

Fish marketing and credit in Viet Nam



Cover photograph:

Cau Moi Market in Ho Chi Minh City, Viet Nam. Courtesy of Nguyen Viet Ha.

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by

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Preparation of this document

This document presents the findings of the studies on domestic fish marketing and related credit arrangements and needs in Viet Nam which were carried out in 2002 in the context of the project *Fish marketing and credit in Viet Nam* (MTF/VIE/025). The project was funded by the Fisheries Sector Programme Support (FSPS) of the Danish International Development Agency (DANIDA) and executed by the Food and Agriculture Organization of the United Nations (FAO) in close cooperation with the Fisheries Information Centre (FICEN) of the Ministry of Fisheries (MOFI) of the Socialist Republic of Viet Nam.

This report comprises a record of the research undertaken by the project, its findings and recommendations. It also contains a summary of the proceedings and recommendations of the national workshop organized by the project.

The report was prepared by Dr Audun Lem, Dr Uwe Tietze, Dr Erhard Ruckes and Raymon van Anrooy of the Fisheries Department of FAO, Rome. Ms Nguyen Viet Ha and Messrs Nguyen Viet Dang and Nghia Nhan contributed each to three survey reports, which are contained in this publication. Dr Thai Thanh Duong, Director, Fisheries Information Centre, Ministry of Fisheries of Viet Nam and National Project Director *Fish marketing and credit in Viet Nam* (MTF/VIE/025/Misc) contributed the introductory chapter.

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Abstract

Since the early 1980s, exports of fish in Viet Nam have increased significantly while the improvement of domestic marketing and utilization of fish have not received sufficient attention. Improving supplies of fish for urban and rural populations, better quality and safety of products and ensuring food security, particularly for disadvantaged and vulnerable parts of the population, are important concerns which were addressed by studies, the findings of which are presented in this report. These findings suggest that the domestic consumption of fish in Viet Nam is probably higher than previously assumed. Given the projected strong economic growth over the coming years, it must be expected that local consumer demand will continue to expand. At the same time, the export-oriented fish processing industry will result in an increased demand for raw materials.

This substantial future demand for safe and high quality fish products can only be met if efficient marketing arrangements are in place. The findings of the studies identify a number of constraints in the present domestic fish marketing channels, which form the basis of recommendations for the improvement of the present marketing arrangements. These include the establishment of fish wholesale markets in large urban areas, establishment of well-functioning assembly markets at important fish landing sites, improvement of the legal/regulatory framework for the operations of fish wholesalers, establishment of fish market price information systems, promotion of contract farming/trading systems among fish market operators certified by local authorities, improvement of fisheries statistics systems for better fish market planning, the promotion of a domestic fish market strategy complementing the export-oriented development strategy and the development of a coordination mechanism for the public sector for fish marketing and fish market management.

As far as the fish marketing chain is concerned, it is recommended that governmental and semi-governmental institutions should play an active role in the improvement of the vertical fish marketing chain. Their cooperation with the private-sector stakeholders is requested as capabilities of the private sector to establish well-working cooperation arrangements seem limited and have not (yet) brought the expected benefits. Public-private partnership appears to be the key to success.

Credit is widely used for financing marine capture fisheries, particularly offshore fishing and export-oriented fish culture, processing and marketing. State-owned financial institutions play a major role in financing capital expenditure while working capital requirements are mainly met by informal sources of credit. Future investment requirements and credit needs are greater than current availability. In particular, the domestic fish marketing sector, i.e. wholesalers and retailers, so far have only a limited access to credit and this is perceived as an obstacle to the growth and improvement of the sector. In the case of offshore fisheries, the findings suggest that there should not be any further expansion of credit, and future credit support should focus on making the fleet more efficient and sustainable.

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Acronyms and abbreviations

APEC	Asia Pacific Economic Cooperation
AQ	Aquaculturists
ASEAN	Association of Southeast Asian nations
BIDV	Bank for Investment and Development of Viet Nam
DAF	Development Assistance Fund
DANIDA	Danish International Development Agency
DOFI	Department of Fisheries
DOT	Department of Trade
EEZ	Exclusive Economic Zones
EPC	Event Process Chain
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FF	Fisherfolk
FICEN	Fisheries Information Centre
FMIS	Fisheries Management Information System
FSPS	Fisheries Sector Programme Support
GMP	Good Manufacturing Practice
GPS	Geographic Positioning System
GSO	General Statistical Office
HACCP	Hazard Analysis Critical Control Points
HCMC	Ho Chi Minh City
HHC	Household Consumer
HP	Horse Power
IC	Institutional Consumer
ICT	Information and Telecommunication Technologies
IFEP	Institute for Fisheries Economics and Planning
INCOMBANK	Industrial and Commercial Bank of Viet Nam
INGO	International Non-governmental Organizations
IQF	Individual Quick Freezing
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
LC	Letter of Credit
MOFI	Ministry of Fisheries
MOT	Ministry of Trade
NAQUAFICEN	National Quality Control Centre
NGO	Non-governmental Organizations

PR	Processor
RT	Retailer
SAPA	Sustainable Aquaculture for Poverty Alleviation
SCM	Supply Chain Management
SCP	Structure, Conduct and Performance
SEAQIP	Seafood Export and Quality Improvement Programme
SIREP	Support to Industry Restructuring and Enterprise Development
SOEs	State-Owned Enterprises
SPB	Social Policy Bank
SSOP	Sanitation Standard Operating Procedures
SPPS	Statistical Package for Social Science
STOFA	Strengthening the Fisheries Administration
SUFA	Support for Freshwater Aquaculture
UNDP	United Nations Development Programme
VAC VINA	Vegetable-Aquarium-Cage (project)
VASEP	Viet Nam Association of Seafood Exporters and Processors
VASI	Viet Nam Institute of Agricultural Sciences
VBARD	Viet Nam Bank for Agriculture and Rural Development
VINAFA	Viet Nam Fishery Association
VINAFISH	Viet Nam Fishery Exhibition
VND	Vietnamese Currency (dong)
WES	World Education Services
WTO	World Trade Organization

Introduction

Dr Thai Thanh Duong

Director, Fisheries Information Centre (FICEN)

Ministry of Fisheries of Viet Nam

and

National Project Director

Fish Marketing and Credit in Viet Nam (MTF/VIE/025/Misc)

OBJECTIVES OF PROJECT AND STUDY

Since the early 1980s, the fisheries sector of Viet Nam has undergone remarkable changes. It was one of the first sectors of the Vietnamese economy which introduced and experimented with new policies on marketing improvement and export promotion with a view to enhance product value and to create investment opportunities for the development of a modern and sustainable fisheries sector for the benefit of the people employed in the fishery industry, for food security and for the benefit of the national economy of Viet Nam as a whole.

Fish and fishery product exports have increased rapidly since the 1990s. In 2001, 358 000 tonnes of fishery products were exported, equivalent to about 720 000 tonnes of raw material. This amounted to a value of US\$1 777 million and contributed substantially to Viet Nam's total export earnings.

The total fish production from both capture fisheries and fish culture was about 2 226 000 tonnes in 2001. This means that about one-third of the total production was exported while two-thirds were consumed domestically. Although the volume of fish exports is small compared to domestic consumption, the value of the exports is relatively high. The importance of the fish export earnings for the Vietnamese trade balance is the main reason that, in recent years, most government attention has been directed towards export while domestic markets were largely neglected. Exceptions are government programmes for fisheries and fish farming development with a focus on poverty alleviation and food security.

With this emphasis on exports, the study of the domestic market for fish and fishery products has not received the attention it deserves. Some smaller studies were carried out on particular aspects of domestic fish marketing; however, they do not give a full picture of domestic fish marketing in Viet Nam.

There is a growing concern among domestic consumers as to the quality and safety of the fish products they are offered and regarding the scarcity of supplies in some areas during certain months of the year. Furthermore, the lack of information on the marketing of fish at governmental level makes it difficult for the Ministry of Fisheries (MOFI) to better address the needs of the sector. As well, the domestic marketing also affects the performance of the fish-exporting sector given that all fish products, before being exported, have to pass through some stages in the domestic market.

These are the reasons for which the Ministry of Fisheries of Viet Nam requested donor assistance in support of its efforts to ameliorate information on domestic fish marketing and on identifying constraints and opportunities for the improvement of marketing arrangements. The Food and Agriculture Organization of the United Nations (FAO) agreed to provide assistance with financial support from the Fisheries Sector Program Support of DANIDA (FSPS-DANIDA). In November 2001, implementation of the project *Fish marketing and credit in Viet Nam* (MTF/VIE/025/Misc) began.

The project comprised four main subcomponents which covered issues related to fish marketing, credit for fish marketing and production, vertical chain cooperation in fisheries marketing and economic modeling for fisheries marketing development.

The overall objective of the project was to improve the livelihoods of the people working in the Vietnamese fisheries sector through the collection and analyses of fish marketing information and the dissemination of the obtained information to all stakeholders in the sector with particular emphasis on the support of the decision-making process in the Ministry of Fisheries, sustainable development of the sector, gender roles, achievement of food security and poverty alleviation.

Specific objectives were:

- i. to fill the current information gap on the marketing of fish and fishery products in Viet Nam in order to support MOFI, institutions and donors active in the sector in better addressing the needs of the fisheries sector and in supporting decision-making processes;
- ii. to provide access to clear market information to the players in the fisheries products-marketing channel (e.g. fishers, middlepersons, processors, market traders and retailers) on the functions of the various players involved, prices and consumer demands in the domestic market and the market structure;
- iii. to contribute to the existing knowledge on how to feed the growing population in Asian cities efficiently, with respect to the provision of fisheries products and the main cities in Viet Nam, i.e. Ho Chi Minh City, Hanoi and Danang;
- iv. to develop a model, including practical guidelines, that will assist the actors in the Vietnamese fisheries products-marketing chain by focusing on vertical cooperation to become more competitive in both the world and domestic market and improve the individual as well as chain performance to better satisfy the consumer demands;
- v. to contribute to the existing knowledge on how fish production, marketing and processing are being financed at present and on how marketing-related financial flows and transactions take place and could be further developed in Viet Nam, including the identification of investment requirements and credit needs and channels;
- vi. to enable MOFI to forecast, under different assumptions, the future consumption and consumption patterns of Vietnamese fisheries products given different growth rate projections for Viet Nam; and
- vii. to strengthen the capacity of MOFI to disseminate the available findings of this project to others interested and identify the needs for possible follow-up activities in the field of fisheries products marketing in Viet Nam.

METHODOLOGICAL FRAMEWORK AND RESULTS

With a view to specify the project strategy and work out a detailed plan for project implementation, a two-day inception workshop was held at the MOFI on 2–3 October 2001. It was attended by representatives of FAO, MOFI, and FSPS-DANIDA. The proceedings and results of the inception workshop are summarized in Section 3.

To carry out the nationwide household survey on fish marketing and credit in Viet Nam, a combination of a sample survey and a purposeful selection methodology was developed and survey sites were identified nationwide. Twelve provinces and cities from the three regions were selected: Hanoi, Bac Can, Quang Ninh, and Nghe An in the north; Da Nang, Khanh Hoa, and Dak-lak in the central region; and Ho Chi Minh, Ca Mau, An Giang, Kien Giang, and Ben Tre in the south.

Respondents to be interviewed during the study were defined as key stakeholders participating in fish marketing, ranging from primary producers (fishers and fish farmers) to the final consumers. Since the study focused on domestic fish marketing,

issues of marketing of fisheries products at farm and fishing port levels and demand and consumption patterns of fisheries products at consumer level were the main focus of the study; together with issues such as the operations of traders, i.e. wholesalers, retailers, processors and exporters, in the market. Altogether, the study targeted seven groups: fish farmers, fishers, wholesalers, processor/exporters, retailers, large consumers and household consumers.

A sample of 2 077 respondents was selected for the whole country, 678 of whom were located in the north, 500 in the central part of Viet Nam and 899 in the southern part of the country. In addition, 85 in-depth interviews were conducted with different groups of respondents in various regions.

The study also included the analysis of secondary data using various types of sources. In order to identify and better understand fish marketing issues in the country, secondary data on the development of the fisheries sectors in past and present years were collected and reviewed, mainly from the Fisheries Information Centre (FICEN), FAO and the General Statistical Office (GSO). Information related to the sector development plans, programmes and other issues was gathered from different departments in MOFI in the form of reports, papers, etc. The study also exchanged information with the Fisheries Management Information System (FMIS) project under FSPS-DANIDA regarding the development of a database for fisheries management purposes.

Questionnaires containing both open and closed questions were designed for the seven different groups of respondents. Guidelines for in-depth interviews were also developed. Data and information collected were coded and incorporated into computerized databases using SPSS (Statistical Package for Social Science) software. Descriptive methods of analysis were used to describe the surveyed stakeholders in the marketing chains, their operations and performances, using means, modes and percentages. Some diagrams were used for illustrating market operations.

The first draft reports of the project were represented at the 2nd National Workshop held on 11 December 2002 in Hanoi. Reports of the four research components were presented in “Fish Marketing in Viet Nam: Current Situation and Perspectives for Development”, “Vertical Chain Cooperation in Vietnamese Fisheries Products Channel”, “Financing of Marine Capture Fisheries in Viet Nam” and “Module on Economic Modeling and Fish Consumption”. Workshop participants submitted their comments and suggestions and, based on these, the national and international consultants then finalized the reports.

LIMITATIONS

The quality of data analyses of any survey or research depends on the quality of information and data collected in the field, on the survey planning and the respondents involved, and finally on the interpretation of the results. Naturally, limitations could be found in this study due to the particularities of the demographic, social and geographic characteristics of the survey sites as compared with other parts of Viet Nam and the particular season during which the survey was conducted e.g. the Vietnamese New Year or Tet festival, which has different consumption patterns than other times of the year. Another limitation was imposed by the relatively small sample size and the limited time available for the field survey. Therefore, the data collected might not be entirely representative of the whole population nor of consumption patterns during the whole year.

All in all, the final analysis presented in this report should be useful and meaningful for the reader as it provides a better understanding of the current consumption patterns and the future of fish consumption needs. It is necessary though to conduct in-depth studies with larger and more reliable sample sizes. This is also necessary in order to verify empirically the findings regarding per capita fish consumption presented in the

report “Module on Economic Modeling and Fish Consumption” as the figures are much higher than has been estimated by previous research in Viet Nam.

While the findings of the studies presented in this report should be seen as significant, this first attempt to throw more light on fish marketing and its financing in Viet Nam should nevertheless be followed up by further quantitative and qualitative studies, and by regular collection, analysis and use of information on fish marketing as well as financing in Viet Nam.

Summary of proceedings and conclusions of project inception workshop

Dr Uwe Tietze,
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1. PURPOSE AND BACKGROUND

This report summarizes proceedings and results of the inception workshop of the project *Fish marketing and credit in Viet Nam* (MTF/VIE/025/Misc), which was funded by the Fisheries Sector Programme Support (FSPS) in Viet Nam and executed by FAO.

At present, only minimal information is available on marketing arrangements and facilities for fish and fisheries products in Viet Nam. The same was true for related finance, credit and investment facilities and arrangements. This lack of information hampers the improvement of marketing and utilization of fish and fisheries products in Viet Nam and has a negative economic and nutritional impact on both, producers and consumers. The Government of Viet Nam through its Ministry of Fisheries (MOFI) is committed to address this situation. It has requested that the Food and Agriculture Organization of the United Nations (FAO) carry out a nationwide study on the marketing of fish and fishery products and related chain-coordination, finance, investment and credit aspects, facilities, needs and opportunities.

Responding to this request, the DANIDA aided Fisheries Sector Programme Support, the Fisheries Information Centre (FICEN) of the MOFI and FAO formulated a research project. It ultimately aims to improve the livelihoods of the people working in the Vietnamese fisheries sector as well as food security and supply of fish to urban and rural populations. This is to be achieved through collection and analysis of information on the marketing of fish and fishery products and through the dissemination of this information to all stakeholders in the fishery sector of Viet Nam. Emphasis is also laid on strengthening decision making processes in the Ministry of Fisheries, a sustainable development of fish marketing and utilization, on improving the role of women in fish marketing and utilization and on achieving food security and poverty alleviation.

More specifically, the objectives stated in the project document are:

- i. to fill the current information gap on the marketing of fish and fishery products in Viet Nam in order to support MOFI, institutions and donors active in the sector to address the needs of the fisheries sector better and support the decision-making processes in the sector;
- ii. to provide access to clear market information to the actors in the fisheries products-marketing channel (e.g. fishers, middlepersons, processors, market traders and retailers) on the functions of the various actors in the channel, prices and consumer demands in the domestic market and the market structure;
- iii. to contribute to the existing knowledge on how to feed the growing population in Asian cities efficiently, with respect to the provision of fisheries products and the main cities in Viet Nam, i.e. Ho Chi Minh City, Hanoi and Danang;
- iv. to develop a model, including practical guidelines, that will assist the actors in the Vietnamese fisheries products marketing chain, by focusing on vertical cooperation, to become more competitive on the world and domestic market

- and improve the individual as well as chain performance to satisfy better the consumer demands;
- v. to contribute to the existing knowledge on how fish production, marketing and processing are being financed at present and on how marketing related financial flows and transactions take place and could be further developed in Viet Nam including the identification of investment requirements and credit needs and channels;
 - vi. to enable MOFI to forecast, under different assumptions, the future consumption and consumption patterns of Vietnamese fisheries products given different growth rate projections for Viet Nam; and
 - vii. to strengthen the capacity of MOFI to disseminate the available findings of this project to others interested and identify the needs for possible follow-up activities in the field of fisheries products marketing in Viet Nam.

The inception workshop brought together the main parties that will be involved in the implementation of the project and studies and in the follow-up to the findings and results of the study. The workshop aimed at producing the following outputs:

- familiarization with project objectives and strategies;
- specification of information and data to be collected through key informant interviews and sample surveys;
- discussion and finalization of study methodology;
- discussion and identification of sample size and geographical coverage; and
- review and finalization of work plan and organizational arrangements for project implementation.

2. ATTENDANCE

The workshop was well attended by 32 participants representing the fishery industry, research, administration, financial institutions as well as donors and on-going fisheries development programmes. These included the Director and Vice-Director of the Fisheries Information Centre of the Ministry of Fisheries; representatives of the international cooperation department, the planning and investment department and the committee on the restructuring of public sector companies of the Ministry of Fisheries; representatives of the Ministry of Trade, the Faculty of Economics and Rural Development of Hanoi Agricultural University; the Viet Nam Institute of Agricultural Sciences (VASI); the Fisheries Economics and Planning Institute; the Research Institute for Aquaculture (RIA No. 1; the VINFFA fisheries association; the Hanoi Sea Products Import and Export Corporation; the Viet Nam Association of Seafood Exporters and Processors (VASEP); the Bien Dong Fisheries Corporation; the Bank for Agriculture and Rural Development and the Bank for the Poor.

The coordinator of the DANIDA aided Fisheries Sector Programme Support (FSPS); Senior Advisors, National Directors and experts of the Support to Freshwater Aquaculture (SUFA), Fisheries Management Information System (FMIS), Strengthening the Fisheries Administration (STOFA), Seafood Export and Quality Improvement Programme (SEAQIP) and the Support to Industry Restructuring and Enterprise Development (SIREN) component of the FSPS as well as officers of FAO Representation in Viet Nam and of the FAO Fishery Industries Division of FAO headquarters in Rome, Italy, also participated in the workshop.

3. PROCEEDINGS

3.1 Opening

Mr Duong Long Tri, Vice-Director, Fisheries Information Centre, Ministry of Fisheries, extended a warm welcome to the workshop participants. He pointed out that the fisheries sector has become one of the key sectors of the Vietnamese economy. The speaker then identified lack of information and limited research on marketing,

distribution and utilization of fish in Viet Nam as some of the main constraints to making better use of limited fisheries resources and to maximizing economic returns and nutritional benefits. Mr Tri expressed his hope that the new project *Fisheries marketing and credit in Viet Nam* and the studies to be carried out under the project will contribute to the generation of more information on utilization and marketing of fish and fishery products in Viet Nam and on related finance, credit and investment arrangements. The speaker then called on Ms Fernanda Guerrieri, FAO Representative to Viet Nam, to deliver the opening address.

The FAO Representative to Viet Nam expressed her pleasure in seeing the Government of Viet Nam, DANIDA and FAO united in addressing the issue of lack of information on the marketing of fish and fishery products in Viet Nam. Ms. Guerrieri thanked the Vietnamese Government and the DANIDA aided FSPS for organizing the inception workshop of the project together with FAO. The speaker identified marketing and credit as crucial issues in the further development of fisheries in Viet Nam. The problem of middlepersons appropriating a disproportionately high share of economic returns for themselves and thus depriving primary producers of their fair share was highlighted as well as the lack of price information for producers in the case of exportable items. Ms Guerrieri also identified a lack of value addition when exporting fish and shrimp products. Adding value in Viet Nam prior to exporting fish and shrimp products would increase the country's export and foreign currency earnings as well as creating additional employment and income.

Mr Duong Long Tri then called on Mr Thai Thanh Duong, Director of the Fisheries Information Centre, Ministry of Fisheries, to address the workshop participants. Mr Duong welcomed the workshop participants and emphasised that the fisheries sector in Viet Nam has become a key economic sector, which creates income and employment for millions of people and also promotes the socio-economic status of women, particularly in rural areas, as well as food security. The fisheries sector presently accounted for 10 percent of the total exports earning of Viet Nam.

