooding and drought are changing the way farmers engage in this sector. They have started to construct small and less productive ponds in areas away from the valleys where there is no sufficient flat land available, just to reduce the increasing risk of flooding in flood prone valleys, brought about by stronger and more unpredictable rains. Tensions between crop and aquaculture farmers have started to build around their competing water use during dry periods. Further, aquaculture farmers currently use local feeds that are not stable in water, (leading to wastage, pollution and to less than optimal growth); or incur high imported feed purchase costs, which reduces their income.

Given the importance of making the aquaculture sector a profitable alternative or complement to the more climate exposed crop agriculture and marine fisheries, it is of necessary to increase the operational efficiency and production of aquaculture systems in Saint Lucia, while considering the potential impacts of climate change in the sector. This project proposes to pilot the introduction of low water input aquaculture production systems and the development of a low-cost nutritionally complete feed for the island's aquaculture (shrimp and Tilapia) as a way to increase productivity, create new businesses, improve water use efficiency and reduce the risk of conflicts under a changing climate change.

Beneficiaries: Pilot area residents (possibly Mahout, Micoud,)

Activities and Tasks

- Identify, purchase and install water-efficient aquaculture systems and technologies to introduce at the pilot sites;
- Train farmers on the use of the water efficient aquaculture systems;
- Pilot the water efficient aquaculture systems;
- Conduct research and feasibility study on complete shrimp and Tilapia feed alternatives that could be produced in Saint Lucia;
- Pilot the production and use of the complete feed alternatives;

CONCEPT NOTE 10	
Project title	**Piloting water and feed efficient aquaculture systems to increase production, profitability, employment and climate resilience in the sector**
• Evaluate the results of the use of the alternative complete feeds produced for scaling-up production; • Train farmers/vulnerable groups on the production of the alternative complete feeds; • Train farmers on the correct use of the alternative complete feeds.	
Main outputs/products • Increased climate resilience in national aquaculture systems • Created employment opportunities for vulnerable groups (e.g. youth), thus helping to reduce social ills and reduce rural to urban migration • Reduced pollution • Increased production of Tilapia and shrimp on the island • Increase knowledge and capacity of technical officers to provide support to farmers and interested persons	
Implementation Government agencies with responsibility for aquaculture, agriculture, commerce; private sector (technology suppliers); and aquaculture farmers.	
Indicative cost: USD 400,000	
Duration: 4 year	
Additional information: This project is aligned with the Fisheries SASAP's measures 16 and 17 and can contribute to implementing measures 2, 4, 8, 9 and 10	