Figure 8: Dolphinfish (Mahi mahi) harvested in Barbados. (Credit: Clish Gittens)

of transparency and the perception of the sector as unprofitable also deters further investment. This may be addressed through blended finance and innovative finance approaches and may help to avoid financing overcapitalised fisheries. Seed capital for innovation in the sector, technical assistance to financial institutions on investing in sustainable fisheries, price guarantees and formal contracts for sustainable operators can help to propel the industry further.

Invest in data collection management systems to address the challenges associated with lack of or inadequate data regionally.

National fisheries authorities and departments are often understaffed and lack resources, human and otherwise, for regular stock assessments, data collection and analysis. Therefore, new and innovative systems for data collection and analysis need to be developed to inform decision-making in fisheries management and to guide the progress of the sector nationally and regionally.

Capitalise on increased interest in blue economy investments

In general, the region is facing a major opportunity in the increased interest, and financial and political support for the development of a sustainable blue economy. Advancement of regional fisheries trade and consumption requires significant investment throughout the value chain to make it sustainable, productive and efficient and guarantee a high standard and quality of product. Currently the sector is underinvested, plagued by outdated legislation and data collection and management systems, which limits growth and innovation. It is well-established that regional fisheries require further formalisation through support from governments, investment by the private sector and greater collaboration with fisherfolk.

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Caribbean Natural Resources Institute

The Caribbean Natural Resources Institute (CANARI) is a regional technical non-profit organisation which has been working to promote and facilitate stakeholder participation in the stewardship of natural resources in the Caribbean for over 30 years.

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CANARI **POLICY BRIEF** No.27

Improving intra-regional trade and consumption of seafood in CARICOM

2021

Biodiversity and Ecosystems

Introduction

In the Caribbean region, small-scale fisheries play a vital role in the economies of coastal communities and rural livelihoods. Fisheries provide important sources of income, employment, food and are an essential aspect of many people's identities.

If done sustainably, increasing the consumption and trade of seafood in the Caribbean region can contribute to several positive economic outcomes, including increased food security, enhanced income, and reduced food importation bills. It can also have positive socio-economic outcomes through improved economic resilience and enhanced community health.

Within the Caribbean Community (CARICOM), most nations are net importers of food and food products, importing a combined USD 5 billion in 2018. The trend follows in the seafood sector, with national and regional supplies of seafood and fish products generally unable to satisfy robust demand across CARICOM nations. More than a third of seafood consumed by CARICOM countries is imported[1]. Further, while seafood consumption in the Caribbean region is high[2] compared to global averages, it is 30% less than Pacific Small Island Developing States. This then suggests that there is significant need and scope for increasing both intra-regional (CARICOM-CARICOM) trade of seafood products and the consumption of regional seafood products.

This policy brief summarises the key findings of a review of public policy and private sector purchasing practices related to the intra-regional trade and consumption of seafood products in the CARICOM region, which was conducted by the Caribbean Natural Resources Institute (CANARI) under the *'Developing Organisational Capacity for Ecosystem Stewardship and Livelihoods in Caribbean Small-scale fisheries (StewardFish)'* project.

The review, which was conducted by interviewing 14 key informants, and reviewing related national and regional policies and other documents, highlights some of the key challenges to intra-regional seafood trade and consumption, the opportunities that exist and recommendations that could be followed to address challenges and leverage existing opportunities.

What are the challenges to intra-regional trade and consumption of seafood?

The challenges limiting intra-regional trade and consumption of seafood in CARICOM that were identified fell into five broad categories: transportation, cold-chain management, consumption, marketing, and non-tariff measures.

Transportation challenges

Efficient transport systems are essential to facilitate intra-regional trade and maintain the quality of seafood products along the supply chain. Inefficient transport systems remain one of the region's biggest hurdles to trade.