Development efforts presently focus on three areas i.e. offshore fishing, aquaculture and fish export promotion. In order to have appropriate policies in place, there is a need for sufficient information on the fisheries sector. Government also needs to be in a position to forecast demand for and supply of fish and to find means to satisfy the demand for fish. Information on trade, sales, prices and other information to be generated by the project and study are crucial for the various actors in the Vietnamese fishing industry, the Ministry of Fisheries as well as for international investors. The speaker concluded his address by wishing the workshop and the project the best of success and looking forward to their findings and recommendations.

The chairperson of the opening session, Mr Duong Long Tri then requested the last speaker of the opening session, Mr Frits Jepsen, coordinator, DANIDA Fishery Sector Programme Support, to address the workshop participants.

Mr Jepsen, on behalf of the DANIDA Fishery Sector Support Programme, warmly welcomed the workshop participants. The speaker mentioned that while information was available on fish production, fishery enterprises and fish export, there was little information available on fish marketing and distribution channels in Viet Nam and on domestic fish marketing and utilization. The speaker pointed out that the lack of knowledge on fish marketing in Viet Nam hampers the efficiency of the private sector as well as of government agencies trying to promote fisheries development, marketing and trade. The project and the studies to be carried out are expected to generate new knowledge, which would help to start tackling the various problems, resulting from this information gap. He also highlighted that the project brings together the best of national and international expertise.

3.2 Introduction

The introductory session commenced with participants briefly introducing themselves and their institute and organization. Following this, Dr Uwe Tietze of FAO Rome highlighted the objectives and expected outcomes of the project and workshop. The overall objective of the project was to improve the livelihoods of the people working in Viet Nam's fishery industry. This was to be achieved through collection and analysis of information on marketing and utilization of fishery products in Viet Nam and through the dissemination of this information to all stakeholders (i.e. primary producers, small, medium, and large-scale producers, middlepersons, fish collectors, wholesalers, processors and exporters) as well as to concerned research and government agencies.

The speaker stressed that special emphasis would be put on strengthening decision making in the Ministry of Fisheries regarding improved utilization and marketing of fish and fishery products in Viet Nam in support of food security, alleviation of poverty, strengthening of the social and economic role of women in the fishery industry and on a sustainable development of fish marketing and utilization balancing domestic and export oriented fish marketing and utilization development. The speaker then went on to describe the seven specific objectives of the project already mentioned in Chapter 1.

The session was followed by a review of the workshop's agenda by Mr Raymon van Anrooy of the FAO Representation in Hanoi. The speaker explained that the proceedings of the first day will continue with a review of available secondary data on fishery products, marketing and related credit issues and the identification of information gaps. This would be followed by working group sessions. The groups would identify the main issues and topics to be covered for each actor/intermediary in the fish production and marketing chain to be studied, i.e. primary producers, middlepersons/wholesalers, processors/exporters and retailers/consumers. The second day of the workshop would focus on survey design, geographical coverage and on the responsibilities of the various institutions participating in the project. The workshop would conclude with the formulation of a detailed timetable and planning framework for implementation of the study and project activities. The workshop programme was unanimously adopted as proposed.

3.3 Review of the available secondary data on the marketing of fishery products in Viet Nam

The review was presented by Mr Raymon van Anrooy, FAO Representation, Hanoi. The speaker commenced with a general overview of marine fisheries and aquaculture in Viet Nam. This was followed by an overview of available information on the marketing of fish in Viet Nam, identification of problems/constraints and sources of information. The speaker highlighted that all data used in the presentation have been obtained from official sources at the Ministry of Fisheries.

The increase of total fisheries sector output has been large over the last five years. Total output grew from 1.4 million to 2.0 million tonnes, which amounts to an average annual increase of about 9 percent. The number of labourers employed in the fisheries sector also increased considerably and 400 000 new labourers joined the sector over the last few years. This number is expected to grow further as many rice farmers in coastal provinces turn to shrimp farming and rice–fish culture in upland areas becomes more common.

The number of motorized fishing vessels was increasing sharply, especially the number of offshore fishing vessels, as coastal fisheries resources are fully and sometimes overexploited. Provincial government authorities are supporting the expansion of the fishing fleet with subsidies and credit facilities.

The speaker pointed out that there are more than 200 fish processing companies registered in Viet Nam, which are improving their quality standards and obtaining

HACCP and ISO certification and access to the markets in Europe and the United States. At present 61 fish processing companies in Viet Nam are allowed to export to the European Union. The speaker went on to explain that the export value of fish products almost doubled between 1999 and 2000 and amounted to US\$1.47 billion last year. For 2001, the Ministry of Fisheries expects earnings of US\$1.75 billion from the export of fish and fishery products. The goal is to reach an export value between US\$2.5 and 3 billion in the year 2005. Recently, the United States of America became the main export market for Vietnamese fish products and despite the slowdown of the global economy, further growth of fish exports is expected.

As far as marine capture fisheries are concerned, 1.2 million tonnes of fish were caught last year. With the support of the Asian Development Bank and JICA, 17 fishing ports have been constructed and are now fully operational along the Vietnamese coast. The number of motorized fishing vessels increased last year by 6 000 boats with altogether 1 million HP. As coastal fisheries resources are already fully and overexploited, the focus on further fishing fleet expansion was on the development of the offshore fleet.

Regarding the aquaculture subsector, aquaculture production rose to more than 700 000 tonnes in 2000. The area under exploitation increased to 640 000 hectares. This amounts to an average production of just over 1.1 tonnes per hectares. The speaker mentioned that the area under cultivation would reach 1 million-hectare this year and was expected to increase further in the near future.

The speaker also pointed out that the Ministry of Fisheries not only focuses on exports but also on food security and poverty alleviation. Aquaculture has been shown to be an excellent tool for achieving these goals in rural areas in Viet Nam over the past years. The Sustainable Aquaculture for Poverty Alleviation (SAPA) strategy has been approved by the prime-ministers office and was now a subprogramme under the National Hunger Eradication and Poverty Reduction Strategy of the government. In this context, the speaker emphasized the fact that the fast increase in coastal shrimp and catfish aquaculture, i.e. the products which are primarily meant for export, also contributed significantly to livelihood improvements of the rural population through on-farm employment and employment in shrimp and fish processing activities.

The speaker then went on to mention problems caused by the fact that income and employment opportunities in shrimp culture have attracted inexperienced farmers to enter the industry on a large scale. As a result, at the beginning of this year, there were problems with diseases and poor water resource management, which caused huge losses in production. These problems are likely to continue, as there was a lack of extension services, good planning and also of regulations.

Regarding information on domestic marketing and utilization of fish and fishery products in Viet Nam, the speaker concluded that only little information was currently available.

However, general information on exports was available on topics such as importing countries, prices, volumes and values of main product groups, detentions and growth rates.

As far as sources of information are concerned, the speaker explained that the Fisheries Information Centre at the Ministry provides above information on their Internet site (www.fistenet.gov.vn). In addition, the Viet Nam Association of Seafood Exporters and Processors (VASEP) can provide lists of processing and exporting companies with their products and markets. The National Institute of Nutrition under the Ministry of Health has consumption figures for fish (currently 18 kg/year) available and for subgroups such as fish sauce, freshwater fish and dried fish.

The speaker stressed that the Ministry of Fisheries recognizes that much needs to be improved in the field of fish marketing and utilization and was therefore very interested in this project.

Among other issues, the speaker identified the following problems of fish marketing and utilization in Viet Nam:

- poor handling of fish/shrimp at sea and by farmers, resulting in lower quality products;
- mislabelling of products (e.g. catfish for United States market) was damaging the image;
- lack of ice and cold storage facilities, resulting in poor quality of products;
- lack of suitable infrastructure at fish markets (shelter, electricity, clean water) result in poor quality of products;
- low prices in domestic and at present also in export markets; and
- little added-value fish production in Viet Nam, most is carried out abroad.

The speaker expressed his hope that the information to be collected by the project would help to further specify and quantify the problems, to identify opportunities to solve them and to improve the situation for all actors in the fisheries product-marketing chain. The speaker pointed out that most institutions and projects active in the Vietnamese fisheries sector which are considering marketing and utilization issues are focusing primarily on the export of the products rather than on domestic fish marketing and utilization. Active in marketing issues are among others VASEP, MOFI, SEAQIP 2 and SIREP. Some field case studies of fish product marketing have been carried out by SEAQIP 1, INFOFISH and the WES project at Can Tho University.

The speaker concluded his presentation by inviting participants to come up with additional information on institutions or people that were or are presently involved in research on above and similar issues.

Dr Audun Lem, FAO Rome, followed with his presentation. He stated that this project was the first occasion on which FAO participates in a fish marketing project in Viet Nam although INFOFISH has carried out several studies in the country previously. Whereas the majority of projects in which FAO's Fish Utilization and Marketing Service is involved, deals with international trade and marketing issues, domestic marketing projects become increasingly more important. Similar projects carried out in other countries have addressed issues such as:

- the structure of domestic marketing channels;
- organization of sales on the first hand level (fisherfolk and farmers);
- price formation on the different levels in the marketing channel;
- the links in the marketing chain from producers to consumers;
- levels of organization by fisherfolk/farmers;
- organization of processors;
- distribution of fish in urban areas/large cities (wholesale markets);
- logistics: how fish is brought/transported through the marketing chain to the consumer;
- cost and price mechanisms; and
- organization at retail level.

Dr Lem underlined that the purpose of the project and studies was to arrive at a better understanding of how the market operates. This would prove useful to policy makers as well as to the fishery industry itself. Other uses of the information to be generated by the project and studies are possibly in policies on nutrition, food quality and safety, in consumption studies, demand and supply projections and export promotion strategies.

In the discussion following the two presentations, the lack of information on fish marketing and utilization in Viet Nam was confirmed. None of the workshop participants could provide any additional information on studies on the topic, which have been carried out in Viet Nam in the past and related publications. Regarding the organizations and institutions mentioned in Mr Van Anrooy's presentation, i.e. SEAQIP 1, INFOFISH and the WES project at Can Tho University, the national

consultants assigned to the project would undertake the work and secondary data analysis.

3.4 Identification of issues to be covered by the studies – working groups and plenary session

Four working groups were formed to discuss and agree on the main types of information to be collected and issues/factors to be considered by the studies to be carried out under the project.

Each group dealt with a particular type of actor/intermediary in the fish production-marketing chain:

- Primary producers
- Middlepersons/wholesalers
- Processors/exporters
- Retailers/consumers

Among others, the working groups considered the following issues:

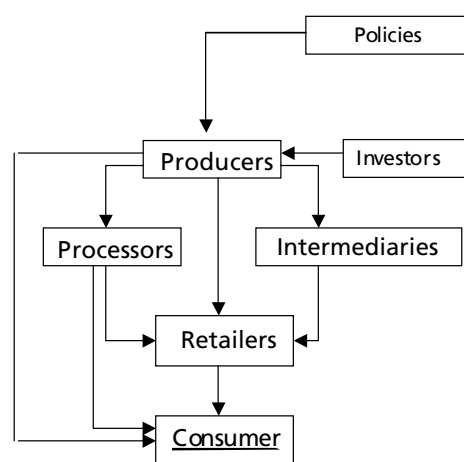
- i. structure of the market (level of competition, open access, rules and regulations; number of actors, interaction between actors);
- ii. characteristics of this specific marketing channel of fishery products;
- iii. the five Ps of marketing (place, product, price, promotion and people);
- iv. common practices, trends and recent changes with respect to marketing;
- v. constraints to marketing, sales and processing;
- vi. needs and opportunities with respect to marketing;
- vii. financial flows, investment cost and cost of operations, credit sources and needs;
- viii. functions and services carried out by this level in the marketing chain; and
- ix. interaction with other intermediaries and actors in the marketing chain.

The findings of the working groups were presented in the plenary session and are shown below.

Group 1: Primary producers

The working group agreed that, among other things, the following type of information should be collected and issues and factors considered:

Structure of market



Competition

- Species
- Sources of investment
- Production scale

- Consumption (place, buyer)
- Product quality
- Education/knowledge level of the producers
- Market information

Interaction between actors

- Input suppliers ↔ producers
- Producers ↔ buyers (middlepersons, processors, retailers, consumers)
- Producers ↔ producers

Regulations, rules and law

- Resource protection and conservation laws
- Resource taxation policies
- Credit regulation
- Planning regulations (land, water use)
- Economic development policies
- Price policies (inputs)

The five Ps of marketing

- P1. Place:
 - ⇒ Fish landing site/fish market
 - ⇒ Production area (geographic, market, environment, economic condition)
 - ⇒ Input supply ability
- P2. Product:
 - ⇒ Species
 - ⇒ Form (raw, processed, dry, fresh)
 - ⇒ Quantity
 - ⇒ Quality
- P3. Price:
 - ⇒ Price variation/fluctuation
 - ⇒ Exchange rate
 - ⇒ Added costs (storage, transportation, taxes)
- P4. Promotion:
 - ⇒ Promotion policies
 - ⇒ Supporting services
- P5. People:
 - ⇒ Education level
 - ⇒ Experience (management, technical, economic)
 - ⇒ Human resource (availability and cost of appropriately qualified labour)
 - ⇒ Common practices, trends

Common practices:

- Mass media
- Advertisement
- Training, visit
- Market access

Trends:

- Direct (active/passive)
- Indirect (marketing, information)
- Cooperation/association

Constraints to marketing

- Lack of experience/knowledge
- Lack of investment/credit (source, time, interest)
- Lack of facilities
- Lack of information
- Lack of understanding of consumers' preferences
- Low level of technology in advertisement, broadcasting, forecasting
- Small-scale production
- Incomplete planning

Opportunities with respect to marketing

- Stable and good policy environment
- More and more sectors involved
- Improvement of producers' self-reliance

Financial flows

- Cost of capital investment (fishing vessel, pond, etc.)
- Input costs (seed, electricity, and water for aquaculture, fuel, labour for fishing)
- Operational costs including management and training costs)
- Post-harvest costs (storage, processing, transportation).
- Income: production/productivity/price, total revenue (gross income), net income (gross income – costs)

Credit sources

- Own resources and savings,
- Loans from:
 - ⇒ Middlepersons (investors)
 - ⇒ Banks
 - ⇒ Moneylenders
 - ⇒ Women's Union
 - ⇒ Friends, neighbors, relatives
 - ⇒ Projects

Credit needs

- Amount of money
- Time (long-term, middle-term, short-term)
- Interest rate
- Procedures

In the discussion following the presentation of working group 1, the question was asked whether trends could be observed as far as direct marketing (few or no intermediaries) and indirect marketing (many intermediaries) of fish products by primary producers in Viet Nam. In response the rapporteur of group 1 suggested that in the case of small-scale fisherfolk and fish farmers a trend to direct selling and marketing of fish could be observed whereas for medium and large-scale fishing enterprises and fish farms, there was a trend towards more indirect marketing of fish and fishery products.

It was also suggested that generally, the number of middlepersons was increasing between primary producers and fish processors and also at the regional level, i.e. between districts and provinces. In response to queries as to whether this resulted in less or more competition, it was pointed out that the increase in the number of middlepersons meant that fish marketing was becoming more competitive in Viet Nam

Questions were also asked regarding recent changes in the sources of credit. The rapporteur of working group 1 explained that banks like the Bank for the Poor was now providing more credit for aquaculture and has increased their loan ceiling to VND 10 million. In spite of these efforts by the Bank for the Poor, there was still a lack of institutional credit for fishing, fish farming and fish marketing and processing. The rapporteur of working group 1 also mentioned that as competition among middlepersons was increasing, they also provide more loans to fish farmers to ensure regular fish supplies.

Other interventions focused on the role of sales organizations and cooperatives among fisherfolk and fish farmers. It was explained that generally there were no formal sales and cooperatives involved in fish marketing. Cases could be observed though where producers such as shrimp farmers assumed the role of collectors/middlepersons themselves by taking turns to collect shrimps from other farmers and to sell them to processing factories. Other cases were mentioned where middlepersons had organised fish farmers to informal groups with the purpose of facilitating the collection of fish and shrimp from these primary producers.

Questions were also asked whether an increase in the number of middlepersons had an effect on the information flow regarding retail prices, demand, etc. to primary producers. In response, members of working group 1 observed that an increase in the number of middlepersons goes hand in hand with a reduced flow of information.

Group 2: Middlepersons and wholesalers

The group presented the following report:

Parameters	Dimensions	Variables	Categories	
1. Market	Characteristics	Market participation	Free	
		Market information	Adequate	
		Legal framework	Inadequate	
		Competitiveness	Unfair	
		Pricing	Market price	
		Number of actors		
	Types of actors	Organization		Private
				Stock sharing
				Cooperatives
				Groups, kinship,
				Public sector (wholesalers)
		Geographically	Offshore	
			On shore	
Trading decision		Precontracted		
		(verbally, advance/loan related)		
		Free market		
2. Characteristics of actors	Scale of operations			
	Geographical coverage			
	Working capital			
	Labour	Technical knowledge		
		Sources of labour		Family labour, hired
	Hygienic practices			
	Storage facility			
Transportation				
Trading responsiveness		Timely		
		Quality		

3. Common practices, trends, and recent changes	Common practices	Subjectivity, directness	
	Trends	Scale	Increasing trading volumes Emergence of large trading groups
		Coverage	Diversification of products and customers Expansion of market share
		Organization	Combined with processing Combined with farming
	Recent changes	Government policies	Tax, credit, infrastructure
		Area of aquaculture	
		Fishing area	Offshore fishing
		Technological change	Farming, fishing
		Processing industry	
		Input markets	
4. Constraints	Information	Feedback loops	
	Legal framework		
	State administration	Trading administration	
	Scale of production		Small, scattered
	Market competition		Unfair
	Storage facilities		
	Transportation facilities		
	Marketing knowledge		
5. Needs and opportunities	Needs	Market information	
		Knowledge	
		Legal framework	
		Technology	Storage, transport
	Opportunities	The sector development	
		Technological change	
		The development of the national economy	
		Government policies	Infrastructure, credit, information
6. Financial flows, investment costs, costs of operations, credit sources and needs	Financial flows	Sources of funds	Own, loans, shared
	Investment	Storage facilities	
		Transportation	
	Costs of operations Gross output	Commodities	
		Transportation	
		Storage	
		Tax	
		Insurance	
		Advertisements	
		Risks	
Interests on loans			
7. Services	Supply of inputs		
	Supply of logistics		
	Packing		
	Transportation		
	Storage		
	Finance and credit		

In the discussion following the presentation of working group 2, the question of the role of middlepersons in the export of unprocessed raw material was raised. The rapporteur of working group 2 explained that in many cases, unprocessed raw material was exported without the intervention of middlepersons. The cases of clams and mackerel were referred to; these were directly bought from primary producers in Viet Nam by Thai importers and Chinese fisherfolk (at sea), respectively. Another case was mentioned where Vietnamese fisherfolk were selling directly to Malay fish importers.

In addition to these cases where primary producers were interacting directly with foreign importers and thereby had shortened and simplified the marketing chain, there were cases where former middlepersons had expanded their role and formed companies, which directly exported life fish rather than supplying it to exporting companies.

Group 3: Processors and exporters

The presentation of group 3 can be summarized as follows:

Introduction:

- Total output of fisheries: 2 million tonnes
- Raw material: 1.28 million tonnes, finished products 723 000 tonnes
- Export: about 400 000 tonnes per year valued at: US\$1.46 billion
- 61 exporters/processors have obtained EU certification
- 70–80 processing factories have obtained HACCP certification
- 6 laboratories (NAFIQACEN)

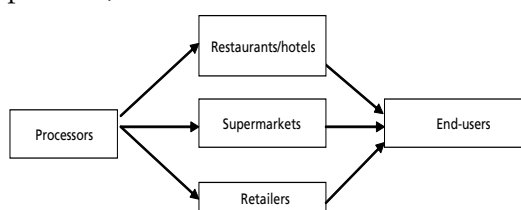
Findings of working groups

a. Constraints to processing and exporting

- Processing
 - ⇒ low technology and product quality;
 - ⇒ lack of cold storage meeting regulated standards;
 - ⇒ seasonal production: difficulties in matching seasons and consumer demand;
 - ⇒ lack of adequate infrastructure in fishing ports, and lack of roads;
 - ⇒ lack of regular and professionally trained workers; and
 - ⇒ lack of investment capital for purchasing equipment for fish processing plants.
- Exporting
 - ⇒ lack of information on markets, especially in the case of small enterprises.
 - ⇒ lack of experience in international marketing (e.g. mislabelling of Ba Sa catfish in the United States originating from Viet Nam).
 - ⇒ lack of short-term credit/overdraft facilities for commercial activities.
 - ⇒ lack of insurance and risk-reducing arrangements for exported goods in cases such as customers making payments, detention of shipped goods etc.

b. Domestic market issues

- Potential: population, income



- Channels
- Constraints
 - ⇒ Lack of market information on all major type of products i.e. live, frozen, dried, canned, processed (fish spring rolls, fish balls etc.)
 - ⇒ Advertisement and marketing
 - ⇒ Opportunities
 - ⇒ Availability of investment support and government investment support
 - ⇒ Liberalization of international trade
 - ⇒ Increasing living standards and demand for fish products, both in domestic and international markets

The discussion following the presentation of working group 3 focused on linkages between export and domestic markets for fish and fishery products. It was explained that the domestic demand for high quality seafood was growing. There was also a growing demand for processed fish products as employment, also of women, was increasing and people had less time for cooking.

