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**A REGIONAL APPROACH TO IMPROVING FISH INSPECTION
AND QUALITY CONTROL : THE ASEAN-CANADA FISHERIES
POST HARVEST TECHNOLOGY PROJECT, PHASE II**

by

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A Regional Approach to Improving Fish Inspection and Quality Control: The ASEAN-Canada Fisheries Post Harvest Technology Project, Phase II

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INTRODUCTION

Since 1983, Canada has provided assistance to the Association of Southeast Asian Nations (ASEAN)¹ in various aspects of fisheries post-harvest technology. Specifically, the Canadian International Development Agency (CIDA) has funded two phases of the ASEAN-Canada Fisheries Post Harvest Technology Project (ACFPHT).

The first phase, which ran from 1983 to 1987, was worth C\$2.5m, and focused on formal training for government fish inspection personnel from the ASEAN countries. The second phase, currently underway, is worth C\$8m and focuses on the establishment of regional centers of excellence, in-region training, the development of training materials, and the implementation of pilot projects in cooperation with the private sector. This paper describes the activities of the Phase 2 Project, highlighting the unique regional approach that has been adopted, the HACCP initiatives on the Project, and the measures taken to promote sustainability. It goes on to discuss the impact of the project on ASEAN-Canada seafood trade. Finally, the paper considers briefly the relevance of the ACFPHT Project model for the South Pacific.

CONTEXT

The ACFPHT Project should be understood in the larger context of international seafood trade. Developing countries are becoming major seafood producers and exporters, with three of the six ASEAN countries (Thailand, Indonesia, and the Philippines) amongst the top twenty producers in the world today.

The growing importance of seafood exports from developing countries comes at a time when there is increasing concern over quality standards and systems, especially in the industrialised economies. Quality assurance systems based on Hazard Analysis and Critical Control Points (HACCP) are rapidly becoming the international standard for food safety. The absence of such systems will increasingly constitute a barrier to export markets. At the recent expert technical meeting on The Use of HACCP Principles in Food Control held in Vancouver, 12-16 December 1994, the representative from Thailand had this to say: "In

¹ Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand.

many countries, the application of the HACCP system to the food processing industries has been seen as the last word in food quality assurance. It seems probable that in the very near future, there will be two separate categories of countries involved in food processing, namely those that have adopted HACCP fully, and those that have not."²

The same expert meeting noted that the need for practical HACCP training for developing countries was of utmost importance. It is in this context that the ACFPHT Project can be seen as a pioneering effort to deliver HACCP-type training using a regional model.

THE ASEAN-CANADA FISHERIES POST HARVEST TECHNOLOGY PROJECT, PHASE II

The objective of the project is to improve the processing of fish products in ASEAN, thereby increasing the exports of fishery products and generating foreign exchange earnings. A related objective is to augment the supply of fishery products for domestic consumption.

Establishment of Regional Centers

The project focuses on three aspects of post harvest activities: fish inspection and quality control, fish processing technology, and information preparation and dissemination. The strategy of the project is to establish regional centers of excellence in each of the three areas. The Regional Centre for Fish Inspection and Quality Control (RC-FIQC) has been established in Jakarta, Indonesia; the Regional Centre for Fish Processing Technology (RC-FPT) has been established in Singapore; and the Regional Centre for Information Preparation and Dissemination (RC-IPD) has been established in Kuala Lumpur, Malaysia.

The establishment of regional centers has been accomplished through infrastructure upgrading, human resource development, and a modest level of equipment procurement. Counterpart contributions from the host countries have been essential in providing the other necessary infrastructure and human resource inputs for the establishment of the regional centers. In the case of Singapore and Indonesia, the regional centers built on existing facilities and programmes which had been supported by the host countries and/or by other donors.

Once the regional centers were established, they embarked on the implementation of specific activities related to the Centre's area of excellence. At RC-FPT, pilot projects were undertaken in the development of battered-breaded fish products from surimi and fish mince meat, as well as in the identification of suitable packaging technologies for the battered-breaded products. At RC-FIQC, the pilot project activities undertaken were in the areas of improving the quality of fresh and frozen shrimp, as well as in improving the quality of fresh and frozen tuna. RC-IPD was entrusted with the task of producing a variety of information materials based on the project activities. The three regional centers were also tasked with providing technical support to the other ASEAN countries.

² Jirathana, Poonsri, *Constraints Experienced by Developing Countries in the Development and Application of HACCP Based Food Control Systems*, in Report of an Expert Technical Meeting on The Use of HACCP Principles in Food Control, Vancouver, Canada, 12-16 December 1994, Food and Agriculture Organisation of the United Nations.