Figure 1: Fish vendor in Belize selling freshly caught fish to local customers. (Credit: Fisheries Department, Belize)

1 FAO Issue Brief 10: http://www.fao.org/3/ax904e/ax904e.pdf

2 29 kg/capita/year compared to a global average of 18 kg/capita/year. Average for pacific SIDS 37 kg /capita/year

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Key messages

1. **Within CARICOM, most nations are net importers of food and food products, importing a combined USD 5 billion in 2018. The trend follows in the seafood sector, with national and regional supplies of seafood and fish products generally unable to satisfy robust demand across CARICOM nations.**
2. **Although seafood consumption in the Caribbean region is high compared to global averages, it is 30% less than Pacific Small Island Developing States. In the Caribbean, cheaper alternative sources of protein and imported seafood products often outcompete higher-quality national and regional seafood.**
3. **There are significant opportunities to increase intra-regional trade of seafood products by addressing key institutional and supply chain challenges, such as modernising outdated trade legislation, improving transport systems and strengthening cold chain management.**
4. **Increasing consumption of regional seafood products could be achieved by building consumer awareness of preparation methods for underutilised species, improving packaging quality, diversifying processing methods to increase product offerings and linking seafood consumption to addressing the regional health challenges associated with non-communicable diseases.**

Regionally, the cost of transportation, by air and sea, is high due to taxes and packaging requirements. Even domestic refrigerated transportation, which is necessary for seafood products, can be costly in some countries. Additionally, there is irregularity and limited connectivity in transportation, with fewer options available to distributors and exporters. Sporadic transport schedules and long processing times for paperwork can also result in distributors not having sufficient time to secure the necessary documentation for export.

Another key transport challenge is 'less-than-load (or less-than-truckload)' issues. These occur when there is less goods than the capacity of a freight carrier. For example, the inability of distributors to fill a 40-foot refrigerated container with seafood products incurs higher costs and increases logistical complexity. There are some sub-regional exceptions to this, where smaller vessels are used to transport fish between countries.

Regional and global events, including natural disasters, can also have significant repercussions on the transport of goods intra-regionally and internationally. For example, as the COVID-19 pandemic continues, there has been reduced inter-island transportation and trade.

Cold chain management challenges

A cold chain is a temperature-controlled supply chain, starting at the point of harvesting to eventual sale of seafood. It is important to maintain the cold chain to retain the quality of the seafood product, and any rise in temperature above 1°C, considered a 'break' in the cold chain, causes deterioration.

Seafood requires complex and demanding conditions for transportation and there are many areas throughout the fisheries value chain, from sea to table, where the cold chain can be broken. Some of the more common instances are at the harvesting stage, where artisanal fishers and/or smaller boats do not have cold storage for fish once caught. Even minor delays or disruptions in the earlier phases of the cold chain (e.g., during

Figure 2: Chilled processed fish at the Fishing Complex, St. George's, Grenada. (Credit: Alexander S.T. Girvan)

regional consumption of fish and promote HACCP implementation and traceability of Caribbean seafood from sea to plate.

Link seafood consumption to addressing regional heath challenges related to non-communicable diseases (NCDs)

NCDs continue to be a leading cause of death and illness in CARICOM countries due largely to diets high in sugar and fat[6]. Substituting seafood for other forms of protein is a simple change that can have significant positive impact on the diets and well-being of CARICOM nationals and promote intra-regional trade of seafood. This can also be highlighted in National Nutritional Guidelines.

Build the capacity of small-scale operators to meet international and regional export quality standards

Implementing fisheries related quality standards can increase sustainability while enhancing consumer confidence. However, inadequate support is given to small-scale operators to meet these standards. Support should be provided to small-scale operators, by investing in their capacity (e.g. technical skills, equipment etc.) to meet health and quality standards, such as HACCP and Sanitary and Phytosanitary Standards (SPS) requirements.