Participants pointed out that some exporting companies already supplied the domestic market and also had special promotion and marketing strategies and programmes. Other companies were in the planning stage. It was suggested that the study should make a special effort to identify opportunities for better linkages between export and domestic markets and also identify related investment and technical assistance needs.

Group 4: Retailers and consumers

Overview

Working group 4, dealing with retailer and consumer issues, noted that data availability on consumption of fishery products in Viet Nam was very low. The members of the working groups identified no information sources other than that already mentioned in the presentation by Mr Raymon van Anrooy summarized above. The report of the group as presented in plenary can be summarized as follows.

Consumption of fish is still relatively low in Viet Nam. One reason was that before Doi Moi (economic liberalization), quality of fish was low as fish marketing was carried out by public sector enterprises. Consumers in Viet Nam prefer fresh and not frozen products as supplied by the state-owned enterprises (SOEs) at that time. The image of fish products among older people was still affected by bad experiences of those times.

Marine fish marketed in big cities was still of low quality as a result of inadequate storage. Ice was sometimes available but turnover was low. Marine fish was in most cases more expensive than freshwater fish. The working group considered that there are too many brokers/middlepersons in the marketing chain and that transaction times are too long and profit margins too high. Consumers usually do not know the suppliers of fish and many suppliers have a bad reputation. There are no established brand names of companies or products and it was difficult to know whether fish were coming from a reliable source. There are no guarantees of the quality of fish products.

The variety of marine fish species caught and marketed was large. People do not know which species has which taste. Sometimes fish were kept fresh/preserved by the use of chemical fertilisers. This practise has negatively affected the image of the fishery products and sector. Consumers generally know more about freshwater fish and therefore it has a better image than marine fish. Consumers can buy it alive or freshly caught. Sometimes, however, freshwater fish was contaminated with pesticides and city waste but many people are not aware of this. As distances are smaller and costs of distribution lower for freshwater fish than for marine fish, the freshwater products are often cheaper.

The group also noted that people eat more fish at home than in restaurants. The income of many households was too low to purchase marine fish. People prefer small and low-priced fish for home consumption. Most people buy at markets, some at stores with refrigerators or aquariums. Canned products (herring and tuna) do not have a good image as people think that the preservatives they contain are harmful for their health. Generally, best quality fish products are exported and lower value products are sold domestically.

Seafood was consumed all year round, however, the species availability changes. There are no big differences in consumption levels of fish between the summer and winter season.

Structure of the market

The following was concluded regarding the structure of the market at the retail level:

- There was full competition at retail fish markets and large numbers of retailers and buyers. The same applies to sales to restaurants and street vendors, as the number of street vendors and retailers was large.
- While there was a fee for market traders to make use of market facilities of about 2000 VND/day, there was open access for everyone to sell their products.
- No licenses are needed for street vending of fish and fish products.
- Sometimes, though, there was an oral agreement between sellers to fix prices at retail markets. This occurs more often between middlepersons.

Special characteristics of the retailers/market traders are:

- The majority of traders run small and family enterprises. Sometimes, processing companies have retail shops. Examples are SEASPIMEX a member company of SEAPRODEX Viet Nam and Halong Seafood Cannery (CANFOCO).
- Differences in revenue are high among retailers depending on the quantity and type of product.
- There exists a negative relationship between the number of links in the marketing chain and the quality of fish products.
- The working group also observed a positive correlation between the number of links in a marketing chain and the end price of products.

The five Ps of marketing

- P1. Price:
Women get better prices for products as traders and pay less as customers. Products are more expensive on large markets as more facilities are used. Total supply of fish and fisheries products was sufficient and, in general, demand can be met at any moment. While demand and supply are generally well balanced, some products are only seasonally available. Outside their season, these products are much more expensive.
- P2. Place:
In coastal areas and big cities, fish consumption was higher than in rural and mountainous areas. In larger markets, facilities to store fish and fish products are available. In many smaller markets only ice was available.
- P3. Product:
Dried products are more frequently consumed in mountainous provinces and moderately priced, as incomes of consumers are low. No fresh marine products are sold in mountain areas. Marine fish was rarely processed. In freshwater products, keeping and selling fish alive adds value.
- P4. Promotion:
Market traders clean the fish free of charge and also give spices for its further preparation at home. They also provide advice on how to cook it. Discounts

are given for regular customers and large quantities. Some seafood shops, which are linked to larger companies, provide leaflets/advertisements. Few processing companies, which mainly export sell a part of their production domestically. These companies have advertisements on TV and in newspapers. Special products for the domestic market such as frozen products are not common yet. Only a few marketing surveys have been carried out by fish processing companies.

- P5. People:

Farmers eat less fish by tradition than other groups of the population. Many retailers are very experienced in the selling and marketing of fish.

Common practices/ trends and developments

- MOFI to promote that processing companies pay more attention to domestic market
- Improvement of fish sauce products was a current issue of attention
- More consumption of fish is expected as income of people increases
- Diversification of fish products continues
- Foot-and-mouth disease and other diseases in pork and chicken are resulting in more people eating fish
- Easy to cook and processed products are increasingly preferred as people like to spend more time on other activities than domestic ones. Government tries to improve the economic role of women and employment of women was increasing. However, this results in having less time was available for work inside the household.
- People become more aware of fish as a healthy source of food

Constraints to marketing at the retail level

- Cold storage facilities are limited
- Quality was not guaranteed
- Not much diversification in products
- Limited knowledge about the needs and wants of customers

Needs and opportunities with respect to marketing at the retail level

- Information requirements of retailers and consumers are increasing
- No agency that can deliver frequently updated information of good quality (government task)
- Quality should be increased and price kept low, people should not need to worry about harmful substances in fish products
- Education of people needed on the benefits of seafood consumption (health aspects)

Financial flows, investment and credit at the retail level

In general, fish retailers do not make many investments. Market traders and retailers mostly do not want to invest in better equipment or facilities, but prefer investment in large quantities of produce. There are investment needs for government though to improve the facilities (infrastructure, e.g. roads and market places) and organizations/institutions to provide regular price information. Access to credit was relatively easy from various banks. Delayed payment facilities and credit was obtained from middlepersons, companies and fish farmers and no interest was charged.

Functions and services provided by retailers

- Market traders and retailers sometimes transport fish from wholesalers to markets and sometimes wholesalers deliver fish to retail markets
- Buying and selling of fish

- Storage of fish at retail market
- Preservation of fish by adding ice
- Cleaning of fish and providing advice on its preparation on request of customers
- Home delivery to restaurants and large consumers

In the discussion following the presentation of working group 4, the question was raised whether there were differences in fish consumption between towns and rural areas. The rapporteur of working group 4 replied that no information was available on this.

Other interventions focused on preferences for freshwater and marine fish. It was pointed out that in Northern Viet Nam as well as further inland, freshwater fish was preferred while marine fish was more popular in Southern Viet Nam and in coastal areas. The picture has recently been changing, and marine fish has also become popular in Hanoi and in dried form even in the mountainous inland areas of central and northern Viet Nam.

Concluding the presentations and discussions of the working groups it was agreed that the issues and factors identified by the working groups would form a first basis for formulating key informant interview guidelines and sample survey questionnaires by international and national consultants. Other variables should be added as needed.

3.5 Survey design, geographical coverage and timeframe

Dr Uwe Tietze, FAO Rome, presented survey design and geographical coverage of the project. Mr Raymon van Anrooy of the FAO Representation in Hanoi introduced the workplan and time frame of the project. Mr Erland D. Jensen, Fisheries Management Information System Adviser of the Fisheries Sector Programme Support, gave a brief overview of the Fisheries Information Management System, which was being introduced in close cooperation with the Fisheries Information Centre of the Ministry of Fisheries.

With reference to the project document, it was explained that three regions were to be covered by key informant interviews and sample surveys i.e. Northern, Central and Southern Viet Nam. The total number of key interviews to be carried out was 85. The sample survey covered four provinces in each of the regions and the total number of interviews to be carried out had been set at 2 000.

In the discussion following the first part of the presentation, it was suggested to reduce the number of provinces to be covered by the study in central Viet Nam to three and increase the Provinces to be covered in Southern Viet Nam to five because of the greater importance of the fisheries sector in the south. The provinces/cities, finally selected were:

- Northern Viet Nam (Hanoi, Quang Ninh, Bac nan, Nghe An)
- Central Viet Nam (Danang, Khanh Hoa, Da La)
- Southern Viet Nam (Ho Chi Minh city, Ca Mau, An Giang, Kien Giang, Ben Tre)

Regarding the institutions to be employed for carrying out sample surveys, the workshop agreed that in addition to the institutions mentioned in the project document i.e. the University of Social Sciences in Hanoi, the University of Fisheries in Nha Trang and the University of Can, other institutions should also be considered for carrying out the field survey. A final selection should be made after the institutions have been contacted and their capacity to carry out the study according to the timing envisaged in the work plan has been assessed.

As far as the sample to be studied by sample survey and interviews with key informants are concerned, it was agreed that it would consist of the nine subsamples mentioned in the project document. These include primary producers in capture fisheries; primary producers in aquaculture; fish processing and exporting companies;

fish buying and selling middlepersons; fishery and aquaculture inputs supplying enterprises; wholesalers/distributors; retailers; consumers; as well as fishery experts from fisheries research and administration.

Regarding the scale of operations of the various actors/intermediaries to be covered under each subsample, it was agreed to include in each subsample a roughly equal number of small-scale, medium-scale and large-scale operators.

Regarding the sample selection it was agreed to select a random sample wherever sampling frames were available. Where this was not the case, sample units should be selected purposively. The final decision was left to the international and national consultants who would be involved in the studies. Key informants would be purposively selected depending on their responsiveness and expertise.

As far as sample size was concerned, the number of 2 000 interviews to be carried out under the sample survey and 85 key informant interviews was found adequate. The final determination of subsample sizes was left to the international and national consultants.

It was also agreed that prior to the commencement of the sample survey, a workshop should be held in which all interviewers and supervisors who would be involved in the sample survey would be trained and where the fieldwork would be coordinated.

The timeframe of the project as mentioned in the project document was in principal agreed on. As the project started later than envisaged in the project document and there were possible delays in recruiting a National Project Manager and National Experts, it was also agreed that some adjustments would have to be made.

As far the relationship of the project with the FMIS was concerned, which was being introduced in Viet Nam, it was emphasized that the information to be collected by the project should be, as much as possible, compatible with and supplement the information on fish marketing and credit, which was presently being collected in the framework of the FMIS. The project should also make use of and strengthen already existing channels of information and already existing information in the FMIS. Last, but not least, the studies to be carried out by the project should be designed in such a way that most of the information to be collected through them can later be routinely collected and analysed and would form part of the FMIS.

3.6 Closing session

The workshop concluded with closing remarks by Mr Thai Thanh Duong on behalf of the Ministry of Fisheries of Viet Nam, Dr Uwe Tietze on behalf of FAO and by Mr Frits Jepsen on behalf of DANIDA. The speakers expressed their satisfaction with the outcome of the two-day workshop and thanked the participants for the active and resourceful participation.

It was hoped that the workshop had laid a solid foundation for the new project. The project was expected to initiate a regular flow of information on fish marketing in Viet Nam and related financial, investment and credit issues for the benefit of producers and consumers, the fishery industry as well as fisheries administrators, planners and managers.

Appendix 1

Workshop programme

Fish Marketing and Credit in Viet Nam
Project Inception Workshop
2-3 October 2001

Venue: Conference Room of the DANIDA Fisheries Sector Programme Support
Ministry of Fisheries
10 Nguyen Cong Hoan Street.
Hanoi

Tuesday, October 2

9.00 – 10.00

- Opening session. Welcome addresses by:
 - Ms Fernanda Guerrieri (FAO Representative in Viet Nam)
 - Dr Thai Thanh Duong (Director of the Fisheries Information Centre)
 - Mr Frits Jepsen (Coordinator of the DANIDA FSPN)
- Introduction of the workshop participants
- Briefing on the workshop aims
- Review of the workshop agenda

10.00 – 10.15

Coffee break

10.15 – 12.00

- Review of the available secondary data on fishery products marketing (and related credit issues) in Viet Nam
- Introduction to working group sessions

12.00 – 13.30

Lunch

13.30 – 15.30

Working group sessions for identification of issues to be studied:

- Group 1: primary producer level marketing and credit/finance issues
- Group 2: middleperson/wholesaler marketing and credit/finance issues
- Group 3: processing/exporting industry marketing and credit/finance issues
- Group 4: retailer and consumer marketing and credit/finance issues

15.30 – 15.45

Coffee break

15.45 – 17.30

Working group sessions continued

Wednesday, 3 October

8.30 – 10.00

Plenary session – discussion of findings of working groups 1 and 2

10.00 – 10.15

Coffee break

10.15 – 12.00

Plenary session – discussion of findings of working groups 3 and 4

12.00 – 13.30

Lunch break

13.30 – 15.30

Plenary session on survey design, geographical coverage of survey, definition of responsibilities and terms of reference of participating institutions/contractors, identification of main dimensions/variables to be covered by questionnaires and interview guidelines

15.30 – 15.45

Coffee break

15.45 – 16.30

Plenary session on time frame and work plan of project

16.30 – 17.00

Closing session

Appendix 2

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Fish marketing in Viet Nam: current situation and perspectives for development

Dr Erhard Ruckes,
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with assistance from
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Consultant

1. INTRODUCTION

1.1 Background

Since the early 1980s, Viet Nam's fisheries sector has shown remarkable changes. This started with policies on marketing improvement; export promotion and enhancement of product value. The fisheries sector is recognised as a key economic sector with an annual contribution of 4-5 percent of the national GDP, 9-10 percent of the national export turnover and the creation of employment for the millions national labour force.

Currently, the fisheries sector has integrated with the national market economy. However, an understanding of how market mechanisms operate within the sector is still limited as there is little available market and marketing information on the fisheries sector. Most of the current market information available on fisheries focuses on fisheries exports. There has been little research carried out in the field of fish marketing in general. Although there are some individual, often donor funded, projects that carried out small research studies on domestic consumption and marketing of fish, consumer behaviour and preferences.

Since November, 2001 the project on *Fish Marketing and Credit in Viet Nam* (MTF/VIE/025/Misc) was implemented for one year by the Food and Agriculture Organization of the United Nations (FAO) under the financial assistance of the DANIDA FSPS. The project comprises four main subcomponents, which cover issues related to fish marketing, credit for fish marketing, vertical chains cooperation in fish marketing, and finally economic modelling for fish marketing development. The main purpose of the project was to fill the current gap in information on the marketing of fishery products in Viet Nam to support the Ministry of Fisheries, institutions and donors active in the sector to address the needs of the sector better and support the decision-making processes in the sector.

This report relating to fish marketing issues was prepared with the following consideration in mind:

- Various types of marketing agents are involved in the marketing channels from primary producers to final consumers. They include fish farmers, fisherfolk, wholesalers, processors, exporters, retailers and institutional consumers. However, understanding of the roles these actors have in fish marketing and information on how they are organized, how they mobilize labour for fisheries, what available internal resources are still limited. The lack of information makes it difficult for planners and institutions concerned to elaborate a cohesive development strategy for the sector.
- The flow of fisheries products in the marketing channels is facilitated by various kinds of support services and logistics such as transportation, communication and information services. The quality of fisheries products is very much dependent

upon such services so that the products reach customers on time, at low-cost, in the right place and in the form demanded. In addition, the involvement of such kinds of services also generates marketing costs that influence the price paid by final consumers. Therefore, the mechanisms on how to create a win-win scenario when accessing the support services for fish marketing are still a question for many marketing agents.

- Fisheries products follow different routes to reach consumers and there are many marketing stages involved. However, an understanding of the fish marketing operations is still limited. The effectiveness the marketing channels and the importance of the roles of each marketing agent are the key considerations for planners and related institutions. Filling this information gap would help policy makers in design of fisheries development projects or programmes to enhance the performance of marketing agents in order to make more fisheries products available to consumers.
- In each marketing channel there is not only a physical flow of fisheries products from producers to consumers, but also a feedback flow of information from consumers to producers. In a top-down or command economy this backward flow of information was often skipped and consumers or marketing agents at following stages had to accept what was provided from earlier marketing stages. In the current situation of fish marketing in Viet Nam, the feedback flow of information is also limited. This is an obstacle for the Ministry and related institutions for a proper intervention for the development of the sector.

In this context, the studies on fish marketing aimed to:

- analyse the roles of the various market operators in fish marketing;
- examine the current fish marketing systems;
- evaluate the fish market performance and operation of fish market operators, and
- identify perceptions of fish market operators regarding problems and expectations for improved fish marketing.

1.2 Methodology

In order to have the project strategy clearly defined, a two-day inception workshop was held at the MOFI on 2–3 October 2001 by FAO, MOFI, and DANIDA–FSPS. The workshop drew the attention and participation of various actors and institutions in fisheries sector nationwide. The participants made valuable contributions with regard to the framework set by the project, the methodology to carry out the project and the geographical coverage of the project.

1.3 Project design

For this research project on *Fish marketing and credit in Viet Nam* a sample survey provinces and cities from the 3 regions were purposely selected namely Hanoi, Bac Can, Quang Ninh, and Nghe An in the north; Da Nang, Khanh Hoa, and Daklak in the central region; and Ho Chi Minh City, Ca Mau, An Giang, Kien Giang, and Ben Tre in the south (see table below).

Target respondents of the study were defined as the key stakeholders participating in fish marketing channels, starting from the primary producers to the final consumers. As this study concentrated on fish marketing, especially domestic marketing, its scope focused on issues of marketing of fisheries products at farm and fishing port levels and demand and consumption patterns of fisheries products at consumer level along with issues dealing with the operations of traders namely wholesalers, retailers, and processors or exporters. Therefore, the target respondent groups for the sample survey were: fish farmers, fisherfolk, wholesalers, processors/exporters, retailers, institutional consumers, and household consumers.

Sample distribution of the survey

Province / Region	Type of producers		Marketing Channels					Total
			Wholesalers	Processors/ Exporters	Retailers	Institutional consumers	Household consumers	
	Fisherfolk	Aquaculturists						
North total	60	120	121	36	40	101	200	678
Hanoi	-	30	49	6	30	39	110	264
Quang Ninh	30	30	32	20	10	20	30	172
Bac Kan	-	30	20	-	-	22	30	52
Nghe An	30	30	20	10	-	20	30	140
Central total	60	60	88	21	30	60	181	500
Da Nang	21	10	29	5	20	20	100	205
Khanh Hoa	30	25	29	13	10	20	41	168
Dak Lak	9	25	30	3	-	20	40	127
South total	125	131	153	51	50	113	276	899
HCM City	20	20	30	25	40	32	150	317
Ca Mau	41	37	31	10	10	20	31	180
An Giang	6	34	30	5	-	20	34	129
Kien Giang	38	20	30	6	-	21	31	146
Ben Tre	20	20	32	5	-	20	30	127
Overall total	245	311	362	108	120	274	657	2 077

A sample size of 2 077 respondents was determined for the whole country; 678 respondents were allocated for the north, 500 for the central region, and 899 for the south. The distribution of sample size among the provinces, cities, and the groups of respondents is presented in the Table above. In addition, in order to obtain a thorough understanding of the fish marketing and credit issues and to substantiate the information gathered from the sample survey for the purpose of analysis, about 85 in-depth interviews were conducted for different groups of respondents in various regions.

Various sampling techniques were used for the study. The purposive sampling method was used to select the provinces and cities as mentioned above. Districts, communes, markets, processors, exporters, etc. were selected by different methods of sampling, varying according to the situations in each region or province. The commonly used methods were simple random sampling, cluster sampling, convenience sampling, judgment sampling and snowball sampling.

1.4 Data collection methods

In order to understand fish marketing issues in the country, secondary data regarding the development of fisheries sectors over recent years were collected mainly from FICEN, FAO and GSO. Information related to the sector development plans, programme, and other sectoral issues was gathered from different departments under the MOFI in the forms of reports, papers, etc. In addition, the study also received exchange information from the FMIS under the FSPS-DANIDA on a database for fisheries classifications.

As data and information on the status, operations and performances of the key stakeholders in fish marketing channels were not available primary data were collected using a sample survey. The two prime tools for data collection in the sample survey were standardized questionnaire survey and in-depth interview.

The standardized questionnaires were designed for the seven different groups of respondents. Each set of questionnaires contained questions to obtain information from the respondents on the characteristics of the surveyed organizations, their operations and performances and problems they may encounter. The in-depth interviews were conducted using open-ended questions. The analysis of these surveys is presented in section 3.

1.5 Data analysis methods

Data and information collected were coded and incorporated into computerized databases using SPSS (Statistical Package for Social Science) software. Descriptive methods of analysis were used to describe the surveyed stakeholders in the chains, their operations and performances, using means, modes and percentages. Some diagrams were used for illustrating market operations. In addition, GINI coefficients were calculated for the analysis of market structure and market concentrations.

2. OVERVIEW OF VIET NAM'S FISHERIES SECTOR

2.1 Aquaculture

Resources

Viet Nam has a great potential for aquaculture development with 3 260 km of coastline, 12 lagoons, straits and bays, 112 estuaries, canals and thousands of small and big islands scattered along the coast. In the inland area, an interlacing network of rivers, canals, irrigation and hydroelectric reservoirs has created a great potential of water surface with an area of about 1 700 000 ha, in which:

- 120 000 ha are small ponds, lakes, canals, gardens;
- 340 000 ha are large water surface reservoirs;
- 580 000 ha are paddy fields which can be used for aquaculture purposes; and
- 660 000 ha are tidal areas.