Pilot Projects

In addition to the activities of regional centers, the project supports the implementation of pilot projects in Thailand, Brunei Darussalam, and the Philippines. The projects are in the area of fish inspection/quality control or in fish processing technology, as follows:

Brunei Darussalam	Mechanisation and Quality Control of Small and Medium Size Fish Processing Plants Development of Technologies for Processing of Underutilised Fish Species into Value-Added Products
Philippines	Development and Improvement of Value-Added Shrimp/Surimi Battered and Breaded Products Development of Quality Standards for Handling and Grading of Cephalopods
Thailand	Controlling Decomposition of Tuna and Tuna Products Improvement of Aquacultured Shrimp Quality

Regional Training

An essential component of the project consists of a series of regional training activities covering various topics in fish inspection and quality control. The regional training activities, which are held at RC-FIQC, have included

- Workshop on Good Laboratory Practices,
- Workshop on In-Plant Verification Procedures under HACCP/QMP
- Workshop on Microbiology
- Workshop on Antibiotic Residues
- Seminar on Fish Inspection

There has also been a small amount of in-Canada training for each of the ASEAN countries, including attachment training with the Department of Fisheries and Oceans Canada.

To date, the project has provided direct and indirect training to over 1500 ASEAN individuals from both government and industry. The large number of individuals trained is partly a result of the regional *training of trainers* model that has been adopted, where individuals trained at regional workshops are able to conduct in-country training activities for a larger group of people.

HACCP Initiatives on the Project

Even though the Project was not originally designed with HACCP in mind, HACCP concepts (such as the Canadian Quality Management Programme) are entirely consistent with project objectives and as a result have been integrated into project activities. This is a function of the rapidly growing importance of HACCP in international food safety and in the seafood trade. It also coincides with the introduction of mandatory QMP in Canada in February 1992, around the same time when the project started.

The HACCP initiatives on the Project include

- development of HACCP plans at the plant level for processing of canned tuna and fresh/frozen shrimp
- development of HACCP/QMP-based inspection programmes at the national level
- development of training materials on HACCP/QMP

With respect to HACCP training materials, the Project has already published a manual entitled "An Introduction to HACCP". Over 1000 copies of the manual have been sent to government and industry people throughout ASEAN and beyond. At the request of Infofish copies of the manual were sent to all recipients of *The Fish Inspector*, a bulletin which is published in English, French, Spanish, and Arabic.

The next step in HACCP training is the development of a generic HACCP curriculum which can be used by trainers throughout ASEAN for training activities at the industry or company level. The dearth of generic training materials has been recognised as a constraint experienced by developing countries in the application of HACCP-based food control systems³ and it is believed that the curriculum developed by the Project can begin to fill that void. The development of this HACCP curriculum will take place over the next six-eight months, and the results will be tested at a Project workshop before the training materials are finalised.

The project has also been involved in addressing the "peripheral" quality assurance requirements that are necessary for HACCP programmes to be effective. These include the provision of assistance in legislation and infrastructure, Good Manufacturing Practices (GMP), Good Laboratory Practices, a regional check sample programme, and the development of technical competence in selected food microbiology and analytical chemistry topics.

THE ACFPHT PROJECT AND ASEAN-CANADA TRADE IN SEAFOOD PRODUCTS

It is important to recognise that fish inspection and quality control systems and HACCP in particular are as much about international trade as they are about food safety. Indeed, a

³ The Use of HACCP Principles in Food Control. Report of an Expert Technical Meeting, Vancouver, Canada, 12-16 December 1994, Food and Agriculture Organisation of the United Nations.

stated objective of the project is to increase the seafood exports of ASEAN countries. By itself, however, the Project has no direct influence over seafood trade. Until there is international agreement on HACCP or equivalent standards as well as on the host of compliance, audit and verification issues that surround HACCP, the development of HACCP programmes in exporting countries will only be as good as the acceptance of those programmes by importing countries.

In this regard, the Project has an important "hidden" component, which is the existence of bilateral agreements between Canada and Thailand (since 1988) and between Canada and the Philippines (since 1990) for reduced inspection of Tuna and Shrimp products from specific plants in Thailand and the Philippines, subject to the development of suitable HACCP-type programmes and verification/audit procedures. The agreements provide a basis for providing HACCP-related training to Thailand and the Philippines, some of which has been delivered under the auspices of the Project.

The bilateral agreements, supported in part by the training activities under the Project and from earlier CIDA-funded activities, have had a significant impact on Thai-Canada seafood exports. This is also true of Philippines-Canada seafood exports, but to a lesser extent, due to the later date of the Philippines-Canada agreement and a slower rate of plant certifications.

