

# **Assessing climate change vulnerability in Dieppe Bay's fisheries** using value chain analysis

The Caribbean Natural Resources Institute (CANARI) and the Department of Marine Resources (DMR) in Saint Kitts and Nevis engaged fisherfolk and their organisations in Dieppe Bay in value chain analysis to systematically assess how climate change impacts on fisheries-related enterprises, from harvesting to processing to marketing and sales, and identify actions to reduce these impacts and add value to their fish products. This analysis was conducted in 2020 under the Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project (CC4FISH). Two value chains were identified as relevant for Dieppe Bay - lobster (e.g. Caribbean spiny lobster) and pelagic fish (e.g. dolphinfish, marlin, tuna)

# Key climate impacts on the fisheries value chain in Dieppe Bay



### Hurricanes. storms and rough seas affect safety at sea, reduce fishing days and cause direct

damage/loss to

fisheries assets



Storm surges contribute to coastal erosion, and flooding affecting fisheries and other coastal infrastructure



Sargassum influx clogs landing sites and causes damage to boat engines and gear



Changes in ocean conditions e.g., strong ocean currents, warmer waters and pollution from land lead to reduction in catch and degradation of coral reefs



Extreme weather conditions including intense rainfall and droughts/dry spells cause power and water supply disruptions which affect fish processing and marketing



# Other challenges

Lack of storage and processing facility (as cooperative building damaged) Lack of access to affordable financing Limited training and equipment for fish processing Heavy dependence on tourist season to fetch a good price and unfair price competition as not all fishers willing to sell at the same price I Inability to meet the demand for local fish due to previous factors

## Priorities for adaptation and enhancing fisheries value chains

- 1. restoring and proper outfitting of the fishing cooperative building with facilities to support fishing enterprises, and for hurricane preparedness;
- encouraging fisherfolk to join the fishing cooperative to grow the organisation and reap collective benefits;
- training opportunities for fisherfolk and community members in small business development and areas such as smoking, salting and filleting so that they can add value to fisheries products; and
- active marketing of fisheries products via engagement in activities such as fish or lobster festivals (at least once per month).







About the project: The Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project (CC4FISH) was implemented by the Food and Agriculture Organization of the United Nations (FAO) in collaboration with national fisheries authorities in 7 countries, with funding from the Global Environment Facility (GEF).

# **Dieppe Bay lobster value chain**

### Inputs



### **Production**



# distribution

### Marketing



### Vulnerabilities

- Sargassum gets caught in boat engines, and make it difficult to get the boats into the water at times.
- Hurricanes and storms affect the fishers' ability to go to sea. Loss of electricity during storm/hurricane events affects proper storage.
- Hurricanes/storms and sea surges cause beach erosion and flooding which result in silt entering and damaging lobster reef habitat.

- Cooperative building was extensively damaged by hurricanes and is now unusable leaving fishers with no storage or processing
- Heavy rains cause erosion of roads making it difficult to transport products.
- Pricing competition created among fishers.

- A lack of training in areas such as pricing, packaging and labelling techniques.
- Lack of labelling and packaging equipment Adverse weather
- and flooding from hurricanes cause damage to storage and processing facility and electricity fluctuations which damages equipment

 Adverse weather conditions causes frequent interruptions in internet service thus leaving fishers with limited measures to advertise and market their products.

- Demand for lobster depends heavily on the tourism industry which can be affected by natural hazards.
- Storm and hurricane activity affect electricity supply which negatively impacts fish storage/ processing and thus reduces supply to consumers.

## Dieppe Bay pelagic fish value chain

### Inputs



Production



distribution

Marketing



### Vulnerabilities

crew, bait, FAD, wate

- Sargassum gets caught in boat engines and sometimes make it difficult to get boats into the water.
- Hurricanes and storms affect the fishers' ability to go to sea.
- Hurricanes/storms and related flooding cause damage to storage facility. Loss of electricity during these events also affects proper storage.
- Hurricanes/storms also cause beach erosion.

- Lack of a proper facility that can be used to clean, store or process the catch.
- Heavy dependence on government supplied water and electricity which is not very
- The catch by fishers is very unreliable (variable amounts)

- Lack of training in areas such as pricing and other packaging and labelling techniques.
- Lack of labelling and packaging equipment.
- Adverse weather and flooding from hurricanes cause damage to storage and processing facility and electricity fluctuations which damages equipment.

 Adverse weather conditions cause frequent interruptions to the internet service thus leaving the fishers with limited measures to advertise and market their products.

- Demand for fish is greater than the supply.
- Hurricanes/storms and had weather adversely affects the number of persons wanting to purchase







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