The above figures do not include the water surface of rivers and about 300 000–400 000 ha of straits, bays and lagoons along the coast, which can be used for aquaculture activities but have not been planned yet.

However, by 2001, the total area of water surface used for aquaculture in the country was only 641 874 ha, representing 37.7 percent of the potential area for aquaculture. Notably, aquaculture practices, especially shrimp culture, are well developed in the south of Viet Nam, particularly in the Mekong River Delta where 445 154 ha were used for aquaculture in 2001, equal to 69 percent of the area suitable for aquaculture.

Along with the increase in area for aquaculture, total the output from aquaculture increased rapidly from 414 600 tonnes in 1997 to 589 600 tonnes in 2000, which accounted for 26 percent of the total output of the fisheries sector¹. Fish and shrimp were the main products of aquaculture with total output of 391 100 and 93 500 tonnes, respectively, in the year 2000. Shrimp culture expanded more rapidly than fish farming and between 1997 and 2000 shrimp output increased by 189 percent compared with 140 percent of fish output in the same period.

Labour force

In Viet Nam, the labour force engaged in fisheries sector in unknown as aquaculture activity is normally combined with activities in other sectors. However, statistics show that there are more than 4 million people living in tidal areas and about 1 million living in swamp and lagoon areas in 714 villages in 28 coastal provinces and cities. In addition, more than 12 million households in the rural area of Viet Nam make a substantial contribution to the fisheries labour force in various kinds of fisheries activities including fish farming, fish trading etc.

¹ Many of the tables in this paper provide results of a multiple response analysis. It is therefore important to keep in mind the implications for the interpretation of these numbers because they are not based on equal events (e.g. cases of same or at least similar transactions) but may refer to quite different events. For example, a transaction of 1 000 kg from fisher to wholesaler and one of 10 kg from fisher to retailer are counted as two events and as such used in the calculation of percentages with the interpretation that the fisher accounted for sells to wholesaler and retailer or that wholesaler and retailer receive supplies directly from fisher. Hence, the basis of the calculation is the number of nominations of a transaction from/to, not in any way a quantification of its magnitude. The result can be nothing more than an indication of an order of importance of transactions within the marketing channels from production to consumption. This needs to be kept in mind when reading the language used in the analysis.

2.2 Fishing

Resources

Viet Nam has a great potential for fishing activity with a total area of inland and territorial waters of 226 000 km², and an Exclusive Economic Zone of over 1 million km². Off the coast of Viet Nam, there are more than 4 000 islands, which could provide logistic services and transshipment facilities of products onshore, and provide shelter for fishing vessels during the stormy season.

The sea area of Viet Nam is divided into four main regions; namely the northern, central, south eastern, and southwest regions. Fishing activities are classified into inshore and offshore fishing based on the depth of the sea in each region. The limits of 50 m and 30 m deep are used for the central sea region and the other regions, respectively. Owing to diversified climate and weather conditions from the north to south, the fishing season is divided into two seasons: namely the south season (from March to September) and the north season (from October to February).

Compared to aquaculture, fishing is a major contributor to the total fisheries production. In 2000, its output was 1.66 million tonnes and accounted for 74 percent in terms of quantity and 64 percent in terms of value. Mostly fish amounting to 1.08 million tonnes, accounting for 65 percent of the total quantity captured.

Labour Force

According to FICEN, there were 423 583 labourers engaged in fishing activities in 1997, of which 309 171 persons or 73 percent engaged in inshore fishing, and the remaining 27 percent engaged in offshore fishing. The number of labourers engaged in offshore fishing increased due to the implementation of the Offshore Fishing Development Program initiated by MOFI.

Fishing fleet

Recently, the fishing fleet in the sector has developed rapidly. By the year 2000, total number of motorized fishing vessels increased up to 72 000 units with a total capacity of 2.5 million HP and 29 000 artisanal boats. The country had 6 000 offshore fishing vessels, which have an engine power of 90 HP upwards. The number of transport and service vessels accounted for 0.7 percent in terms of quantity and 2.1 percent in terms of capacity, which was very few as compared to the need. Fishing, transport and service vessel fleets continue to increase under the implementation of the offshore Fishing Development Program.

2.3 Fish processing and exporting

In 1998, the country had 187 processing factories, with a freezing capacity of about 200 000 tonnes/year. Twenty-seven factories met standards required by European markets. Programmes are being implemented for investing and improving food safety requirements and processing technology, applying quality management systems in use with GMP, SSOP, HACCP and for the equitization of state-owned enterprises.

Vietnamese fisheries products are exported to most regions of the world. In 1998, fisheries products were consumed in 50 countries and territories. The export turnover had increased dramatically to US\$1 777 billion in 2001, equal to 217 percent of that of 1998. It is estimated that the fisheries sector contributed as much as 12 percent to the total national export value. The main export products of Viet Nam for the last years were frozen shrimp/prawn, frozen finfish, dried squid, mollusc/crustacean and tuna. Among the export products, the frozen shrimp/prawn was the highest value products, which contributed 44 percent to total fisheries export value, while accounting for only 23 percent of the total export volume². Vietnamese fisheries products have been widely

² The total export volume of fisheries products in 2001 was 375 491 tonnes.

consumed in highly developed markets such as the United States, Japan and Europe, the major export markets. In 2001, according to FICEN, the largest share of fisheries export value went to the United States market, then to Asia (excluding Japan), followed by Japan with proportions of the total export value of 28 percent, 27 percent and 26 percent, respectively.

2.4 Major targets for fisheries development in the future

It is forecasted that by 2005 the country's export turnover would reach US\$ 2.7 to 3 billion per year. At that time, the total fisheries production would be 2.55 million tonnes, of which 1.4 million tonnes would be contributed from capture fisheries and the rest of 1.15 million tonnes from aquaculture.

In order to achieve these targets, the total area under aquaculture would need to increase to 1.4 million ha, of which 300 000 ha would have been transformed from rice culture to aquaculture. For capture fisheries, it is planned that 30 new fishing ports would be built and preservation technology used by fisherfolk could be upgraded.

2.5 Fish marketing development policy

According to the Ministry of Fisheries Domestic markets under subproject 3 of the Master Plan Project for Viet Nam Fisheries (1996), in the period 1985–1995 no specific laws and regulations dealing with the domestic fisheries market had been issued. The domestic fisheries market is under the control of general economic policies, laws and regulations of the nation. However, recently, national policies and regulations have been issued in order to promote domestic marketing along with the development of the fisheries sector as a key economic sector.

In order to promote the export of fisheries products and assist fisheries exporters to integrate with regional and global markets, the Viet Nam Association of Seafood Exporters and Processors (VASEP) was established in 1998. In addition, a Fisheries Development Programme has been specified in the Fisheries Development Strategy Period 2000–2010 of the MOFI, which has three economic target programmes namely Programmes on Offshore Fishing, Aquaculture Development and Fisheries Export Development.

For the domestic market, attention has been directed towards the improvement of the market network. MOFI has policies encouraging development of fish wholesale markets or transaction centres. Thus far, a fisheries transaction centre has been established in Ho Chi Minh City, and two others are planned for Khanh Hoa and Ben Tre provinces. Moreover, under the assistance of the ADB, 17 key fishing ports nationwide have been improved with provision of basic logistics for fishing and fish trading onshore. Recently, the Government of Viet Nam has established a policy of promoting contract farming in order to link production with marketing and processing activities. The following present some key points of the development policies for the fisheries sector.

Viet Nam Association of Seafood Exporters and Processors (VASEP)

VASEP was founded in 1998. Currently, it has 120 members as fisheries processors and exporters nationwide. Its aims are to coordinate and join activities of its members from different economic sectors, regardless of their production and business scale, assisting members to improve value, quality and compatibility of Viet Nam's sea products. VASEP represents and protects the legitimate rights of its members and of the seafood industry of Viet Nam. So far, it has taken part in the promotion of fishing and aquaculture to develop raw material sources and protect the prestige of the industry's products in the media and with consumers. In addition, it provides members with free-of-charge weekly and monthly Seafood Trade Newsletters with up-to-date information and special reports. Also it arranges a variety of training courses.

Fisheries export development programme

The Prime Minister of Viet Nam's Government issued the Decision 251/1998/QĐ-TTg, dated 25 December 1998, on approval of a programme on Development of Fisheries Export to the year 2005. The objectives of the programme were as follows:

- hasten the progress of industrialization and modernization in Viet Nam's fisheries sector;
- increase fisheries export value in order to reach US\$1.1 billion by the year 2000 and US\$2 billion by the year 2005;
- make fisheries sector a key economic sector of Viet Nam's economy;
- create more jobs, contribute to the improvement of people's life, put a new face to rural areas and coastal regions, and solve questions on environment and ecology;
- connect closely fisheries export with aquaculture, fishing, preservation and consumption of products;
- create firm bases for fisheries production and effective exploitation of fisheries potential;
- improve the quality of fisheries products, reduce production costs, increase efficiency and capital accumulation, and
- improve competitive capability and expand markets for fisheries products.

Development of fisheries wholesale market

In May 2002, Can Gio seafood transaction centre (a shrimp market) officially opened its doors in An Nghia hamlet, An Thoi Dong Commune, Can Gio District and HCM City by Cho Lon Import-Export and Investment (Cholimex). The centre receives supplies from Can Gio and Nha Be districts and Long An and Ba Ria-Vung Tau provinces, and provides information on market, shrimp breeding, feed and veterinary medicine, and others. It has two trading sessions a week.

According to the centre's data, 250 tonnes of shrimps have been registered for sale, of which 74 tonnes have been sold to seven businesses during four trial sessions and the first official session with a participation of about 300 farmers.

According to the Sai Gon Times, the tenth session of the centre witnessed the purchase of 10 tonnes out of 49.8 tonnes of tiger shrimp registered for sale by 11 farmers mainly from Ben Tre and Tien Giang southern provinces. The increasing number of farmers registering their shrimp for sale demonstrates that the centre has become a fish wholesale market for the region.

Policy promoting contract farming

On 24 June 2002, Vietnamese Prime Minister signed Decision no. 80/2002/QĐ-TTg on the policy promoting contract farming. The Decision encourages enterprises in all economic sectors to have farming contracts with farmers in order to create a stable link between farm commodity and processing and marketing activities to enable sustainable farm development.

The farming contracts should be signed at the beginning of a farming season, a year, or a production cycle in the form of credit advancement, technical assistance, and farm produce purchasing; input provision and farm produce purchasing; or direct farm produce purchasing and production cooperation. The farming contracts must cover the required items and be prepared on forms issued according to the law. During the implementation of the contract if either of the two parties violate any signed items they must bare full responsibility for any loss that may result.

3. ROLE OF VARIOUS OPERATORS IN FISH MARKETING

Various types of market operators are involved in the fish marketing process in Viet Nam: fish producers including fisherfolk and aquaculturists, market traders namely wholesalers and retailers, processors and exporters, fish consumers including

the institutional consumers, and also the public sector. The following sections examine the role of each category in fish marketing.

3.1 Fisherfolk

Inland fisherfolk

Viet Nam has a large area of freshwater bodies (lakes, reservoirs and rivers). Traditionally, the freshwater bodies provided a livelihood for a large portion of villagers who relied on freshwater fishing. Recently fishing in freshwater bodies has decreased because of lower productivity caused by over fishing and pollution of the water environment. However, freshwater bodies still play a significant role in supplying fish to specific regions of Viet Nam such as the central Highlands, some northern mountainous are as along the Red River system and several reservoirs. Most of the species caught from the freshwater bodies are those preferred by consumers, including catfish, snakehead, common carp, minor carp and major carps.

During recent years the management practices of freshwater fishing have changed. In most freshwater bodies, free fishing is no longer permitted. The user right of the water bodies is gradually assigned to different individuals or organizations. Freshwater fishing activities are also changing to freshwater aquaculture or cage culture. In the province of Dac Lak in the central Highlands, most of the reservoirs have been assigned to state-owned enterprises as long-term leases. These enterprises are responsible for making use of the water bodies. In the province of An Giang in the south, in most rivers and canals free fishing is prohibited so as to encourage and protect cage culture along the water bodies.

In general, freshwater fisherfolk operate at household level. They often use family labour and hired labour is necessary for their business. The fishing trip often lasts no longer than a day. They go fishing for about 22 days per month. The catch per day ranges from several to a hundred kilograms. The marketing activity is very simple. Fifty-seven percent of the fisherfolk sold their products to local wholesalers, a few sold to local retailers. However, nearly half (48 percent) of the fisherfolk often acted as retailers, selling fish directly to final consumers in local markets.

Marine fisherfolk

The fishing sector in Viet Nam has a history of centuries of operations with fish being transported inland from landing places along the coast of Viet Nam. The respondents,

i.e., the fishing informants, have spent 18 years on average in capture fisheries (Table 1). The proportion of the informants with more than 10 years of experience was 71 percent (Table 2). This long experience ensures good awareness of the business regarding various aspects including fishing techniques and marketing.

In general, the fishers specialize in marine capture fisheries. In 86 percent of the fisherfolk, capture fisheries was the main source of income, constituting more than 75 percent of the total income of fishing households (Table 3). The study also showed that 42 percent of the fisherfolk surveyed did not engage in any activity other than catching fish. The remaining proportions of the fisherfolk engage in various economic activities such as small trading, aquaculture, agriculture or boat repairing services. Small trading was the most preferable

TABLE 1
Fisherfolk working experience (years)

Region	Mean	N	Std. deviation	% of total
Northern	14.9	61	6.53	28.5
Central	18.6	48	8.63	22.4
Southern	19.3	105	9.99	49.1
Total	17.9	214	8.99	100.0

TABLE 2
Classifications of fisherfolk experience by region

Years of experience		Region			Total
		Northern	Central	Southern	
<5	Count	2	2	10	14
	%	3.3	4.2	9.5	6.5
5-10	Count	18	11	19	48
	%	29.5	22.9	18.1	22.4
>10	Count	41	35	76	152
	%	67.2	72.9	72.4	71.0
Total	Count	61	48	105	214
	%	100.0	100.0	100.0	100.0

additional activity carried out (Table 4). This is common in many fisherfolk households as women are often left at home during fishing trips and choose small trading activities as additional occupation.

The degree of specialization in capture fisheries was higher in the north than in the other regions. The survey shows that 68 percent of fisherfolk did not have any other activity. The strong specialization is confirmed by the fact that 98 percent of the fisherfolk have more than 75 percent of the total income from fisheries capture (Table 3).

Among the fisherfolk surveyed most (87 percent) were organized at household level (Table 5). The remaining fisherfolk were organized either in enterprises (private and state-owned), or joint-capital groups or cooperatives. Fishing cooperatives are formed and operate according to the Law of Cooperatives. When organized in cooperatives, fisherfolk may make higher investment, and have higher capability of offshore fishing and marketing. Fishing cooperatives may consist of 12 to 100 members. Unlike the cooperative, the joint capital group is normally the aggregation of several fishing households ranging from 2 to 12 households. The group has less favourable status in compassion with the fishing cooperatives especially in credit accessibility.

Since 2001, under the National Target Programme on offshore Fishing Development, the fleet of offshore fishing boats is increasing. The definition of inshore and offshore fishing is defined by water depth of the sea. Fishing beyond 30 m deep (50 m deep for the central region) is defined as offshore fishing (Table 6). In this study, 67 percent of the fisherfolk fished offshore. Consequently, it takes more than 17 hours on average for a boat to reach the fishing grounds and normally, a fishing trip lasts for 14.5 days (Table 7). Therefore it takes around ten days for the caught fish to be landed and the quality of fish may deteriorate unless effective preservation methods are available on board the vessel.

In general, after landing, the catch was sold directly to fish traders. However, 25 percent of the fisherfolk reported that they took a small proportion of the catch (from

TABLE 3
Contribution of marine fishing to fisherfolk income by region

Income range (%)		Region			Total
		Northern	Central	Southern	
<25	Count	-	3	1	4
	%	-	6.1	0.9	1.8
25-50	Count	-	2	5	7
	%	-	4.1	4.4	3.1
50-75	Count	1	13	7	21
	%	1.6	26.5	6.1	9.4
>75	Count	60	31	101	192
	%	98.4	63.3	88.6	85.7
Total	Count	61	49	114	224
	%	100.0	100.0	100.0	100.0

TABLE 4
Occupational activities of fisherfolk by region

Activities		Region			Total
		Northern	Central	Southern	
Aquaculture	Count	0	8	14	22
	%	0	30.8	31.8	26.8
Agriculture	Count	2	3	2	7
	%	16.7	11.5	4.5	8.5
Trading	Count	6	12	24	42
	%	50.0	46.2	54.5	51.2
Wage earning	Count	0	2	2	4
	%	0	7.7	4.5	4.9
Rural industry	Count	4	6	1	11
	%	33.3	23.1	2.3	13.4
Others	Count	0	1	2	3
	%	0	3.8	4.5	3.7
Total	Count	12	26	44	82
	%	14.6	31.7	53.7	100.0

TABLE 5
Organizational patterns of fisherfolk by region

Organizational patterns		Region			Total
		Northern	Central	Southern	
Household	Count	55	34	104	193
	%	90.2	70.8	92.9	87.3
Private enterprise	Count	2	5	8	15
	%	3.3	10.4	7.1	6.8
Joint capital group	Count	3	5		8
	%	4.9	10.4		3.6
Cooperative	Count	1	3		4
	%	1.6	6.3		1.8
State-owned enterprise	Count		1		1
	%		2.1		0.5
Total	Count	61	48	112	221
	%	100.0	100.0	100.0	100.0

TABLE 6
Locations of fishing by fisherfolk by region

Locations of fishing		Region			Total
		Northern	Central	Southern	
Inshore	Count	22	20	21	63
	%	36.1	40.8	18.8	28.4
Offshore	Count	38	20	90	148
	%	62.3	40.8	80.4	66.7
Both	Count	1	8	1	10
	%	1.6	16.3	0.9	4.5
Lagoon	Count	-	1	-	1
	%	-	2.0	-	0.5
Total	Count	61	49	112	222
	%	100.0	100.0	100.0	100.0

TABLE 7
Time spent fishing at sea by region

Region		Length of fishing trip (days)	Fishing days per month (days)	Hours to fishing ground (hour)
		Mean	5.4	16.8
Northern	N	61	61	61
	Std. deviation	2.67	3.78	3.8
	% of total N	27.4	27.4	27.4
	Mean	13.8	22.3	18.4
Central	N	49	49	49
	Std. deviation	25.37	4.09	13.8
	% of total N	22.0	22.0	22.0
	Mean	19.7	21.6	23.0
Southern	N	113	113	113
	Std. deviation	10.32	4.97	18.31
	% of Total N	50.7	50.7	50.7
	Mean	14.5	20.44	17.3
Total	N	223	223	223
	Std. deviation	15.22	5.00	16.37
	% of Total N	100.0	100.0	100.0

TABLE 8
Proportions of living products landed per trip by fisherfolk by region

No. of living products landed		Region			Total
		Northern	Central	Southern	
<20	Count	16	37	83	136
	%	36.4	82.2	92.2	76.0
20-40	Count	13	-	-	13
	%	29.5	-	-	7.3
40-60	Count	12	1	-	13
	%	27.3	2.2	-	7.3
>80	Count	3	7	7	17
	%	6.8	15.	7.8	9.5
Total	Count	44	45	90	179
	%	100.0	100.0	100.0	100.0

the central region and the southern Viet Nam. This was consistent with the current situation of aquaculture in the regions, where the north has a less important role with 61 percent of the farmers undertaking improved extensive aquaculture (this figure was much lower in the other regions).

Findings showed that aquaculture was new to fish farmers in the country. Compared with those working in marine capture, the proportion of farmers that had more than ten years of experience was much lower at only 15 percent. Basically, fish farmers are

5 to 10 percent) for other purposes such as home consumption, gifts, or for paying salary to their hired labourers as in-kind payment. Notably, 44 percent of the fisherfolk reported that they processed fish before selling. It was also reported that 80 percent of the fisherfolk could keep several species alive to sell at much higher price compared with the same species sold in the form of fresh fish. The main species that are often kept alive are grouper, mackerel, swimming crab and lobster. The proportion of live products, however, was often below 20 percent of the total catch per trip (Table 8).

3.2 Fish farmers

Aquaculture plays an important role in the rural economy where a large proportion of rural villagers live on the primary sector. Traditionally, aquaculture was not seen as an economic sector, as it mostly provided fish for household consumption and subsistence. Recently aquaculture has become a profitable occupation that strongly contributes to the income of rural families. From the survey, it was found that in almost half (49 percent) of the fish farmers 75 percent of their total income came from aquaculture (Table 9).

It is convenient to divide the aquaculture sector in Viet Nam into two types of culture: traditional aquaculture in the freshwater environment, and modern, intensive aquaculture mainly in brackish or marine waters. Among 311 fish farmers surveyed, 43 percent of them were brackish or marine fish farmers (Table 10). The distribution of the marine farmers was mostly in

the newcomers, in which 35 percent had less than 3 years of experience. The large number of the newcomers to the industry has caused various problems as experienced shrimp farmers criticized and complained; especially problems related to farming techniques, disease control and prevention and market competition.

