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主 論 文 の 要 旨

論文題目

Exportation of Processed Fishery Products from Mozambique: Determinants and Technical Compliance Process

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論 文 内 容 の 要 旨

The dissertation answer two questions: (1) what are the determinants of exports of fishery products from Mozambique, and (2) what are the costs and the benefits of complying with importer's technical regulations, standards, and measures. The questions raised are founded in recent literature which highlights the importance of technical measures to trade in the export and import of agro-food products. In fact, recent evidences emphasizes that technical standards and sanitary and phytosanitary standards designed to safeguard food safety, human, animal and plant health and life are acting as substantial obstacles to exports of fish and fish products. Therefore, apart from prices and consumer's incomes, agro-food products are highly sensitive to the degree of compliance to consumers' technical regulations and standards.

The dissertation starts, in the Chapter 2, by providing a general picture on the role of the technical measures to trade of world fishery industry, highlighting the concepts of "product", "production and processing", and "labeling and marketing" standards. From the world data, aquaculture production is underlined as the mode of production that is increasing the world supply, and especially, the trade fluxes from developing to developed countries. A general lesson from that chapter is that captures should be reduced – not necessarily stopped – while environmental-friendly aquaculture should be promoted. That is why the chapter indicates that technological advances in fisheries science, higher incomes, health and sanitary consciences as well as the population structure, combined with lower or zero tariffs on imports, is pushing importing countries' governments to improve their means to control [imports] of agro-food. This is done by applying and enforcing stringent technical standards and regulations, which is affecting, particularly, fishery products. Its perishability nature and the wide evidences of fishery as being

vehicle for food-borne illnesses are among the main reasons for the application of such stringent regulations and standards.

In the Chapter 3, Mozambique is analyzed. The dissertation assumes that the country has deficit in applying technical standards, taking as evidences the successive findings of failures to meet the EU legislations on food safety (data from others important markets were not found). The reasons for that are complex, but include the economic model chosen after the independence, long economic stagnation and backwardness created by the civil war, lack of supportive infrastructure and equipment, and deficient control of the domestic refuse and sewage. This suggests that additional effort, to enforce the existing rules, institutions and laws shall be done. The chapter points out that 11 tariff line of fishery products are exported consistently, offering potential alternatives for product diversification, and through it, to market diversification. In this point, the dissertation criticizes and joins its voice to those who critics the fishing agreements, arguing that they lead to underinvestment infrastructures for compliance to technical measures, and they endangers the fishery resources, due to their “extractive” nature.

In the Chapter 4, the dissertation tests the significance of sanitary and environmental indicators to the exports of fishery products from Mozambique. An export demand equation under the assumption of imperfect substitute goods was taken, using the quantity of shrimps and prawns, frozen, as the dependent variable. The results points out that the export demand model for shrimps and prawns exported from Mozambique performs better with Spain and Portugal, the two main partners. In most of the cases, the fixed effect methodology performed better than the pooled least square since it corrected the majority of the wrong signals detected in the pooled least square and the t-statistics, by lowering the significance of these variables. Although the sanitary and environmental indicators are significant with some trading partners, the number of products being rejected, destroyed or deviated to others markets is increasing, as well as the number of mandatory quantity of samples to be tested at laboratories.

The Chapter 5 uses two products (frozen shrimps and prawns and dried fish), two equations (export demand and supply) and one technical indicator (costs for carrying laboratory analysis). The results would be stronger if more accurate instruments were used. Thought the effect of the endogenous variable, the technical indicator and others instruments performed to turn the independent variables statistically significant and with the correct signs. This indicates the relevance of this variable, meaning, thus, that carrying out laboratorial analysis on fishery products, prior to their exportation impacts the demand and the supply of exports. The country and time-frame effects showed significant results, and this indicates that fishery products are sensitive to the economic profile of the trading partners and to time-frame.

The Chapter 6 revises the costs for compliance faced by different developing fishing countries. In general, smaller and more vulnerable countries appear as more dependent on foreign aid, while relatively great economies tend to support their own compliance activities. The chapter also

indicates that the empirical data suggests that costs for compliance are far below the benefits.

In Chapter 7, the estimates of the NPV (net present value) and BCR (benefit-cost ratio) for a proposal of a fishery laboratory in Mozambique provided positive, since the NPV is 643,071.00 USD, which means the inflows exceed outflows and the project is worthwhile. Considering that the laboratory will be funded by grants from foreign agencies, the costs of compliance with technical measures will be covered by the importers themselves and the costs will not entirely be passed to consumers. The BCR is 3.00 which reinforces the project is worthwhile and the proposed fish inspection laboratory can generate benefits three times bigger than the costs. Since the laboratorial costs are one of the most important problems faced by fishing firms, the net benefits reported represents the net impact of others standards and due to huge net BCR, firms will enjoy the advantages of complying with fish laboratorial analysis requirement.

The main conclusions of the dissertation are summarized below:

- a) Beside prices and income, technical measures (sanitary and environmental aspects) are affecting the demand of exports of fishery products, from Mozambique, especially, frozen shrimps and prawns exported to EU;
- b) From the worldwide trend and exporting successful developing countries, increasing-production strategy should be based on increase of aquaculture and a gradual decrease of captures;
- c) Export-promoting strategy should be based on increase of quantities (produced and exported) and of quality (compliant to sound technical, health and environmental standards), than on prices;
- d) The benefits of complying with technical measures are higher than the costs;
- e) Above all: if the laboratorial costs of compliance are negligible, then problems of compliance should be found in errors of delivering the products, as for instance, the rupture of the cold chain. Therefore, the investment on the technical compliance structure shall be directed to upgrade the freezing equipment, storage and modern vessels.