Review and reform outdated trade legislation, particularly those that do not align with the principles set out in the CSME

A region-wide review of legislation should be conducted to identify outdated regulations which can constrain the sector and act as a disincentive for intra-regional trade. This revision is necessary to realise the potential benefits and growth of the tariff-free status that the CSME provides.

Cross-cutting recommendations

Improve support for innovative financing in fisheries to improve innovation and production in the sector

The lack of capital available to fisherfolk for investment in production and for management, data collection and documentation of challenges, particularly for the harvest sector, stymies growth and efficiency. Lack

Figure 6: Vendor cleaning fish at landing site, Pile Bay, Barbados. (Credit: CANARI)

Figure 7: Caribbean Spiny Lobster harvested in Belize. (Credit: National Fishermen Cooperative, Belize)

6 In the Caribbean (excluding the Latin Caribbean and Haiti) 76.8% of total deaths in 2016 were due to NCDs. https://carpha.org/What-We-Do/NCD/Overview

campaigns for lionfish, an invasive species, were very successful at increasing consumption and can be used as a model to encourage the sustainable consumption of the species mentioned above.

Use of underutilised species can also be promoted through national school feeding programmes (see Box 2).

Improve value addition and reduce product wastage

Value can be added by building skills and capacity of small-scale processors to produce different cuts of fish, use fish waste to create other products like fish silage[5], prepare seafood in a greater variety of ways, and use shells and bones for other products.

Additionally, efforts should be made to strengthen research in and development of seafood import substitution potential in CARICOM, so that value-added processors can meet regional demand by complementing and/or replacing products that are imported extra-regionally.

Improve consumer awareness of general seafood quality

Increasing public awareness of quality standards that are required and met by local fisherfolk and processors can build trust in the seafood and seafood products provided through the national and regional markets. This can support increased national and

Box 2: School feeding programmes as an opportunity for increasing consumption

School feeding programmes have a long history in the Caribbean region, with some being established since the early 1960's like Barbados. School feeding initiatives were developed to assist in meeting the basic nutritional needs of children from rural and vulnerable communities and low-income households and to ensure their learning and well-being. These programmes have been identified as one of the most successful policies in addressing national and regional food and nutrition challenges and present an ideal opportunity for promoting consumption of seafood from national and regional markets.

As part of the study, the school feeding programmes of three CARICOM countries–Barbados, Jamaica and St. Vincent and the Grenadines–were reviewed to determine their use of seafood. Of the three, the use of seafood was confirmed for St. Vincent and the Grenadines, where guidelines suggest that fish should be utilised at least once per week. Despite this positive policy intervention in St. Vincent and the Grenadines to promote the use of seafood in their school feeding programme, actually doing so comes with a few challenges, including:

- The high cost of fish compared to cheaper alternative sources of protein.
- The high cost of domestic cold transport of the seafood to schools makes it unfeasible.
- Fish and other seafood takes a longer time to process and purchasing partially or fully processed fish increases cost to schools and the school feeding programme.
- Fish bones present a choking hazard, particularly for younger children and is a disincentive for schools utilising domestic fish processed traditionally.
- Due to this choking hazard, more time has to be spent de-boning fish and supervising children while they eat.
- In some cases, the seafood utilised is imported, like canned tuna and salted fish, which are preferred for their low cost and minimal processing times.

Despite these challenges, school feeding programmes present an opportunity to increase consumption and intra-regional trade of seafood. Governments can support the use of seafood in schools by arranging purchasing contracts with fisherfolk or SMEs to produce processed seafood, at an agreed upon price, to meet the needs of schools. This is also a great avenue for the use of underutilised species. Other value-added products produced nationally or regionally can also be used, such as fish burgers, nuggets, fingers, patties, pies and samosas; some of which are already being produced by SMEs. Partnerships between SMEs, fisherfolk and school feeding programmes can increase access and availability and decrease cost to schools and the programmes. These can be further supported by policy incentives such as tax breaks and subsidised inputs and create steady demand and viable opportunities for seafood trade and consumption in CARICOM.