Similar to the case of fisherfolk, most fish farmers (94 percent) were operating at household level (Table 11). Only a few farmers were operating in private or state-owned enterprises. Notably, it was found that 5 percent of the fish farmers were operating in the form of joint-capital groups from 2 to 10 shareholders. In this way fish farmers could accumulate resources and invest in the business for quick expansion.

The aquaculture sector is expanding dramatically and supplies various kinds of species and products for domestic and overseas consumption. For the domestic market, in addition to carp, major carps, snakehead and tilapia, various species of high economic value have been introduced, such as pomfret, hybrid catfish and tilapias. The growth of aquaculture production is responding to the increasing demand for domestic fish consumption. The development of the aquaculture sector is marked by a rapid expansion of brackish and marine aquaculture in coastal regions. High economic value products, such as shrimps, lobster; grouper and crab come from marine culture. The export value of these products contributes strongly to the total foreign exchange earning of Viet Nam.

The survey shows that the contribution of aquaculture products to the industry was still limited (Table 12). More than half of the processors (55 percent) did not use aquaculture products as raw materials for their production. They relied very much on products from marine capture fisheries. Nevertheless, aquaculture products still played an important role in inland areas where access to marine species and products is limited. Large processors consumed more aquaculture products than the others; only 15.8 percent of the establishments did not use aquaculture products.

3.3 Wholesalers

Wholesalers in particular and middlepersons in general play an important role in fish marketing, moving fish from the producer, i.e. the fish farmer or fisherfolk to the final stages of the marketing channel. Wholesalers

TABLE 9
Proportion of fish farmer's income from fish farming by region

Income range (%)		Region			Total
		Northern	Central	Southern	
<25%	Count	18		5	23
	%	15.8		4.0	7.7
25-50	Count	23	13	19	55
	%	20.2	22.0	15.2	18.5
50-75	Count	23	22	29	74
	%	20.2	37.3	23.2	24.8
>75%	Count	50	24	72	146
	%	43.9	40.7	57.6	49.0
Total	Count	114	59	125	298
	%	100.0	100.0	100.0	100.0

TABLE 10
Classifications of aquaculturists by types of culture environment by region

Culture environment		Region			Total
		Northern	Central	Southern	
Freshwater	Count	90	29	56	175
	%	75.6	48.3	43.1	56.6
Brackish	Count	29	15	37	81
	%	24.4	25.0	28.5	26.2
Seawater	Count	-	16	37	53
	%	-	26.7	28.5	17.2
Total	Count	119	60	130	309
	%	100.0	100.0	100.0	100.0

TABLE 11
Organizational patterns of aquaculturists by region

Organizational pattern		Region			Total
		Northern	Central	Southern	
Household	Count	113	50	128	291
	%	94.2	83.3	97.7	93.6
Private enterprise	Count	-	1	-	1
	%	-	1.7	-	0.3
State-owned enterprises	Count	-	2	-	2
	%	-	3.3	-	0.6
Capital joining group	Count	7	6	3	16
	%	5.8	10.0	2.3	5.1
Cooperative	Count	-	1	-	1
	%	-	1.7	-	0.3
Total	Count	120	60	131	311
	%	100.0	100.0	100.0	100.0

TABLE 12
Proportion of aquaculture products traded by marketing agents

Percentage	Marketing agents (%)			
	Wholesalers	Processors	Retailers	Institutional consumers
0	30.9	55.2	49.1	15.8
< 25	9.1	14.3	12.1	17.5
26-50	7.3	10.5	19.8	23.3
51-75	9.5	6.7	8.6	25.8
76-100	43.3	13.3	10.3	17.5
Total	100.0	100.0	100.0	100.0

not only directly supply fish to consumers, but also balance demand and supply of fish among different regions.

According to the survey, a majority (87 percent) of wholesalers operate at family household level. The rest may be organized either in the form of enterprises or groups or cooperatives. Significantly, 11 percent of the wholesalers were private enterprises. This shows the increasing role of the private sector in fish marketing.

Wholesalers in fish marketing

A wholesaler may operate at various spatial levels and function differently at each level. There are four main types of wholesalers: first wholesaler, intermediate wholesaler, last-stage wholesaler and multifunctional wholesaler. The first wholesaler is the one that has the additional functions of collection and brokerage. The intermediate wholesaler operates with pure wholesaling function, whose partners are mainly the other types of wholesaler and fish processors. The last-stage wholesaler specializes in supplying fish to retailers and institutional consumers. The multifunctional wholesaler may take various marketing functions at the same time and may act as collector, broker, wholesaler and retailer simultaneously. Normally, the multifunctional wholesaler purchases fish directly from the primary producer and also distributes directly to retailer, institutional consumer and household consumer.

The operations of the four main types of wholesalers were investigated in the survey. For the country as a whole, the proportion of each type of wholesaler was similar. However, in the northern region 40 and 36 percent of wholesalers were multifunctional and last-stage wholesalers, respectively (Table 13). In central Viet Nam and southern region, first and intermediate wholesaler operations were more frequent.

Wholesaling as income generation and diversification

In general, fish wholesalers specialize in the fish wholesaling function. However, around half (50 percent) of them may engage in many other types of occupation in order to support their business or help to stabilize their family income and maybe to make full use of their labour force apart from fish wholesaling. The major types of additional occupations were fishing, aquaculture, fish processing, provision of fisheries input or services, agriculture, and other forms of small trading (Table 14).

Different types of wholesaler responded differently to additional occupations. Table 14 shows that 75 percent of the multifunctional wholesaler engaged in additional occupations, of which agriculture being a major one. In the north a large portion of wholesalers reported that they came from the agriculture sector.

Fish wholesaling became a main occupation for many family households in the

TABLE 13
Classifications of wholesalers (WH) by marketing function by region

Type of wholesaler		Region			Total
		Northern	Central	Southern	
First WH	Count	9	28	35	72
	%	7.4	32.2	23.3	20.0
Last WH	Count	44	31	40	115
	%	36.4	35.6	26.7	32.1
Pure WH	Count	20	20	67	107
	%	16.5	23.0	44.7	29.0
Multifunctional WH	Count	48	8	8	64
	%	39.7	9.2	5.3	17.9
Total	Count	121	87	150	358
	%	100.0	100.0	100.0	100.0

TABLE 14
Additional activities taken by wholesalers (WH)

Activities	First WH		Last WH		Pure WH		Multifunctional WH		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
None	36	54.5	36	56.3	42	57.5	13	25.0	121	49.6
Processing	2	3.6	0	0	5	6.8	9	17.3	16	6.6
Marine catching	4	7.3	2	3.1	4	5.5	2	3.8	12	4.9
Aquaculture	7	12.7	2	3.1	8	11.0	6	11.5	23	9.4
Agriculture	9	16.4	20	31.3	5	5.5	27	51.9	60	24.6
Fishing gear provision	2	3.6	0	0	1	1.4	1	1.9	4	1.6
Fishing services	7	12.7	0	0	8	11.0	2	3.8	17	7.0
Others	1	1.8	5	7.8	6	8.2	2	3.8	14	5.7

country as it contributed substantially to the total household income. It was found that 71 percent of the wholesalers got more than 75 percent of total income from fish wholesaling. However, the significance of income generation from fish wholesaling is less strong in the case of the multifunctional wholesalers where more than half (55 percent) of the operators had obtained less than 75 percent of their total income from fish wholesaling (Table 15).

Wholesaler as the market supply stabilizer

As fisheries production is seasonal, the supply may fluctuate over time. The movement of fisheries products from producers through different intermediaries to consumers is facilitated mostly by the wholesalers. They may keep a portion of the traded quantity and make full use of their storage capacity, purchasing a certain amount of fish products when the market price was low and selling it at a different time at higher market prices. In this way wholesalers could help to balance market supplies and prices that could benefit both the producer and the consumer.

However, only 31 percent of the wholesalers, especially the last and the intermediate wholesalers, keep fish products in storage. This does not suggest a strong capability of market stabilization by fish wholesalers.

Wholesaler in fish product differentiation

In addition to the marketing of fish products, wholesalers may contribute to the enhancement of economic and nutritional value of fisheries products by adding value to products. From the survey, it was reported that 34 percent of the wholesalers did not engage in product differentiation. Other wholesalers may be involved in drying, smoking, skinning, heading, filleting, gutting and making sauce or pastes and even some ready to cook or eat food, as well as adding ice or salt to fish.

3.4 Retailers

A retailer was the market operator operating at the last stage of the marketing channel selling to consumers. The effectiveness of the retailing network ensures that consumers' demand for fisheries products was satisfied. The majority (97 percent) of retailers operate at family household level; a few cases of enterprises or joint-capital groups are performing retailing functions as well. Retailers form a nationwide retailing network and generate income for the market operators, supply different forms of fish products, and contribute to market stabilization.

Retailer and the retailing network

Fish retailing is carried out throughout the country, in cities, urban and rural areas and either inside or outside market places. As shown in Table 17 more than half (62

TABLE 15
Proportion of income derived by the various types of fish wholesalers

Income range (%)		1st WH	Last WH	Pure WH	Multi-functional WH	Total
<25	Count	1	1	1	4	7
	%	1.5	0.9	0.9	6.5	2.0
25-50	Count	3	7	10	7	27
	%	4.5	6.4	9.4	11.3	7.8
50-75	Count	11	17	16	23	67
	%	16.4	15.6	15.1	37.1	19.5
>75	Count	52	84	79	28	243
	%	77.6	77.1	74.5	45.2	70.6
Total	Count	67	109	106	62	344
	%	100.0	100.0	100.0	100.0	100.0

TABLE 16
Types of organizations involved in the different categories of wholesalers (WH)

Types of organization		1st WH	Last WH	Pure WH	Multi-functional WH	Total
Household	Count	59	111	78	63	311
	%	81.9	96.5	72.9	98.4	86.9
Private enterprise	Count	11	2	25	1	39
	%	15.3	1.7	23.4	1.6	10.9
State-owned enterprise	Count	1	-	4	-	5
	%	1.4	-	3.7	-	1.4
Group	Count	1	1	-	-	2
	%	1.4	0.9	-	-	0.6
Cooperative	Count	-	1	-	-	1
	%	-	0.9	-	-	0.3
Total	Count	72	115	107	64	358
	%	100.0	100.0	100.0	100.0	100.0

TABLE 17
Locations of fish retailer operations by region

Location of retailers		Region			Total
		Northern	Central	Southern	
Local market	Count	57	33	47	137
	%	56.4	57.9	40.5	50.0
Regional market	Count	8	14	12	34
	%	7.9	24.6	10.3	12.4
Big city	Count	26	8	26	60
	%	25.7	14.0	22.4	21.9
District town	Count	8	-	29	37
	%	7.9	-	25.0	13.5
Near the highway	Count	1	1	1	3
	%	1.0	1.8	.9	1.1
Village	Count	1	1	1	3
	%	1.0	1.8	.9	1.1
Total	Count	101	57	116	274
	%	100.0	100.0	100.0	100.0

TABLE 18
Market places for fish retailers

Market place		Region			Total
		Northern	Central	Southern	
Supermarket	Count	1	5	-	6
	%	1.0	8.3	-	2.2
Itinerant traders	Count	17	4	9	30
	%	17.0	6.7	7.8	10.9
Market stall	Count	82	51	107	240
	%	82.0	85.0	92.2	87.0
Total	Count	100	60	116	276
	%	100.0	100.0	100.0	100.0

TABLE 19
Additional activities undertaken by fish retailers

Activity		Region			Total
		Northern	Central	Southern	
None	Count	34	32	71	137
	%	33.7	55.2	62.3	50.2
Transportation service	Count	1	-	4	5
	%	1.0	-	3.5	1.8
Rural Industry	Count	3	-	2	5
	%	3.0	-	1.8	1.8
Farming / Husbandry	Count	53	25	23	101
	%	52.5	43.1	20.2	37.0
Fishing services	Count	-	1	1	2
	%	-	1.7	0.9	0.7
Wage labour	Count	8	-	6	14
	%	7.9	-	5.3	5.1
Others	Count	2	-	7	9
	%	2.0	-	6.1	3.3
Total	Count	101	58	114	273
	%	100.0	100.0	100.0	100.0

TABLE 20
Proportions of income from fish retailing by region

Income range (%)		Region			Total
		Northern	Central	Southern	
<25	Count	9	-	1	10
	%	9.0	-	0.9	3.6
25-50	Count	14	10	20	44
	%	14.0	16.7	17.2	15.9
50-75	Count	24	22	14	60
	%	24.0	36.7	12.1	21.7
>75	Count	53	28	81	162
	%	53.0	46.7	69.8	58.7
Total	Count	100	60	116	276
	%	100.0	100.0	100.0	100.0

percent) of retailers operate inside local or regional markets and supply fish mostly to the local community.

Fish retailing could be organized in various types such as supermarket, market stall, or itinerant trader. The survey showed that 89 percent of the retailers had a stable market place to operate in with the most popular being the market stall. There were 11 percent of the retailers operating as itinerant traders (Table 18).

Fish retailing – the income generation and diversification activity

Fish retailers specialize in fish retailing. However, half of them had additional income from non-fish retailing activities mostly agri-culture but also wage earnings and rural industry. The share of such types of retailers is much higher in the north compared to the other regions of the country (Table 19). This indicates that there is also a strong relationship between fish retailing and agriculture.

Even though, fish retailers may engage in many other activities, fish retailing was still the main source of income. It was found that 59 percent of the retailers obtained more than 75 percent of the total income from fish retailing (Table 20).

Retailer delivering various forms of fish products to consumers

In order to meet consumer demand, various forms of fish products are delivered including fresh, frozen, dried, canned and with a sauce, etc. However, it was found that 79 percent of the retailers distributed mainly fresh product. It was also found that 12 percent of the retailer mainly supplied dried product. The other forms such as frozen, canned, or ready-made were reported in a few cases only.

Table 21 shows that only retailers operating in market stalls could supplied all the various forms of fish products, while itinerant traders mostly focused on fresh products. Dried and sauce or paste products are the main products supplied by supermarkets. Therefore, it was necessary to pay attention to the development of retailers operating from market stalls.

Fish retailer – the market supply stabilizer

Similar to the case of wholesalers, it was found that retailers did not normally keep fish products in storage. Only 27 percent of them reported that they stored fish products (Table 22). Among different types of retailers, only supermarkets kept fish products stored regularly, while itinerant trader and market stall owners did not often do so. This can be explained by the type of products traded by supermarkets, which were less perishable. It was necessary to enhance storage capacity of retailers to increase the ability to stabilize fish supply over time and to reduce changes in prices and quality.

3.5 Processors

Fish processors in Viet Nam differ in terms of organization and product specialization. Processors play an important role in absorbing all kinds of materials produced by different operators in the industry, producing high value products and contributing to export development.

According to survey results (Table 23) 32 percent of the processors were running at family household level, the rest of 67.6 percent were those at enterprise level including private and State-owned or equalized enterprises. Joint-capital groups or research centres that specialize in fish processing appeared also.

The majority (78 percent) of processors reported that they undertake the function of fish processing only (Table 24). However, recently, processors tended to diversify their business into aquaculture or marine capture products to ensure supply of raw material for the processing facility. Several processors expand their business into provision of fishing gear or material such as ice, fuel and water for fisherfolk; in return they obtain raw materials supplied by the fisherfolk for processing. Notably, fish processors operating at household level still work in agriculture, which was perceived as the means to sustain their family's food security.

As with wholesalers and retailers, the majority (80 percent) of the processors reported that they received more than 75 percent of the total income from fish processing (Table 25).

TABLE 21
Forms of products traded by different types of retailers

Forms of products		Super-market	Itinerant traders	Market stall	Total
Fresh/ alive	Count	1	28	187	216
	%	16.7	93.3	78.2	78.5
Dried	Count	3	1	29	33
	%	50.0	3.3	12.1	12.0
Frozen, canned, ready made food	Count	-	-	7	7
	%	-	-	2.9	2.5
Paste/sauces	Count	2	-	10	12
	%	33.3	-	4.2	4.4
Others	Count	-	1	6	7
	%	-	3.3	2.5	2.5
Total	Count	6	30	239	275
	%	100.0	100.0	100.0	100.0

TABLE 22
Quantity of fish products stored by retailers (kg) by type of business

Region	Types of business	Mean	N	Std. deviation
Northern	Supermarket	200.0	1	-
	Itinerant traders	15.8	4	5.68
	Market stall	28.7	21	27.66
	Total	33.3	26	42.36
Central	Supermarket	276.3	4	482.97
	Itinerant traders	18.3	3	12.58
	Market stall	29.1	21	29.36
	Total	63.3	28	185.53
Southern	Itinerant traders	5.0	2	0.00
	Market stall	31.1	19	37.20
	Total	28.6	21	36.15
Total	Supermarket	261.0	5	419.65
	Itinerant traders	14.2	9	8.97
	Market stall	29.6	61	30.96
	Total	43.2	75	117.33

TABLE 23
Organizational pattern of fish processors by region

Types of organization		Northern	Central	Southern	Total
Household	Count	28	3	4	35
	%	77.8	14.3	7.8	32.4
Private enterprise	Count	-	6	20	26
	%	-	28.6	39.2	24.1
State-owned enterprises	Count	5	6	18	29
	%	13.9	28.6	35.3	26.9
Joint stock	Count	2	2	8	12
	%	5.6	9.5	15.7	11.1
Equitized	Count	1	4	-	5
	%	2.8	19.0	-	4.6
Others	Count	-	-	1	1
	%	-	-	2.0	0.9
Total	Count	36	21	51	108
	%	100.0	100.0	100.0	100.0

TABLE 27
Number of forms of fish products produced by types of business/processors

Number of product forms		Types of business ownership					Total	
		Household	Private enterprise	State-owned enterprises	Joint stock	Equitized		Others
1	Count	30	15	15	7	1	1	69
	%	100.0	57.7	57	63.6	20.0	100.0	69.7
2	Count	-	8	3	3	2	-	16
	%	-	30.8	11.5	27.3	40.0	-	16.2
3	Count	-	3	2	1	1	-	7
	%	-	11.5	7.7	9.1	20.0	-	7.1
4	Count	-	-	2	-	1	-	3
	%	-	-	7.7	-	20.0	-	3.0
5	Count	-	-	2	-	-	-	2
	%	-	-	7.7	-	-	-	2.0
6	Count	-	-	2	-	-	-	2
	%	-	-	7.7	-	-	-	2.0
Total	Count	30	26	26	11	5	1	99
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Fish processing – the output market for aquaculture and capture sector

Fish processors have to rely to a large extent on the producing sector for processing raw material. Eighty three percent of the total quantity of raw material had to be purchased from other market operators. The average quantity of material per processor purchased was 706.86 tonnes per year. This would be equivalent to the yearly production of 147 farmers or 235 fishing trips of fisherfolk. These illustrate the importance of the processing sector for the development of the aquaculture and capture fisheries sectors.

Processor processing for fish product differentiation

From different kinds of raw materials, fish processors produce various forms of fisheries products such as frozen, canned, ready-made. Frozen products represent the most common form produced by nearly half (47 percent) of the processors, followed by dried products and fish sauce or paste, which was produced by 28.7 percent and 19.6 percent of the processors, respectively (Table 26). Various processors also produce high value-added products such as fillets or surimi. It was also found that 30 percent of the processors produced more than one form of fish products at the same time. This shows a tendency of product diversification of processed products in the processing sector (Table 27).

Processing for export development

As a result of fish processors, awareness of Vietnamese fisheries products are increasing in the world market. However, it was found that only 44 percent of the processors are exporting their products directly; 81 percent of the fish exporters reported that more than three fourth of their total revenues came from export earnings (Table 28). In 2001, the United States, EU, Japan and Asian countries were the main export markets for Vietnamese fish exports. Table 29 shows that the United States, Japan, Taiwan (Province of China), and EU were the

TABLE 28
Proportions of export turnover of the total sales by processors

Proportion of exports (%)		Type of business ownership				Total
		Private enterprise	State-owned enterprises	Joint stock	Equitized	
<25	Count	-	-	-	-	-
	%	-	-	-	-	-
25-50	Count	-	1	-	-	1
	%	-	4.8	-	-	2.1
50-75	Count	2	5	-	1	8
	%	12.5	23.8	-	33.3	17.0
>75	Count	14	15	7	2	38
	%	87.5	71.4	100.0	66.7	80.9
Total	Count	16	21	7	3	47
	%	100.0	100.0	100.0	100.0	100.0

TABLE 29
Major markets for fisheries products export

Export markets	No. surveyed exporters		Exported volume (tonne)		Turn-over (VND million)	
	N	%	N	%	N	%
USA	30	63.8	92707	57.0	3687196	31.9
EU	20	42.6	9590	5.9	484701	4.2
Japan	41	87.2	33196	20.4	5634636	48.8
Taiwan Prov. China	23	48.9	11426	7.0	1157827	10.0
Hong Kong SAR	22	46.8	6759	4.2	229225	2.0
China	11	23.4	4586	2.82	42222	0.37
Singapore	13	27.66	1466	0.90	58642	0.51
Others	15	31.91	2923	1.80	256888	2.22
Total	47		162653	100.00	11551337	100.00

TABLE 30
Type of business by region

Types of Business		Region			Total
		Northern	Central	Southern	
Restaurant	Count	21	25	21	67
	%	52.5	83.3	45.7	57.8
Canteen	Count	6	3	4	13
	%	15.0%	10.0	8.7	11.2
Popular restaurant	Count	13	2	21	36
	%	32.5	6.7	45.7	31.0
Total	Count	40	30	46	116
	%	100.0	100.0	100.0	100.0

TABLE 31
Type of business patterns of institutional consumers by region

Organizational patterns		Region			Total
		Northern	Central	Southern	
Household	Count	27	17	32	76
	%	67.5	56.7	66.7	64.4
Private enterprise	Count	1	7	8	16
	%	2.5	23.3	16.7	13.6
Joined capital group	Count	-	2	4	6
	%	-	6.7	8.3	5.1
State-owned enterprises	Count	7	2	3	12
	%	17.5	6.7	6.3	10.2
Equitized enterprise	Count	4	1	-	5
	%	10.0	3.3	-	4.2
Others	Count	1	1	1	3
	%	2.5	3.3	2.1	2.5
Total	Count	40	30	48	118
	%	100.0	100.0	100.0	100.0

regions of the country where the north tended to consume less fish than the other regions (Table 32).