The following table shows that rejection rates for canned tuna from Thailand and the Philippines have fallen by as much as 17 percentage points between 1987 and 1994. In contrast, Indonesia, which has until recently exported only small quantities of canned tuna to Canada, has a more erratic record of rejections. With the recent introduction of its own national quality management programme (supported in part by the Project) and the likely increase in exports to Canada, it will be interesting to see if rejection rates for Indonesia fall consistently over the next few years.

% Rejections	87/88	88/89	89/90	90/91	91/92	92/93	93/94
Thailand	17%	5%	3%	1%	2%	1%	0%
Philippines	15%	12%	4%	8%	0%	3%	1%
Fiji	1%	4%	3%	1%	0%	3%	0%
Indonesia	0%	100%	71%	0%	0%	23%	18%
All countries	14%	10%	4%	3%	1%	3%	1%

Source: Fisheries and Oceans Canada

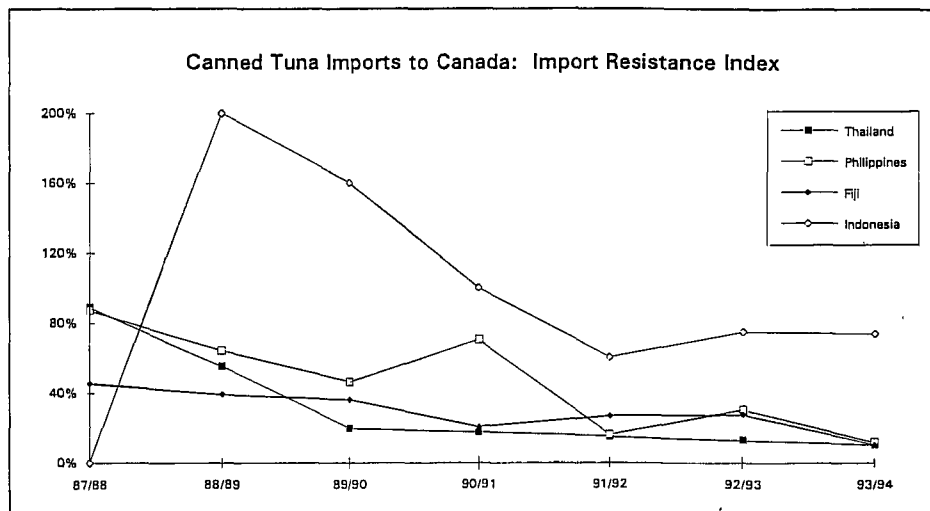
The impact of the bilateral agreements is seen more dramatically in the statistics on the percentages of imports that were subjected to inspection. The following table shows that the percentage of canned tuna imports that were subject to inspection fell, in the case of Thailand, from 72% in 1987/88 to 10% in 1993/94, and in the case of the Philippines, from 72% in 1987/88 to 11% in 1993/94. By comparison, Indonesia, which does not currently have a bilateral agreement with Canada, has had inspection rates of over 50% throughout the same period. The only South Pacific example, for comparison, is Fiji, for which inspection frequency has declined relatively modestly between 1987-94 despite having the

lowest average rejection rates for the period (previous table). This is significant because while rejected products have an obvious economic cost to the exporter, high inspection frequencies can also be costly because of the delays that may result.

Inspections/Imports	87/88	88/89	89/90	90/91	91/92	92/93	93/94
Thailand	72%	50%	17%	16%	13%	12%	10%
Philippines	72%	52%	43%	63%	16%	27%	11%
Fiji	44%	36%	34%	19%	27%	25%	10%
Indonesia	0%	100%	89%	100%	60%	52%	56%
All countries	58%	48%	31%	30%	17%	20%	11%

Source: Fisheries and Oceans Canada

I have constructed a simple composite index which measures the combined effect of inspection frequency and actual rejection rates. Crudely speaking, the "resistance index" shows the ex-post level of difficulty exporters have faced in selling to the Canadian market because of food safety reasons (technical and administrative). The graph below shows that while there has been a decline in the "resistance index" for all the countries shown, Thailand shows the most consistent decline as well as the lowest absolute level of "import resistance". It is difficult to say how much of the improvement in the "Resistance Index" is directly attributable to Canada's assistance which has been provided since the early 80's, but there is no doubt that the combination of technical assistance under the ACPHPT combined with the establishment of bilateral agreements with Thailand and Philippines has played an important role.



The use of bilateral agreements (e.g. Memoranda of Understanding, Mutual Recognition Agreements) is likely to take on increasing significance in the regulation of food safety in seafood trade and will constitute an important administrative/institutional requirement for HACCP-type programmes to impact on trade flows. This is a factor which, even though not directly within the ambit of most technical assistance projects such as the ACFPHT, cannot be ignored if the ultimate objective of increasing seafood exports is to be realised.