5 Fish silage consists of minced fish by-products or minced whole fish not suitable for human consumption, with a preservative added to stabilize the mixture. Fish silage can be preserved and transformed into a valuable feed input for aquaculture, or for chicken, pork or other livestock production. http://www.fao.org/3/i9606en/I9606EN.pdf

harvesting and landing) can affect fish quality, and may only be seen by retailers at the end of the chain. As a result, buyers can refuse to purchase these goods, decreasing profits to retailers and confidence in the suppliers.

The cost of accessing or producing ice and installing ice holds and cold storage at landing sites and markets, continues to be an issue, particularly for small-scale fishers, and requires substantial investment for installation and maintenance.

Consumption challenges

As mentioned, seafood consumption in the region is relatively high when compared to global levels[3]. However, cheaper alternative sources of protein outcompete domestic and regional fish and other seafood products when it comes to price. The average annual per capita consumption of meat like mutton, pig, poultry and beef in the Caribbean is double the global average.

Additionally, insufficient supply of economical sources of seafood and seafood products to meet the regional demand has led to the importation of a wide variety of products to fill retail gaps. Salted, smoked and canned fish are on an "A list" of items with indefinite suspension of duties under the Revised Treaty of Chaguaramas. Which means that these already cheap imported sources of seafood protein are even cheaper to local consumers compared to regionally or nationally sourced products.

Low levels of seafood literacy have impeded diversification in species used by local consumers. Demand is limited to commonly used species; whose stocks are often overexploited. Conversely, there are unpopular or unfamiliar local and regional species which remain underutilised, due to more traditional preferences for the familiar species bought and consumed. The value of these unfamiliar species may be unknown and hence remain underutilised.

Marketing challenges

There is a fresh fish culture in the Caribbean and buying fish directly from fisherfolk at landing sites or through other means is customary. Consumers are also generally dubious about frozen fish and as a result prefer to buy fresh or chilled fish from fisherfolk.

Figure 3: Traditional packaging for Conch.
(Credit: Alexander S.T. Girvan)

However, maximising economic value and reducing wastage in the value chain requires a robust frozen fish market segment. Increase in consumer awareness and investment in frozen fish market segments are both necessary to access the full value from regional fisheries value chains.

Packaging, or lack thereof, is also one of the shortcomings in marketing domestically caught fish. Packaging is often times rudimentary and unattractive to consumers, with the exception of products marketed by some medium to larger scale distributors, like Rainforest Seafoods.

Additionally, there is a lack of value-added product offerings in the region, with limited variation in processing, packaging and the level of convenience for preparation. This is a gap that imported seafood often fills. Value can be added by providing a variety of cuts and options of seafood products sold, depending on consumer preferences in potential end markets.

Poor integration of regional and local seafood into National Nutritional Guidelines may also contribute, in part, to negative signalling in the consumption of local or regional fish. Often times, the seafood options reflected in these guidelines, though low cost and convenient, do not showcase local (or regional) species

3 FAOSTAT http://www.fao.org/faostat/en/#data

or products. There is generally a lack of information on nutritional benefits, appropriate portion sizes and preparation of local species. This is a clear gap that can be easily addressed by promoting the consumption of regional seafood products in National Nutritional Guidelines.

Box 1: What enables intra-regional trade and consumption of seafood?

Despite the significant challenges, there are several factors which enable, guide and promote intra-regional seafood trade. Four main enabling factors for seafood trade and consumption for CARICOM identified in the research are:

1. Tariff-free allowances for goods under the CARICOM Single Market and Economy (CSME).
2. Work of CARICOM and associated agencies (e.g. the Council for Trade and Economic Development [COTED], Caribbean Regional Fisheries Mechanism [CRFM], and Caribbean Agricultural Health and Food Safety Agency [CAHFSA]) and policy frameworks (e.g. the CSME Article 57 of the Revised Treaty of Chaguaramas, CARICOM Common Fisheries Policy and CARICOM Common Agricultural Policy) to support sustainable management of fisheries, harmonisation of sanitary and phytosanitary measures (SPS) and capacity building in food trade regulation.
3. Trade standards and requirements have had positive impact on improving production systems and allowing businesses to remain competitive for national, regional and international markets.
4. Informal networks in the national and regional small-scale fisheries sectors have enabled its continued growth, specifically for sub-regions where islands are geographically and culturally close (e.g. trade among St. Vincent, Saint Lucia and Martinique). Informal contracts and goodwill among fisherfolk, suppliers, processors and distributors have also been a critical part of seafood trade in the region over the years.

Non-tariff measures

Non-tariff measures (NTMs) are policy measures other than tariffs that can potentially have an economic effect on international trade in goods. There are several NTMs and non-tariff barriers (NTBs) which regulate and impact regional and international trade of food. However, seafood and fisheries products are more affected by these than non-seafood products. While several NTMs and NTBs exist, two main ones which affect intra-regional sale of seafood are the cost and complexity of Hazard Analysis Critical Control Point (HACCP) requirements and outdated trade legislation.

HACCP is an internationally recognised system for reducing the risk of safety hazards in food. HACCP is meant to prevent, reduce and minimise physical, chemical and biological hazards to foods. Private sector operators noted that in order to meet HACCP requirements, operations must be large enough to justify contracting a fulltime compliance officer, which presents a cost barrier for small and micro enterprises (SMEs) in the seafood sector. The cost of maintaining effective HACCP systems was also seen as a challenge, particularly for smaller scale operators.

Additionally, food testing laboratories that support HACCP systems vary in accreditation and capacity across the region. However, given the general scepticism about the quality of seafood regionally, due to issues around contaminants and water quality, implementing and improving HACCP standards can help to reassure consumers of the quality of seafood they can source nationally and regionally.

Outdated trade legislation and systems also create grounds for refusal of seafood products by customs in recipient countries. Outdated bureaucratic systems can cause delays in approvals and paperwork. These delays can cause processors and distributors to incur higher costs for cold storage and even lead to degradation of the quality of seafood, in instances where cold storage facilities at ports are inadequate.

Recommendations for improving intra-regional trade and consumption of seafood

From the review, several recommendations, including opportunities that could be better leveraged to address intra-regional trade and consumption of seafood in CARICOM, were highlighted. These include:

Further research on transportation opportunities at the CARICOM level

Previous studies, such as the Jagdeo Initiative in 2007[4], have identified inadequate transportation as a key constraint to the development of agriculture in the region. However, there is a dire need for further research by logistical experts on methods to improve regional transport efficiency of food products within CARICOM. A study, which builds on findings of previous research, could identify logistical opportunities that address economies of scale, transportation timing and less-than-load issues.

Invest in the development of the regional cold chain

Further investment is necessary in the cold chain to reduce spoilage, maximise quality and maximise 'exportability' of the region's seafood products. While some national incentives are provided for supporting cold chain development, they need better publicity, clearer mechanisms for approval and more thoughtful formulation to ensure they are relevant to the capacities and needs of small-scale fisherfolk.

Make use of underutilised species

Efforts should be made to sustainably use high-quality underutilised species such as rainbow runner, diamond back squid, bangamary, robin and others. Use of these species can be highlighted through national and regional campaigns including collaborations with restaurants and chefs; targeted marketing strategies; and educating consumers on how to process, prepare and cook underutilised species. National and regional

Figure 4: Frozen fish for processing in Guyana 2021. (Credit: Toshwatie Ramdharrie)

Figure 5: Fishers retrieving nets in Guyana. (Credit: Fisheries Department, Guyana)

4 The Jagdeo Initiative identified inadequate transportation, particularly of perishables, as a key constraint to development of the agricultural sector in the CARICOM region. https://caricom.org/documents/9841-jagdeo_initiative.pdf