Various kinds of fisheries products are consumed in institutions, among which fish sauce is a product that cannot be ignored by any eating-place. On average 39 litres of fish sauce are consumed per month per institution in addition to various kinds of marine and freshwater products.

Among the 120 institutions surveyed, shrimp, crab, squid, snakehead, shellfish, common carp, major carp, tilapia, scad and grouper are the ten major species purchased

four main importers in terms of physical quantity traded, however, the export turnover mainly came from Japanese and United States and Taiwanese markets. The Japanese market accounted for only 20 percent of total quantity traded, but for 49 percent of the total value.

It was noted that 57 percent of the fish processors did not export directly. Among this non-export group, 35 processors who were operating at household level reported difficulties in accessing the world market.

3.6 Institutional consumers

Most institutional consumers (IC) surveyed were restaurants, popular restaurants, and canteens, of which the restaurants and popular restaurants are the majority (Table 30). The popular restaurants mostly serve normal daily meals. The canteens are somewhat similar in terms of operation but targeted to specific groups of customers from offices or institutions. The restaurants target higher levels of consumption where people occasionally come for a party or evening out.

Similar to the other market operators, institutional consumers can be run at family household or enterprise level. According to the survey, institutional consumers at household level are the majority, accounting for 64 percent, the rest were operating at either enterprise or joint-capital group level (Table 31).

Patterns of institutional consumption

Various kinds of meat are consumed in eating institutions, including fishery products, pork, chicken, beef and duck. The survey shows that fishery products are dominant among the meats consumed. In nearly half (46 percent) of the cases, fishery products accounted for more than 50 percent of the total meat consumed. The situation was slightly different among

(Table 33). However, when ranked by value of the total purchase by species, there was a slight change in the list of the ten major species that were most consumed financially. Species of mackerel, lobster, and snapper entered the list instead of two freshwater species namely common carp, major carps, and scad the marine species. Among the species consumed, purchased shrimp, crab, and lobster were the most valuable ones. Shrimp consumption accounted for only 17 percent of the total quantity consumed by institutions but accounts for 35 percent of value. Other examples are 11 percent by quantity and 16 percent by value for crab and 1 percent and 4 percent by value for lobster.

Purchasing behaviour of institutional consumers

Institutions purchase fish products on a daily basis either at their home-gate or in the market. According to the survey, 45 percent of the institutions had home delivery service for fish products, mostly from wholesalers or retailers. The average monthly purchase of fish products was VND 22.68 million; the figure for restaurants was VND 34.16 million, which was 4 to 5 times higher than that of the canteen and popular restaurant (Table 34).

The preferences for fish products differ. Various factors affecting the purchasing decision of consumer institutions were identified in the survey. Product price was the major factor for 67 percent of institutions; freshness and quality of the product were also important factors as reported by 44 percent and 42 percent of the institutions, respectively (Table 35). Moreover, 33 percent of the institutions reported that the size of the product had affected their purchase because the size should fit a single meal of a family. Almost all institutions (93 percent) were satisfied with the fish products purchased (Table 36).

Customers and services offered

Government employees, workers and ordinary people were the main groups of customers of institutions, especially

TABLE 32
Proportions of fish among total meat consumption of institutional consumers by region

Proportions of fish (%)		Region			Total
		Northern	Central	Southern	
<25	Count	10	1	1	12
	%	25.0	3.6	2.1	10.3
25-50	Count	20	9	22	51
	%	50.0	32.1	45.8	44.0
50-75	Count	5	7	20	32
	%	12.5	25.0	41.7	27.6
>75	Count	5	11	5	21
	%	12.5	39.3	10.4	18.1
Total	Count	40	28	48	116
	%	100.0	100.0	100.0	100.0

TABLE 33
Quantity (tonnes) of fish products consumed monthly by institutional consumers

Fish product	Mean	N	Std. deviation	Sum	% of Total Sum
Dried fish	2.0	1	-	2.00	0
Dried squid	3.0	1	-	3.00	0
Shrimp	121.7	75	160.58	9131.00	17.1
Squid	83.9	58	82.36	4865.00	9.
Crab	114.0	51	162.28	5815.00	10.9
True mackerel	64.8	12	49.08	778.00	1.5
Grouper/sea bass	97.1	16	179.03	1553.00	2.9
Cat fish	53.0	5	9.74	265.00	0.5
Tuna	114.3	7	97.27	800.00	1.5
Common carp	159.1	14	232.13	2228.00	4.2
Tilapia	242.5	8	219.45	1940.00	3.6
Snakehead	112.8	55	146.14	6203.00	11.6
Gouramy	212.5	10	207.76	2125.00	4.0
Scad	90.8	18	120.07	1636.00	3.1
Jobfish	50.0	1	-	50.00	0.1
Pomfret	90.0	1	-	90.00	0.2
Marine fish	131.7	6	135.41	790.00	1.5
Fish (general)	156.4	27	183.82	4222.00	7.9
FW fish	106.4	7	98.77	745.00	1.4
Snapper	86.	13	108.55	1121.00	2.1
Major carp	61.5	31	39.02	1908.00	3.6
FW shrimp	15.3	8	14.73	122.00	0.2
Leather jacket	115.0	2	120.21	230.00	.4
Clam/snail	66.5	38	89.88	2527.00	4.7
'keo' fish	100.0	1	.	100.00	0.2
Sheat fish	135.8	6	132.83	815.00	1.5
Goby	60.0	3	36.06	180.00	0.3
Other mackerel	89.4	8	63.3830	715.00	1.3
Anabas	65.0	7	44.0643	455.00	0.9
Eel	63.3	12	51.8009	760.00	1.4
Other species and products	53.6	13	46.1240	697.00	1.3
Lobster	67.9	7	103.7568	475.00	0.9
Total	102.2	522	135.3981	53346.00	100.0

TABLE 34
Monthly expenses (VND millions) on fishery products by institutional consumers¹

Fish product	Mean Monthly expenses (VND millions)	N	Std. deviation	Sum	% of Total Sum
Dried fish	120	1	-	120	0
Dried squid	450.4	1	-	450	0
Shrimp	11511.1	75	17407.52	863330	34
Squid	3144.4	58	3057.72	182377	7.3
Crab	7727.5	50	14448.62	386377	15
True mackerel	8700.0	12	15855.66	104400	4.2
Grouper/sea bass	8343.7	16	17847.82	133500	5.4
Catfish	645.0	5	68.74	3225	0.1
Tuna	1540.0	7	1162.24	10780	0.4
Common carp	3385.2	14	5135.34	47394	1.9
Tilapia	6630.6	8	7834.10	53045	2.1
Snakehead	2871.6	55	4291.82	157940	6.4
Gouramy	5102.0	10	4177.68	51020	2.1
Scad	902.7	18	1064.90	16248	0.7
Pomfret	2880.0	1	-	2880	0.1
Marine fish	2613.3	6	2430.20	15680	0.6
Fish (general)	3889.4	27	4620.74	105015	4.2
FW fish	1881.9	7	2561.38	13173	0.5
Snapper	4364.8	13	5888.65	56742	2.3
Major carp	662.4	31	461.39	20536	0.8
FW shrimp	527.6	8	704.82	4221	0.2
Leather jacket	4525.0	2	4914.39	9050	0.4
Clam/snail	1525.1	38	2300.04	57952	2.3
'keo' fish	3500.0	1	.	3500	0.1
Sheat fish	2101.7	6	2191.00	12610	0.5
Goby	1916.7	3	1421.56	5750	0.2
Other mackerel	870.0	8	508.22	6960	0.3
Anabas	2017.9	7	2295.59	14125	0.6
Eel	2601.3	12	2150.06	31215	1.3
Other species and products	1256.3	12	902.02	15075	0.6
Lobster	14035.7	7	21859.30	98250	4.0
Total	4784.1	519	10236.42	2482940	100.0

¹ Large organizations and catering users of fish.

the popular restaurants. Business people, tourists and foreigners were also important groups of customers for restaurants (Table 37).

Typically, customers prefer fresh, high quality and cheap fishery products (Table 38). In addition, food safety issue were raised by 26 percent of the customers. It was reported by 23 percent of customers that they preferred ready-made food and 22 percent said that they paid much attention in choosing marine products.

Table 39 shows that almost all of the institutions served lunch and dinner for customers, only a few cases offered breakfast. On average, the number of daily customers ranged from 100 to 200 people. Canteens had the highest number of daily customers (median of 200 persons); restaurants and popular restaurants served fewer customers per day (means of 155 and 133 persons, respectively). It was also reported that the number of customers going to canteens was rather stable over time compared with other restaurants (Table 40).

The average price paid by a customer for a fishmeal was VND 32 000. There was a great difference in price for a fish meal paid by customers in different types of institutions. The average price for a fish meal in canteens and popular restaurants was VND 5 000, which was quite affordable by various ordinary customers. In contrast, the average cost of a fish meal at restaurant was much higher at VND

TABLE 35
Criteria used by institutional consumers to select fish products

Criteria	Restaurant		Canteen		Popular restaurant		Total	
	Count	%	Count	%	Count	%	Count	%
Size of products	23	34.3	2	15.4	14	37.8	39	33.3
Demanded species	40	59.7	10	76.9	22	59.5	72	61.5
Price	41	61.2	8	61.5	29	78.4	78	66.7
Aware of its source	6	9	0	0	1	2.7	7	6.0
Known products	6	9	2	15.4	13	35.1	21	17.9
High quality	30	44.8	9	69.2	10	27	49	41.9
Freshwater products	0	0	1	7.7	0	0	1	0.9
Marine products	2	3	0	0	0	0	2	1.7
Natural products	1	1.5	0	0	1	2.7	2	1.7
Diseases free	3	4.5	2	15.4	0	0	5	4.3
Chemical free	4	6	1	7.7	1	2.7	6	5.1
Colour of products	1	1.5	0	0	0	0	1	0.9
Freshness	35	52.2	3	23.1	14	37.8	52	44.4
Others	1	1.5	0	0	0	0	1	0.9
Total	67	57.3	13	11.1	37	31.6	117	100

TABLE 36
Satisfaction with fishery products by types of institutional consumers

Degree of satisfaction		Type of institutional consumers			Total
		Restaurant	Canteen	Popular restaurant	
Always	Count	38	6	13	57
	%	56.7	46.2	35.1	48.7
Most of the time	Count	27	5	20	52
	%	40.3	38.5	54.1	44.4
Sometimes	Count	2	1	4	7
	%	3.0	7.7	10.8	6.0
Seldom	Count	-	1	-	1
	%	-	7.7	-	0.9
Total	Count	67	13	37	117
	%	100.0	100.0	100.0	100.0

TABLE 37
Major groups of customers to institutional consumers

Groups of customers	Restaurants		Canteen		Popular restaurant		Total	
	Count	%	Count	%	Count	%	Count	%
Workers	21	32.3	3	23.1	27	73.0	51	44.3
Government employees	47	72.3	9	69.2	23	62.2	79	68.7
Pupils, students	7	10.8	6	46.2	22	59.5	35	30.4
Army, police persons	2	3.1	3	23.1	0	0	5	4.3
Ordinary people	36	55.4	1	7.7	25	67.6	62	53.9
Business people	25	38.5	1	7.7	1	2.7	27	23.5
Domestic tourists	26	40	0	0	1	2.7	27	23.5
Foreign visitors	18	27.7	0	0	0	0	18	15.7
Others	2	3.1	1	7.7	4	10.8	7	6.1
Total	65	56.5	13	11.3	37	32.2	115	100

TABLE 38
Criteria used by different customers to select fish products

Selection criteria	Workers	Government employees	Pupils, students	Army, police persons	Ordinary people	Business people	Domestic tourists	Foreign visitors	Others	Total
Ready made	21	12	12	2	15	3	4	3	1	73
%	40.4	15.4	34.3	40.0	23.4	10.7	15.4	16.7	14.3	23.3
Fresh	30	55	12	3	38	18	16	11	3	186
%	57.7	70.5	34.3	60	59.4	64.3	61.5	61.1	42.9	59.4
Dried	1	1	0	0	3	1	1	0	0	7
%	1.9	1.3	0	0	4.7	3.6	3.8	0	0	2.2
Frozen	0	2	0	0	0	0	1	0	0	3
%	0	2.6	0	0	0	0	3.8	0	0	1.0
Canned	2	0	0	0	0	0	0	0	0	2
%	3.8	0	0	0	0	0	0	0	0	0.6
High quality	2	15	0	0	4	19	11	5	1	57
%	3.8	19.2	0	0	6.3	67.9	42.3	27.8	14.3	18.2
Cheap	27	16	26	1	32	1	1	0	2	106
%	51.9	20.5	74.3	20.0	50.0	3.6	3.8	0	28.6	33.9
Freshwater	2	8	2	0	5	0	1	3	1	22
%	3.8	10.3	5.7	0	7.8	0	3.8	16.7	14.3	7.0
Marine	7	18	1	1	11	12	8	7	3	68
%	13.5	23.1	2.9	20.0	17.2	42.9	30.8	38.9	42.9	21.7
Aquaculture	2	8	0	0	6	1	1	4	3	25
%	3.8	10.3	0	0	9.4	3.6	3.8	22.2	42.9	8.0
Natural	2	3	0	0	5	3	2	3	0	18
%	3.8	3.8	0	0	7.8	10.7	7.7	16.7	0	5.8
Safety	18	26	3	0	17	7	5	5	1	82
%	34.6	33.3	8.6	0	26.6	25.0	19.2	27.8	14.3	26.2
Diversified	8	11	4	0	12	7	7	0	1	50
%	15.4	14.1	11.4	0	18.8	25.0	26.9	0	14.3	16.0
Brand named	0	0	0	0	0	0	0	2	0	2
%	0	0	0	0	0	0	0	11.1	0	0.6
Total	52	78	35	5	64	28	26	18	7	313
%	16.6	24.9	11.2	1.6	20.4	8.9	8.3	5.8	2.2	100

TABLE 39
Types of meals offered by institutional consumers

Types of meals		Type of business			Total
		Restaurant	Canteen	Popular restaurant	
Lunch	Count	3	2	4	9
	%	4.5	15.4	10.8	7.7
Dinner	Count	8	-	1	9
	%	11.9	-	2.7	7.7
Breakfast and lunch	Count	-	-	1	1
	%	-	-	2.7	0.9
Breakfast and dinner	Count	2	-	-	2
	%	3.0	-	-	1.7
Lunch and dinner	Count	28	5	28	61
	%	41.8	38.5	75.7	52.1
All three meals	Count	26	6	3	35
	%	38.8	46.2	8.1	29.9
Total	Count	67	13	37	117
	%	100.0	100.0	100.0	100.0

TABLE 40
Percentage of customers eating fish by types of institutional consumers

Range (%)		Types of institutional consumers			Total
		Restaurant	Canteen	Popular restaurant	
<25	Count	3	1	2	6
	%	4.5	8.3	5.4	5.2
25-50	Count	16	5	19	40
	%	23.9	41.7	51.4	34.5
50-75	Count	21	4	8	33
	%	31.3	33.3	21.6	28.4
>75	Count	27	2	8	37
	%	40.3	16.7	21.6	31.9
Total	Count	67	12	37	116
	%	100.0	100.0	100.0	100.0

TABLE 41
Price (VND x 1 000) of a fish meal charged by types of institutional consumers

Types of institutional consumers	Mean	N	Std. deviation
Restaurant	48	67	64.3
Canteen (median)	5	13	40.2
Popular restaurant (median)	5	37	11.1
Total	-	117	-

TABLE 42
Customer perception of the prices of a fish meal to a non-fish meal

Customer perception		Types of institutional consumers			Total
		Restaurant	Canteen	Popular restaurant	
More expensive	Count	50	3	4	57
	%	82.0	33.3	13.8	57.6
Cheaper	Count	5	5	7	17
	%	8.2	55.6	24.1	17.2
No difference	Count	6	1	18	25
	%	9.8	11.1	62.1	25.3
Total	Count	61	9	29	99
	%	100.0	100.0	100.0	100.0

48 000, which was much higher than that at the other types of eating places (Table 41). It was perceived by 82 percent of customers at restaurants that fish meal are more expensive than non-fish meals. While the majority of customers at canteens and popular restaurant saw the fish meals were either cheaper than or as cheap as non-fish meals (Table 42).

The difference in customer's expense on fish consumption was explained by the difference in major groups of customers at each type of business and the fish species ordered. In restaurants, most of the customers had higher purchasing power, while ordinary people or workers could afford only cheaper fish products. There was a higher demand for high quality fish products in restaurants, while in canteens and popular restaurants cheaper fish products are the most preferred products by customers; hence price and quality differ in importance according to the group of customers.

3.7 Household consumers

Family household characteristics and effects on fish consumption

The total population of Viet Nam is around 80 million (2002) and the total number of family households is estimated at about 17 million. According to a census by GSO in October 2001, the total number of rural households was 13 909 million, and the total rural population was more than 62 315 million, accounting for about 77 percent of the total population. This means that the majority of consumers are presently living in rural areas.

Regarding the ethnological and religious aspects, the survey shows that there was no barrier or constraint to fish consumption (Table 43). The majority of the population belong to the Kinh ethnic majority and the Buddhist religion or undeclared religion as presented in Table 44. All of these aspects provide a good basis for fish consumption by the population.

The fish consumption survey was carried out in various geographical areas in order to gather representative results for

different patterns of fish consumption, therefore, sub samples were drawn from both rural and urban areas, but specific attention was paid to urban areas. Table 45 presents

the distribution of family households surveyed by locations; 57 percent of the household respondents were located in cities or urban areas, the remaining in sub-urban and rural communities.

Types of occupation or income sources of family households varied. In general, household labourers may engage in any occupation ranging from primary production to the tertiary sector. Table 46 shows that the just over half (53 percent) of rural households work in the agriculture sector, some (6 percent) engaged in aquaculture or capture fisheries, however, this distribution did not affect the pattern of fish consumption. Notably, the majority (91 percent) of households in urban areas live on income from wage labour, trading and services, or salary from the government. The fish consumption pattern of this group was mostly based on market supply and fishery products are preferred.

Examining the average income of groups of consumers Table 47 shows that the average income of urban consumers was significantly higher than that of the rural consumers. This indicates that the urban consumer has greater purchasing power than the rural consumer. Thus, targeting of urban consumers and responding to their increasing demand constitutes a priority for a market development strategy.

By using the World Bank poverty line to classify a population based on the average income, it was found that rural consumers are below the poverty line, while those in suburban and urban areas are above the poverty line. This again confirms the higher purchasing power of urban consumers.

Fish consumption patterns

• *Eating habits of consumers*

The household was perceived as the basic unit of consumption, in which most of the family members have meals at home. In Viet Nam, people usually have three meals daily: breakfast, lunch and dinner. Table 48 shows that more than 95 percent of the family members had dinner at home, the figures for lunch and breakfast were slightly lower. However, dinner was the main meal of the day, while, dinner and lunch represent the main consumption pattern in the household.

In addition to having meals at home, the respondents may have meals elsewhere. Table 49 shows that 34 percent of the respondents often go to popular restaurants for eating, less than 20 percent reported visiting restaurants or canteens for meals. The table also shows that the majority of respondents who often went out for meals were those living in cities or urban areas, while below 10 percent of rural respondents did so.