FUTURE DIRECTIONS: DEVELOPING SUSTAINABILITY

With the ACFPHT Project at a mature stage in its implementation, increasing focus is being given to the sustainability of the initiatives following the formal closure of the project in early 1997. The ASEAN countries have taken on this challenge and at the 16th meeting of the ASEAN Ministers of Agriculture and Forestry (AMAF) in April 1994, an ASEAN Fisheries Sector Work Plan was approved, which includes the establishment of the ASEAN Network of Fisheries Post Harvest Technology Centers. Singapore has been designated as the Network coordinator, in collaboration with the Marine Fisheries Research Department of the Southeast Asian Fisheries Development Centre (MFRD/SEAFDEC). Since MFRD/SEAFDEC is also the ASEAN Executing Agency for the ACFPHT and has a well-established and highly respected fisheries post harvest programme in place, it is in an excellent position to carry out the role of the Network coordinator.

Subsequent to the formation of the Network, the Special Senior Officials Meeting of AMAF (SOM-AMAF) approved in April 1995 a work plan consisting of four elements:

- Determination of country coordinators and institutes for the ASEAN network
- Development of a System of Information Exchange of FPHT among centers in ASEAN countries
- Harmonisation of Quality Assurance of Fisheries Products through HACCP Programmes
- Successful Completion of the ASEAN-Canada Fisheries Post Harvest Technology Project, Phase II

At the 4th Project Steering Committee held in June 1995, the work plan was reviewed in detail and a number of specific recommendations were made, for submission to the SOM-AMAF Meeting in August 1995 and subsequently to the AMAF Meeting. One of the recommendations is to set up an electronic information exchange system on various FPHT topics at the Regional Centre for Fish Processing Technology in Singapore. It is expected that this electronic information exchange system will be operated and maintained by MFRD/SEAFDEC well after the Project comes to an end.

Another factor in the sustainability of the Project initiatives will be the extent to which the information and training materials produced by the project are disseminated and used by government and industry personnel throughout ASEAN. To a large extent, the responsibility for such dissemination rests with the individual ASEAN countries. In this regard, one of the last activities of the project will be on utilisation training, which will focus on techniques of

handling, dissemination, further transformation, and presentation of the training materials so that they can reach as wide an audience as possible.

SOME CONSIDERATIONS FOR SOUTH PACIFIC ISLAND NATIONS

Despite obvious differences in size and economic development, the ASEAN countries share a number of common features with the South Pacific Island Nations with respect to seafood trade. Much of the tuna that is canned in ASEAN comes from South Pacific waters. As South Pacific Island Nations move increasingly to develop their shore-based processing facilities for export product, they will face the same sort of quality and food safety issues which ASEAN has had to deal with in the last 15 years. HACCP-based programmes are becoming mandatory for seafood exports into industrialised countries and the Pacific Island Nations have to consider the implications for domestic regulatory agencies as well as for the private sector.

To the extent that a regional approach on the ACFPHT Project has worked for the ASEAN countries, this approach is probably even more applicable in the South Pacific. Given the very small seafood export sector, it would be prohibitively expensive for individual countries to develop dedicated national capabilities in HACCP-based quality programmes. The South Pacific has already built up substantial experience and credibility in taking a regional approach to fisheries management, fisheries research, and in fisheries human resource development, through the combined efforts of the Forum Fisheries Agency, the South Pacific Commission, and the University of the South Pacific. It would seem that an extension of the regional approach to take up the challenge of fish inspection and quality control for South Pacific seafood exporters is achievable.

Apart from drawing on the experience and expertise of countries such as Canada, the South Pacific could look to its ASEAN neighbours for mutual support and assistance. The ASEAN countries, after all, are as likely targets for export of seafood products as are the traditional metropolitan markets. Meeting ASEAN standards for seafood quality will be as much of an issue as meeting US or EU standards.

There has already been a modest level of exchange between Canadian-funded post harvest fisheries projects at SPC and the ACFPHT Project, mostly in the area of information exchange. This presentation aims in part to advance the linkages already started. Future linkages will be extended to attendance at appropriate training workshops in the respective regions. However, for significant progress in fish inspection and quality control to be achieved, a dedicated programme for the South Pacific will have to be developed. There is a need for better information on the current status of fish inspection systems in the Pacific Island Nations as well as on the perceived needs of exporters and would-be exporters. What is certain, however, is that with many Pacific Island Nations aspiring to take control of their ocean resources and to develop shore-based seafood export industries, the need for consistent and internationally-acceptable quality systems will be increasingly pressing.

The views expressed in this paper are my own and may not be shared by the Canadian International Development Agency (CIDA), the Marine Fisheries Research Department/Southeast Asian Fisheries Development Centre (MFRD/SEAFDEC), Coastal Associates and Consultants Limited, or the member governments of ASEAN. Funding for

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