TABLE 43
Religious groups of respondents by regions

Religious group		Region			Total
		Northern	Central	Southern	
Buddhist	Count	71	91	145	307
	%	35.7	44.8	64.7	49.0
Christian	Count	4	20	27	51
	%	2.0	9.9	12.1	8.1
Muslim	Count	-	1	-	1
	%	-	0.5	-	0.2
Undeclared	Count	124	91	52	267
	%	62.3	44.8	23.2	42.7
Total	Count	199	203	224	626
	%	100.0	100.0	100.0	100.0

TABLE 44
Ethnic groups of respondents by region

Ethnic groups		Region			Total
		Northern	Central	Southern	
Kinh	Count	173	207	239	619
	%	86.9	98.6	97.2	94.5
Tay	Count	25	-	1	26
	%	12.6	-	0.4	4.0
Others	Count	1	3	6	10
	%	0.5	1.4	2.4	1.5
Total	Count	199	210	246	655
	%	100.0	100.0	100.0	100.0

TABLE 45
Residential areas of the respondents by region

Area of residence		Region			Total
		Northern	Central	Southern	
Cities	Count	82	127	164	373
	%	41.2	60.2	66.9	56.9
Suburbs	Count	65	38	55	158
	%	32.7	18.0	22.4	24.1
Rural	Count	52	46	26	124
	%	26.1	21.8	10.6	18.9
Total	Count	199	211	245	655
	%	100.0	100.0	100.0	100.0

TABLE 46
Main income sources of family households by residential areas

Income sources		Area of residence			Total
		Cities	Suburbs	Rural	
Capture fishery	Count	5	4	4	13
	%	1.3	2.6	3.2	2.0
Aquaculture	Count	2	17	3	22
	%	0.5	10.9	2.4	3.4
Agriculture	Count	6	11	66	83
	%	1.6	7.1	53.2	12.7
Trading and services	Count	82	25	8	115
	%	22.0	16.0	6.5	17.6
Handicraft production	Count	20	2	2	24
	%	5.4	1.3	1.6	3.7
Waged labour	Count	86	24	11	121
	%	23.1	15.4	8.9	18.5
Retired (pension)	Count	14	15	3	32
	%	3.8	9.6	2.4	4.9
Self-employed (doctor, lawyer)	Count	6	1		7
	%	1.6	0.6		1.1
State employee	Count	133	44	18	195
	%	35.7	28.2	14.5	29.9
Unspecified	Count	19	13	9	41
	%	5.1	8.3	7.3	6.3
Total	Count	373	156	124	653
	%	100.0	100.0	100.0	100.0

When eating out, the most frequent meal eaten was breakfast, then dinner and lunch. Table 50 shows that 26 percent of the respondents in cities reported that they ate out for lunch more than 22 days per month out for lunch; this coincides with the 22 working days per month. For dinner, more than 90 percent of the respondents indicated eating out for dinner on less than 10 days per month. Dinner was generally perceived as an important event when family members interact with one another after working hours. Fish was an important part of lunch. Of the average monthly lunch eaten out (12 meals/month), 65 percent (8 meals/month) were served with fish products. Similarly for dinner meals 76 percent were served with fish products (Table 52). This indicates that fish is more accepted in important events like dinner.

TABLE 47
Per capita income of consumers

Residence		VND x 1 000	(US\$)
Cities	Mean	7 290	473
	N	373	373
	Std. deviation	7 874.8	511.4
	Minimum	546	35
	Maximum	120 000	7 792
Suburbs	Mean	5 938	386
	N	157	157
	Std. deviation	6 070.7	394.2
	Minimum	30.00	1.95
	Maximum	48 000	3 117
Rural	Mean	2926	190
	N	122	122
	Std. deviation	2133.7	138.6
	Minimum	144	9
	Maximum	15 000	974
Total	Mean	6148	399
	N	652	652
	Std. deviation	6 915.0	449.0
	Minimum	30	2
	Maximum	120 000	7792

• *Consumer preferences for fishery products*
The majority (80 percent) of consumers like to eat fish irrespective of location or residential living area of consumers. Less than 20 percent seemed to be neutral to fish, while only a few respondents said that they did not like fish (Table 53).

There are a variety of reasons why people enjoy eating fish, e.g. the benefits may be seen as economic, nutritional or related to health (Table 54). Nutrition was perceived as the dominant benefit of eating fish as reported by half of the respondents. Ease of digestion, cheapness and safety of the product were the other main benefits indicated. The cheapness of the product was a benefit considered to be one of the more important reasons for fish consumption reported by rural consumers, perhaps because of income limitation in rural

areas.

Around 20 percent of the respondents said that within their family there was often a person not enjoying eating fish (Table 55), mostly children. Probably, children dislike fish bones and smell.

Besides fish, consumers may eat various kinds of meat such as, beef, pork and chicken. A comparison of fish consumption with meat was presented in Table 56. In general, many benefits of consuming fish products were clearly perceived. Prices of fish products were seen as equal or lower than those of other meats. Nutritional value, taste and safety, of fish were rated higher than other meats. The availability, freshness, ease of cooking and diversity of the products were also perceived as higher than for meat. However, a weakness of fish was seen in the higher degree of perishability. Therefore, it was necessary to pay attention to the preservation of fish products to better respond to consumer requirements.

Fish buying patterns

• *Purchasing frequency*

This section examines how households acquire fish. Around 70 percent of the respondents reported that fish accounted for more than 50 percent of the total meat consumed. The fish component of a meal tended to be higher for rural people than for urban consumers (Table 58).

Women are often in charge of purchasing food for family consumption. In this study, 84 percent of the families reported that the wife takes care of the kitchen and goes to the market to purchase fish (Table 57). In other families, fish purchasing may be the task of the children or other family members. Therefore, women should be the main target group for fish market studies and fish consumption promotion campaigns.

Fish purchasing patterns are similar in all locations surveyed. Table 58 shows that people went to buy fish every two days. Each time, around 1 kg of fish was purchased. However, the financial resource at disposal for each purchase of fish was different. In the cities, people would spend an average of VND 20 000 per fish purchase, while in the suburban and rural area the figures were VND 15 and 10 000 respectively (Table 59). The size of fish should not exceed 1 kg, which corresponds to the preference of consumers. The size

TABLE 48
Number of family member having meals at home by areas of residence

Area of residence		Meals			Household size (No. of persons)
		Breakfast	Lunch	Dinner	
Cities	Mean	3.2	3.5	4.4	4.6
	N	334	360	372	373
	Std. deviation	1.99	1.95	1.87	2.26
	Minimum	0	0	0	1
	Maximum	12	18	18	33
Suburbs	Mean	3.20	3.94	4.34	4.55
	N	148	155	155	158
	Std. deviation	1.95	1.82	1.70	1.61
	Minimum	0	0	1	1
	Maximum	8	15	15	11
Rural	Mean	4.79	4.83	4.95	5.12
	N	120	122	122	124
	Std. deviation	1.71	1.56	1.61	1.64
	Minimum	0	2	2	2
	Maximum	10	10	10	13
Total	Mean	3.51	3.88	4.47	4.67
	N	602	637	649	655
	Std. deviation	2.03	1.92	1.80	2.02
	Minimum	0	0	0	1
	Maximum	12	18	18	33

TABLE 49
Frequency and place of eating-out by areas of residence

Area of residence		Eating places (times/week)			
		Restaurant	Canteen	Popular restaurant	Other places
Cities	Mean	1.6	4.8	3.3	1.0
	N	87	76	163	1
	Std. deviation	1.53	1.87	2.09	-
	Minimum	1	1	1	1
	Maximum	10	10	12	1
Suburbs	% of Total N	71.9	87.4	72.4	33.3
	Mean	2.12	3.20	2.70	1.00
	N	26	10	40	2
	Std. deviation	2.03	1.99	1.99	0
	Minimum	1	1	1	1
Rural	Maximum	7	5	7	1
	% of Total N	21.5	11.5	17.8	66.7
	Mean	2.38	2.00	1.86	-
	N	8	1	22	-
	Std. deviation	2.67	-	1.28	-
Total	Minimum	1	2	1	-
	Maximum	8	2	5	-
	% of Total N	6.6%	1.1%	9.8%	-
	Mean	1.73	4.56	3.06	1.00
	N	121	87	225	3
Total	Std. deviation	1.74	1.95	2.05	0.00
	Minimum	1	1	1	1
	Maximum	10	10	12	1
	% of Total N	100.0	100.0	100.0	100.0

TABLE 50
Frequency of having lunch outside per month by customers by areas of residence

Frequency range (days/month)		Area of residence			Total
		Cities	Suburbs	Rural	
>22	Count	29	2	-	31
	%	25.9	6.1	-	19.7
11-22	Count	26	5	1	32
	%	23.2	15.2	8.3	20.4
1-10	Count	57	26	11	94
	%	50.9	78.8	91.7	59.9
Total	Count	112	33	12	157
	%	100.0	100.0	100.0	100.0

TABLE 51
Frequency of having dinner outside per month by customers by areas of residence

Frequency range (days/month)		Area of residence			Total
		Cities	Suburbs	Rural	
>22	Count	2	-	-	2
	%	1.3	-	-	1.0
11-22	Count	7	3	1	11
	%	4.4	12.0	11.1	5.7
1-10	Count	149	22	8	179
	%	94.3	88.0	88.9	93.2
Total	Count	158	25	9	192
	%	100.0	100.0	100.0	100.0

TABLE 52
Frequency of fish meals when eating-out

Area of residence		Meals eaten out (no/month)					
		Breakfast	Fish breakfast	Lunch	Fish lunch	Dinner	Fish dinner
Cities	Mean	17.2	8.6	14.2	9.4	4.7	3.7
	N	197	155	112	109	159	151
	Std. deviation	10.18	6.78	9.37	7.05	4.13	4.10
Suburbs	Mean	12.7	7.2	7.0	4.5	5.7	3.2
	N	61	43	33	34	25	24
	Std. deviation	11.29	5.09	7.42	5.21	4.92	2.97
Rural	Mean	3.2	3.4	5.6	2.6	4.4	2.1
	N	45	17	12	11	9	7
	Std. deviation	5.64	1.77	4.18	1.12	4.48	1.25
Total	Mean	14.2	7.9	12.1	7.9	4.8	3.7
	N	303	215	157	154	193	182
	Std. deviation	11.02	6.36	9.32	6.87	4.25	3.89

TABLE 53
Consumers opinions on fish products by areas of residence

Opinions		Area of residence			Total
		Cities	Suburbs	Rural	
Do not like	Count	1	2	-	3
	%	0.3	1.3	-	0.5
Like very much	Count	292	135	91	518
	%	78.7	87.1	73.4	79.7
Not much	Count	78	18	33	129
	%	21.0	11.6	26.6	19.8
Total	Count	371	155	124	650
	%	100.0	100.0	100.0	100.0

TABLE 54
Benefits of fish products perceived by customers by areas of residence

Perceived benefit		Area of residence			Total
		Cities	Suburbs	Rural	
Cheap	Count	31	14	27	72
	%	8.6	9.3	23.1	11.5
Safe	Count	13	3	6	22
	%	3.6	2.0	5.1	3.5
Easy to digest	Count	56	35	12	103
	%	15.5	23.3	10.3	16.4
High nutrition value	Count	206	71	37	314
	%	57.1	47.3	31.6	50.0
Easy to buy	Count	23	8	12	43
	%	6.4	5.3	10.3	6.8
Easy to cook	Count	24	7	19	50
	%	6.6	4.7	16.2	8.0
Others	Count	5	5	-	10
	%	1.4	3.3	-	1.6
Tasty	Count	3	7	4	14
	%	0.8	4.7	3.4	2.2
Total	Count	361	150	117	628
	%	100.0	100.0	100.0	100.0

TABLE 55
Family members that dislike eating fish by areas of residence

Family member	Area of residence							
	Cities		Suburb		Rural		Total	
	Count	%	Count	%	Count	%	Count	%
Wife	48	61.5	9	25.0	15	68.2	72	52.9
Husband	30	38.5	6	16.7	4	18.2	40	29.4
Children	61	78.2	30	83.3	21	95.5	112	82.4
Grandparents	26	33.3	25	69.4	12	54.5	63	46.3
Total	78	57.4	36	26.5	22	16.2	136	100

TABLE 56
Benefits of fish products compared to other common kinds of meat

Benefits	Rating of fish products with other meats		
	Higher	Same	Lower
Price		X	X
Taste	X		
Availability	X		
Nutrition	X		
Safety	X		
Diversity	X		
Ease of cooking	X		
Freshness	X		
Perishability	X		

TABLE 57
Family members that usually go to buy fish by areas of residence

Family members		Area of residence			Total
		Cities	Suburbs	Rural	
Wife	Count	302	126	103	531
	%	82.1	86.3	85.8	83.8
Husband	Count	6	4	2	12
	%	1.6	2.7	1.7	1.9
Children and other family members	Count	60	16	15	91
	%	16.3	11.0	12.5	14.4
Total	Count	368	146	120	634
	%	100.0	100.0	100.0	100.0

TABLE 58
Purchasing pattern for fish products

Area of residence		Frequency of buying fish (days)	Quantity of each purchase (kg)	Expense per each purchase	Average cost per fish meal (1 000 VND)
Cities	Mean	2.2	1.1	20.3	20.1
	N	370	369	369	368
	Std. deviation	1.19	1.029	12.9286	10.33
	Minimum	1	0.3	2.00	3
	Maximum	10	15.0	100.00	70
	Median	2.0	1.0	20.0000	20.00
Suburbs	Mean	2.7	1.2	16.5	15.2
	N	156	155	154	153
	Std. deviation	3.76	1.103	10.0091	8.89
	Minimum	1	.3	5.00	1
	Maximum	30	12.0	100.00	50
	Median	2.00	1.000	15.0000	15.00
Rural	Mean	2.6	1.2	12.9	10.9
	N	123	123	122	123
	Std. deviation	2.90	0.732	8.3413	8.20
	Minimum	1	0.2	1.50	2
	Maximum	30	5.0	60.00	70
	Median	2.00	1.000	10.0000	10.00
Total	Mean	2.4	1.2	18.0	17.2
	N	649	647	645	644
	Std. deviation	2.41	.998	11.8736	10.28
	Minimum	1	0.2	1.50	1
	Maximum	30	15.0	100.00	70
	Median	2.00	1.000	15.0000	15.00

TABLE 59
Frequency of fresh/alive fish products consumption by areas of residence

Response		Area of residence			Total
		Cities	Suburbs	Rural	
Never	Count	2	-	-	2
	%	0.5	-	-	0.3
Always	Count	242	121	92	455
	%	65.4	77.6	74.8	70.1
Most of time	Count	109	22	23	154
	%	29.5	14.1	18.7	23.7
Sometimes	Count	15	9	7	31
	%	4.1	5.8	5.7	4.8
Not often	Count	2	3	1	6
	%	0.5	1.9	0.8	0.9
Seldom	Count	-	1	-	1
	%	-	0.6	-	0.2
Total	Count	370	156	123	649
	%	100.0	100.0	100.0	100.0

TABLE 60
Frequency of dried fish products consumption by areas of residence

Frequency of purchase		Area of residence			Total
		Cities	Suburbs	Rural	
Never	Count	49	22	14	85
	%	13.9	14.7	11.6	13.6
Always	Count	1	2	4	7
	%	0.3	1.3	3.3	1.1
Most of time	Count	6	4	2	12
	%	1.7	2.7	1.7	1.9
Sometimes	Count	125	43	48	216
	%	35.4	28.7	39.7	34.6
Not often	Count	126	50	40	216
	%	35.7	33.3	33.1	34.6
Seldom	Count	46	29	13	88
	%	13.0	19.3	10.7	14.1
Total	Count	353	150	121	624
	%	100.0	100.0	100.0	100.0

TABLE 61
Frequency of canned fish product consumption by areas of residence

Frequency of purchase		Area of residence			Total
		Cities	Suburbs	Rural	
Never	Count	70	46	66	182
	%	21.6	32.4	64.7	32.0
Always	Count	2	1	-	3
	%	0.6	0.7	-	0.5
Most of time	Count	8	-	-	8
	%	2.5	-	-	1.4
Sometimes	Count	60	20	4	84
	%	18.5	14.1	3.9	14.8
Not often	Count	101	37	11	149
	%	31.2	26.1	10.8	26.2
Seldom	Count	83	38	21	142
	%	25.6	26.8	20.6	25.0
Total	Count	324	142	102	568
	%	100.0	100.0	100.0	100.0

TABLE 62
Frequency of frozen fish products consumption by areas of residence

Frequency of purchase		Area of residence			Total
		Cities	Suburbs	Rural	
Never	Count	73	37	34	144
	%	23.1	26.6	32.7	25.8
Always	Count	6	7	7	20
	%	1.9	5.0	6.7	3.6
Most of time	Count	9	2	1	12
	%	2.8	1.4	1.0	2.1
Sometimes	Count	64	24	34	122
	%	20.3	17.3	32.7	21.8
Not often	Count	71	24	12	107
	%	22.5	17.3	11.5	19.1
Seldom	Count	93	45	16	154
	%	29.4	32.4	15.4	27.5
Total	Count	316	139	104	559
	%	100.0	100.0	100.0	100.0

TABLE 63
Frequency of ready-made fish product consumption by areas of residence

Frequency of purchase		Area of residence			Total
		Cities	Suburbs	Rural	
Never	Count	88	58	68	214
	%	28.0	42.0	64.8	38.4
Always	Count	11	3	3	17
	%	3.5	2.2	2.9	3.1
Most of time	Count	10	1	2	13
	%	3.2	0.7	1.9	2.3
Sometimes	Count	64	15	3	82
	%	20.4	10.9	2.9	14.7
Not often	Count	54	24	9	87
	%	17.2	17.4	8.6	15.6
Seldom	Count	87	37	20	144
	%	27.7	26.8	19.0	25.9
Total	Count	314	138	105	557
	%	100.0	100.0	100.0	100.0

of the fish product was important affecting price and purchasing decision. The willingness of consumers to pay varied with location, therefore, city markets should be supplied with higher price products, and the suburban and rural markets with lower price products.

• *Fish species/products purchased*

Various forms of fish products are available in the market. Fresh fish was most frequently consumed (Table 59) followed by dried products (Table 60). Canned, frozen or ready-made products are rarely consumed at household level, especially in the rural area where these forms are hardly consumed (Tables 61–63).

There was a variety of fish species available for consumption from fresh or marine waters.

TABLE 64
Fish species preferred by consumers by areas of residence

Fish species / products	Area of residence						Total	
	Cities		Suburb		Rural		Count	%
	Count	%	Count	%	Count	%		
Dried fish	2	0.5	2	1.3	3	2.5	7	1.1
Dried squid	2	0.5	0	0	1	0.8	3	0.5
Fish sauce	3	0.8	-	-	-	-	3	0.5
Shrimp	260	69.9	77	49.4	57	47.9	394	60.9
Squid	149	40.1	57	36.5	31	26.1	237	36.6
Crab	134	36.0	53	34.0	21	17.6	208	32.1
True mackerel	36	9.7	17	10.9	3	2.5	56	8.7
Grouper/sea bass	2	0.5	1	0.6	1	0.8	4	0.6
Catfish	8	2.2	4	2.6	7	5.9	19	2.9
Tuna	15	4	1	0.6	5	4.2	21	3.2
Common carp	32	8.6	15	9.6	11	9.2	58	9
Tilapia	9	2.4	11	7.1	14	11.8	34	5.3
Snakehead	39	10.5	21	13.5	24	20.2	84	13.0
Scad	11	3	7	4.5	4	3.4	22	3.4
Pomfret	6	1.6	4	2.6	0	0	10	1.5
Marine fish	40	10.8	9	5.8	12	10.1	61	9.4
Freshwater fish	17	4.6	17	10.9	25	21.0	59	9.1
Trevally	1	0.3	1	0.6	0	0	2	0.3
Snapper	6	1.6	6	3.8	1	0.8	13	2
Major carps	35	9.4	29	18.6	174	11.8	78	12.1
Freshwater shrimp	9	2.4	3	1.9	5	4.2	17	2.6
Sail fish	1	0.3	0	0	0	0	1	0.2
Ray	0	0	1	0.6	0	0	1	0.2
Mullet	1	0.3	2	1.3	1	0.8	4	0.6
Lizard	1	0.3	1	0.6	0	0	2	0.3
Croaker	4	1.1	0	0	0	0	4	0.6
Clam, snail	23	6.2	4	2.6	2	1.7	29	4.5
Total	372	57.5	156	24.1	119	18.4	647	100

When asked which fish species people liked most, it was found that shrimp, squid, crab, snakehead, major carps, common carp, mackerel, tilapia, shellfish and scad were the ten most preferred species among consumers (Table 64). In addition, rural consumers also preferred catfish and dried fish.

However, there are several species that people do not like to eat. The reasons for the dislikes are diverse. Table 65 shows that 88 percent of the consumers reported that they did not like fish because of organoleptic and nutritional reasons mentioning taste, smell, look, fat and bones. In addition, economic and health reasons should be considered. 47 percent of the respondents referred to health problems when eating fish such as, allergies, itching or getting poisoned. Twelve percent said that they had economic problems with eating fish since fish due to high prices, or they had a low income and could not afford the consumption of fish products.

The preferred species, were also the most frequently consumed species namely shrimp, snakehead, squid, major carps, mackerel, scad, common carp, crab, tuna and tilapia. There was a difference as shellfish and catfish are not in the list of the most frequently consumed species, instead they are replaced by tuna and scad (Table 66). This situation was similar in the list of the ten most purchased species

TABLE 65
Reasons for fish dislikes by respondents by areas of residence

Reason	Area of residence						Total	
	Cities		Suburb		Rural		Count	%
	Count	%	Count	%	Count	%		
Health problems	123	50.2	41	44.6	30	41.1	194	47.3
Economic problems	36	14.7	9	9.8	6	8.2	51	12.4
Organoleptic and nutritional problems	205	83.7	82	89.1	72	98.6	359	87.6
Total	245	59.8	92	22.4	73	17.8	410	100

TABLE 66
Species consumed by households
(kg/month)

Species/products	Mean	N	Median	Sum	% of total sum
Dried fish	2.0	2	2.0	4.00	0
Dried squid	1.0	1	1.0	1.00	0
Shrimp	3.0	366	2.0	1098.0	9.7
Squid	3.5	223	3.0	782.2	6.9
Crab	2.6	135	2.0	355.0	3.1
True mackerel	4.5	104	3.0	467.0	4.1
Grouper/sea bass	4.6	10	4.5	46.0	0.4
Cat fish	3.6	41	3.0	149.5	1.3
Tuna	5.9	49	5.0	291.0	2.6
Common carp	3.7	96	3.0	359.0	3.2
Tilapia	5.0	55	4.0	276.5	2.4
Snakehead	4.9	209	4.0	1018.5	9.0
Scad	5.2	72	4.0	375.7	3.3
Jobfish	3.5	6	3.0	21.0	0.2
Pomfret	2.8	23	3.0	65.5	0.6
Marine fish	9.4	100	5.0	936.5	8.2
Fish (general)	9.4	257	9.0	2428.0	21.4
FW fish	6.4	70	5.0	447.5	3.9
Trevally	9.8	6	4.0	59.00	0.5
Snapper	4.0	21	3.0	85.0	0.7
Major carp	4.3	147	4.0	630.5	5.5
FW shrimp	2.3	16	1.0	36.0	0.3
Sail fish	3.5	2	3.5	7.00	0.1
Ray	3.0	1	3.0	3.00	0.0
Mullet	5.3	16	5.0	84.0	0.7
Leather jacket	3.3	11	1.0	36.0	0.3
Hairtail	4.8	6	5.0	29.0	0.3
Lizard	4.5	6	1.0	27.0	0.2
Flying fish	5.0	1	5.0	5.0	0.0
Croaker	2.3	6	2.0	14.0	0.1
'keo' fish	4.0	9	3.0	36.0	0.3
Anchovy	2.6	5	2.0	13.0	0.1
Sheat fish	2.0	1	2.0	2.0	0.0
Goby	3.3	7	3.0	23.0	0.2
Other mackerel	5.1	67	4.0	339.0	3.0
Anabas	4.2	53	4.0	222.5	2.0
Other species and products	5.8	96	4.0	552.5	4.9
Total	4.9	2299	3.0	11360.4	100.0

TABLE 67
Household expenditure of fish products by species (VND x 1000)

Species	Mean	N	Median	Sum	% of total sum
Dried fish	8.0	2	8	16.0	0.0
Dried squid	120.0	1	120	120.0	0.1
Shrimp	114.8	365	70	41907.0	18.8
Squid	169.5	223	60	37807.0	17.0
Crab	97.7	134	53.5	13097.0	5.9
True mackerel	136.1	103	100	14014.0	6.3
Grouper/sea bass	45.6	10	36	456.0	0.2
Catfish	46.9	40	41	1874.0	0.8
Tuna	64.2	49	48	3147.0	1.4
Common carp	56.7	95	50	5382.0	2.4
Tilapia	51.0	55	40	2806.0	1.3
Snakehead	91.2	209	75	19061.0	8.6
Scad	49.4	71	30	3508.0	1.6
Jobfish	43.0	6	33	258.0	0.1
Pomfret	64.9	23	60	1492.0	0.7
Marine fish	98.2	100	44	9824.0	4.4
Fish (general)	125.5	255	100	31992.0	14.4
FW fish	78.2	68	58	5320.0	2.4
Trevally	91.7	6	54	550.0	0.2
Snapper	75.4	21	50	1584.0	0.7
Major carp	52.9	144	45	7619.0	3.4
FW shrimp	48.1	16	30	769.0	0.3
Sail fish	195.0	2	195	390.0	0.2
Ray	12.0	1	12	12.0	0.0
Mullet	60.8	16	60	972.0	0.4
Leather jacket	82.0	11	50	902.0	0.4
Hairtail	45.3	6	39	272.0	0.1
Lizard	44.3	6	20	266.0	0.1
Flying fish	20.0	1	20	20.0	0.0
Croaker	35.2	6	37.5	211.0	0.1
'keo' fish	94.2	9	70	848.0	0.4
Anchovy	44.0	5	40	220.0	0.1
Sheat fish	60.0	1	60	60.0	0.0
Goby	80.9	7	60	566.0	0.3
Other mackerel	46.5	67	40	3115.0	1.4
Anabas	88.9	53	60	4712.0	2.1
Other species and products	75.7	94	30	7120.0	3.2
Total	97.4	2283	60	222329.0	100.0

where shellfish and catfish are not found, and anabas, scad and other types of mackerel replaced shellfish, catfish and tilapia (Table 67).

Fish sauce was the most common fish product consumed in almost every family. Table 68 shows that the average quantity of fish sauces consumed monthly per household was 2.2 litres, corresponding to a monthly expense of VND 18 470. The consumption of fish sauce was slightly different according to location; consumption in rural areas tended to be higher (2.5 litres) than in cities (2.0 litres). Even though, more fish sauce was consumed in the rural areas, the monthly expenses on fish sauce were less than VND 14 727, while the figure for cities was VND 19 470. This indicates that urban consumers purchased fish sauce at a higher price than those in rural areas.

The total quantity of fisheries products consumed per household/month was also investigated (Table 69). The median monthly quantity consumed per household was 3 kg, with corresponding expenses of VND 60 000 (Table 69). According to NIN (2002), in 2000, the per capita fish consumption per year was 18.72 kg including all

kinds of aquatic products. Variation of fish consumption by region was considerable, but the amount of fish consumed per household was similar to that of 10 years before. From the study, it was also found that there was a slight difference among locations. Urban consumers consumed less fisheries products than those in rural areas. The median of the quantity consumed in cities was 3 kg, while the figure for the rural was 5 kg. However, the median of the expenses in cities was higher than that in the rural area.

Consumers' access to fish

Fish products are available in most market places throughout the study areas. The median of distance for consumers in cities to travel to purchase fish products was one km compared with a mean of two km for rural consumers .

Fish consumers can have access to various fish suppliers at the same time. Findings show that 95.6 percent of the consumers purchased fish from fish retailers with large proportion of the purchase often accounting for more than 75 percent of the total purchase. Apart from getting fish from retailers, consumers purchase fish from fish farmers or fisherfolk, fish wholesalers, processors, or even supermarkets. However, the proportion of these purchases was minor. Table 75 shows that those who purchased from primary producers mostly lived in rural areas, while those who purchased from wholesalers, processors and supermarkets, lived in cities or sub-urban areas.

Consumers' preference in selecting suppliers was based on reasonable prices, trusted and assured quality of products and a nearby location (Table 77). The suppliers should also offer various kinds of products so as to allow choices for consumers (7.8 percent of the respondents).

Promotion of fish consumption

• Image of fish and promotion of fish consumption

According to Table 77 price, quality of the products and their freshness are the major factors influencing the buyer's decisions. Therefore, it was necessary to provide

TABLE 68
Monthly consumption of fish sauce per household by areas of residence

Area of residence	Quantity (litres)	Expense (VND x 1 000)
Cities	Mean	2.0
	N	354
	Median	2.0
	Sum	707.85
	% of Total	51.6
Suburbans	Mean	2.4
	N	148
	Median	2.0000
	Sum	356.55
	% of Total	26.0
Rural	Mean	2.5
	N	121
	Median	2.0000
	Sum	308.50
	% of Total	22.5
Total	Mean	2.2
	N	623
	Median	2.0000
	Sum	1372.90
	% of Total	100.0

TABLE 69
Monthly consumption of fish products per household

Area of residence	Quantity (kg)	Purchased quantity (kg)	Expense (1000 VND)
Cities	Mean	4.4	92.3
	N	1377	1376
	Std. deviation	4.70	100.62
	Median	3.0	60.0000
Suburbs	Mean	5.0	82.8
	N	577	570
	Std. deviation	6.56	104.62
	Median	3.0	50.0
Rural	Mean	6.9	83.5
	N	345	337
	Std. deviation	10.0	117.6
	Median	5.0	50.0000
Total	Mean	4.9	88.6
	N	2299	2283
	Std. deviation	6.3	104.34
	Median	3.0	60.0

TABLE 70
Proportions of fish products among other total meats consumed by areas of residence

Range (%)	Area of residence			Total
	Cities	Suburbs	Rural	
<25	Count	8	5	19
	%	2.2	3.2	2.9
25-50	Count	130	33	180
	%	35.1	21.2	27.7
50-75	Count	193	89	345
	%	52.2	57.1	53.1
>75	Count	39	29	106
	%	10.5	18.6	16.3
Total	Count	370	156	650
	%	100.0	100.0	100.0

TABLE 71
Brand names used in fish purchasing decision by respondents by areas of residence

Decision response		Area of residence			Total
		Cities	Suburbs	Rural	
No	Count	144	92	89	325
	%	64.6	79.3	92.7	74.7
Yes	Count	79	24	7	110
	%	35.4	20.7	7.3	25.3
Total	Count	223	116	96	435
	%	100.0	100.0	100.0	100.0

TABLE 72
Motivation and product preference by area of residence

Method		Areas of residence			Total
		Cities	Suburbs	Rural	
Advertisement	Count	7	-	2	9
	%	4.9	-	7.4	4.2
Availability in market	Count	19	2	4	25
	%	13.4	4.7	14.8	11.8
Consumption experiences	Count	87	34	18	139
	%	61.3	79.1	66.7	65.6
Seller's suggestion	Count	8	4	2	14
	%	5.6	9.3	7.4	6.6
Friends' introduction	Count	18	1	-	19
	%	12.7	2.3	-	9.0
Others	Count	3	2	1	6
	%	2.1	4.7	3.7	2.8
Total	Count	142	43	27	212
	%	100.0	100.0	100.0	100.0

TABLE 73
Preferences on fish trade promotion by final consumers by areas of residence

Method		Areas of residence			Total
		Cities	Suburbs	Rural	
Discount	Count	140	62	50	252
	%	38.7	42.8	42.4	40.3
Cooking guidance	Count	48	11	12	71
	%	13.3	7.6	10.2	11.4
Gifts	Count	47	15	25	87
	%	13.0	10.3	21.2	13.9
Packing	Count	16	5	1	22
	%	4.4	3.4	0.8	3.5
Preliminary processed	Count	19	2	1	22
	%	5.2	1.4	0.8	3.5
Seller's good behaviour	Count	90	47	29	166
	%	24.9	32.4	24.6	26.6
Others	Count	2	3	-	5
	%	0.6	2.1	-	0.8
Total	Count	362	145	118	625
	%	100.0	100.0	100.0	100.0

information of the fish product traded in the market in order to affirm purchasing decision of consumers; particularly in view of recent concerns related to the safety of products and natural, free of chemicals and disease.

Regarding brand name of fisheries products, the majority (74.7 percent) of consumers do not focus on brand names (Table 71). This was due to either unavailability of fish products with brand-names or lack of impact. However, a higher proportion of urban consumers reported that their purchasing decision was based on the products' brand names only related to fish sauce and frozen or canned products. Various brand-names of fish sauce were mentioned by consumers namely Cat Hai, Nha Trang, Phu Quoc, Hai Dang, Nam O, Muoi Thu, Cua Hoi, or Phuong Trang fish sauce, while only frozen and canned products of Ha Long Cannery were mentioned. Some other respondents referred only to products of factories in general without specific brand names. The study also examined how a brand name of a fish product could favour a firm image of products with consumers. Consumption experience was the most common way to establish an image as reported by 65.6 percent of the respondents (Table 72). Advertisements, availability of the product, introduction by other consumers or the salespersons to the product were only means leading to the first consumption. This implies that in order to have a good image of the product, quality and price are those that could strengthen the image.

Hence the image of fisheries products was not strong in consumers' impression, i.e. fisheries products did not have a clear-cut distinction against other kind of meat products in the domestic market. Fisheries operators should build up their image in the market aiming at sustainable market development.

In order to attract more consumers to fish consumption, the study also searched for the most preferred promotion activity as seen by consumers. Discounted prices were the most indicated, and the behaviour of the salespersons was also considered important for attracting consumers (26.6 percent of the respondents; Table 73). Other factors like gift, cooking guidance, packaging or preliminary processing, quality assurance, and home delivery service are widely appreciated.

• *Problems or constraints to fish consumption*

In examining fish consumption at consumer level, various problems were identified. Many consumers complained about price of fish products being high or changing. Around one third mentioned low income as a constraint to fish consumption (Table 74). However, fish scarcity and limited information on fish products were problems recorded by many consumers, especially those living in urban areas. It was high time to improve the retailing network and meet the increasing demand for fish. In addition, around half of the respondents complained about the safety and quality of fish products, several people referred to ethical issues related to the salespersons, e.g., cheating when weighing fish.

TABLE 74
Problems and constraints perceived for fish consumption by respondents by areas of residence

Problems and constraints	Areas of residence						Total	
	Cities		Suburb		Rural		Count	%
	Count	%	Count	%	Count	%		
Scarcity	104	29.3	28	20.6	19	17.4	151	25.2
High price	180	50.7	60	44.1	53	48.6	293	48.8
Price changing	206	58.0	59	43.4	40	36.7	305	50.8
Low income	122	34.4	55	40.4	46	42.2	223	37.2
Low safety and quality	169	47.6	53	39	28	25.7	250	41.7
No product information	19	5.4	7	5.1	0	0	26	4.3
Selling ethical issues	0	0	2	1.5	0	0	2	0.3
Total	355	59.2	136	22.7	109	18.2	600	100

3.8 Public sector responsibilities

The public sector has important roles to play in fish marketing development. Various institutions have been involved in the development of the fisheries sector as well as the fisheries market development. The following paragraphs describe major functions and responsibilities of institutions related to fish marketing development.

Market planning and regulations

Market planning was mostly executed by MOFI, which determines goals, objectives and action programmes for fisheries production, accessibility and consumption over periods of time.

Market management

The Ministry of Trade (MOT) handles market management. Since the inception of trade liberalization in the domestic market, the market management was mostly implemented by the Department of Trade (DOT) at provincial level under the provincial or city's

TABLE 75
Accessibility of consumers to fish traders by areas of residence

Area of residence		Farmers	Fisher folk	No of traders accessed ¹				Total number of suppliers
				WH	PR	Retailers	SP	
Cities	Mean	3.3	2.8	2.42	1.6	4.8	3.1	5.6
	N	12	8	57	12	362	72	364
	Median	3.0	2.0	2.00	2.0	3.5	1.0	4.00
	% of total	25.5	28.6	57.0	85.7	57.7	88.9	59.2
Suburbs	Mean	3.0	16.0	3.5	2.5	6.9	1.2	7.0
	N	5	7	16	2	144	9	141
	Median	1.00	3.00	1.50	2.50	4.00	1.00	4.00
	% of total	10.6	25.0	16.0	14.3	23.0	11.1	100.0
Rural	Mean	1.6	1.4	1.6		6.2		6.6
	N	30	13	27		121		110
	Median	1.0	1.0	2.0		3.0		4.0
	% of total	63.8	46.4	27.0		19.3		17.9
Total	Mean	2.2	5.4	2.4	1.7	5.5	2.9	6.1
	N	47	28	100	14	627	81	615
	Median	1.0	1.5	2.0	2.0	3.0	1.0	4.0
	% of total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ WH: Wholesalers, PR: Processors, SP: Supermarket.

TABLE 76
Proportions of fish purchased from retailers by areas of residence

Range (%)		Area of residence			Total
		Cities	Suburbs	Rural	
<25	Count	9	2	1	12
	%	2.5	1.4	0.8	1.9
25-50	Count	19	11	3	33
	%	5.2	7.6	2.5	5.2
50-75	Count	33	6	27	66
	%	9.1	4.2	22.1	10.5
>75	Count	303	125	91	519
	%	83.2	86.8	74.6	82.4
Total	Count	364	144	122	630
	%	100.0	100.0	100.0	100.0

TABLE 77
Criteria to select fish suppliers by consumers by areas of residence

Criteria		Area of residence			Total
		Cities	Suburbs	Rural	
Reasonable price	Count	110	28	36	174
	%	29.8	19.0	29.5	27.3
Quality assurance	Count	101	44	22	167
	%	27.4	29.9	18.0	26.2
Stable supply sources	Count	12	9	9	30
	%	3.3	6.1	7.4	4.7
Closed relationship	Count	14	4	14	32
	%	3.8	2.7	11.5	5.0
Relatives	Count	1	3	2	6
	%	0.3	2.0	1.6	0.9
Near by	Count	83	39	25	147
	%	22.5	26.5	20.5	23.0
Various products	Count	26	16	8	50
	%	7.0	10.9	6.6	7.8
In time delivery	Count	1	-	-	1
	%	0.3	-	-	0.2
Time saving	Count	8	3	2	13
	%	2.2	2.0	1.6	2.0
Trust/honest	Count	12	-	3	15
	%	3.3	-	2.5	2.4
Home delivery	Count	1	1	1	3
	%	0.3%	0.7%	0.8%	0.5%
Total	Count	369	147	122	638
	%	100.0	100.0	100.0	100.0

TABLE 78
Method of payments by market operators (%)

Payment method	Aquaculturists	Fisherfolk	Wholesalers	Processors
In advance	6.1	8.9	10.6	4.6
In kind	0.6	3.1	0.6	-
In cash	84.6	89.3	85.8	68.5
Deferred	20.3	22.3	28.8	18.5
Debt settling	1.6	1.3	1.1	-
LC	-	-	-	43.5
Cheque	-	-	-	12.0
Others	0.3	0.4	-	3.7

carried out by national research organizations. This project was one type of market research executed by FAO. VASEP is assisting national processors and exporters to better access international markets, promote export turnover and obtain hard currency for the industrialization and modernization process of the country.

People's Committees. The DOT regulates and supervises operations of wholesalers, retailers networks and market networks in their designated administration area. The DOT is responsible for market planning, market infrastructure improvement, and market maintenance.

Market statistics

Under the Prime Minister's Office, the country has a statistical system headed by the General Statistical Office (GSO), which has branches at provincial and district administrative levels. The GSO is responsible for keeping records of fisheries production, trade, and export. In addition, the GSO also traces demographic data of the sector, income level of various groups of population. However, data on prices, market transactions, accessibility and consumption of fisheries products are not available. Presently, the Fisheries Information Centre (FICEN) under the MOFI is keeping records of prices of some major groups of fisheries species at several locations in the country. The data are useful, however, since locations recorded are limited, it was difficult to make detailed cross analysis and comparisons.

Market certification

The National Quality Control Centre (NAQUAFICEN) is responsible for quality assurance at processing enterprises. It helps to affirm quality of fisheries products once they are produced largely for export. However, for products traded in the domestic market, the Ministry of Health is responsible for assurance of the product's quality.

Market research and consultation

Various universities, institutes, international organizations, non-governmental organizations, have been involved in market research and development. A variety of studies on fish marketing were

The above paragraphs discussed the major functions of public sector on fish marketing. However, the functions are operated in a scattered manner. It is timely to develop a coordination mechanism so as to best respond to demand for market development of the industry.

4. FISH MARKETING SYSTEM IN VIET NAM

4.1 Main fish marketing channels

Product flow

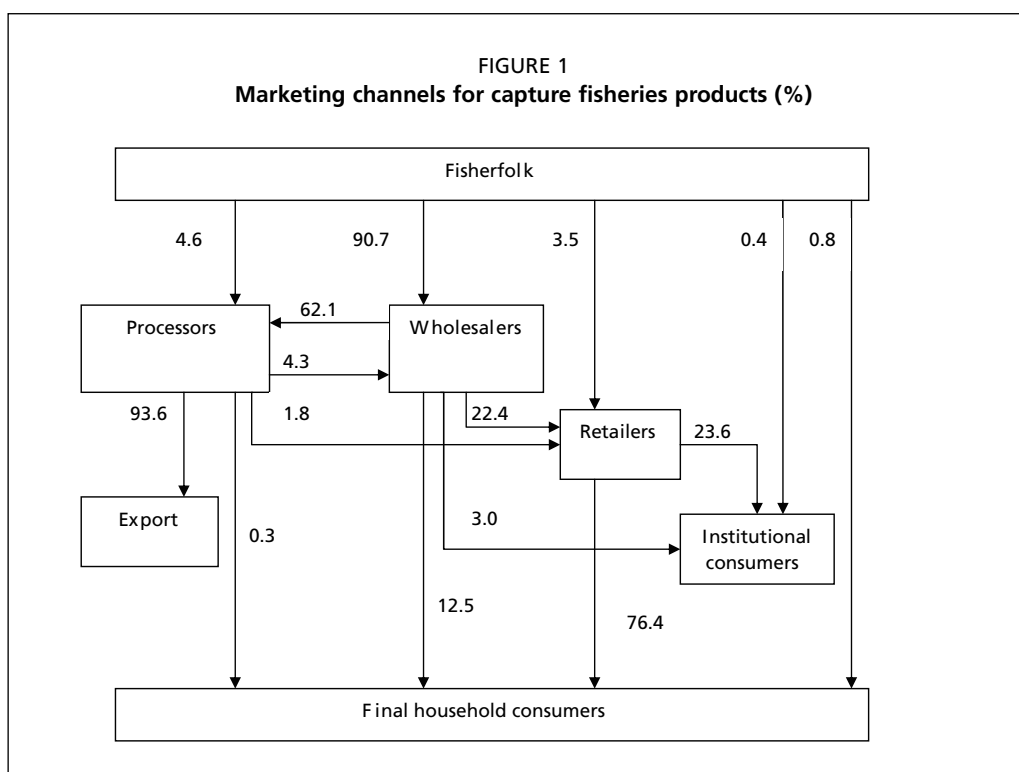
Fish product flow can follow various channels from the fish producer including fisherfolk and aquaculturalist to the final consumer and can involve varying number of stages. Therefore, the fish market was divided into four main stages: the producer stage, the wholesaler stage including processing, the retailer stage, and the consumer stage including the export and institutional consumer markets.

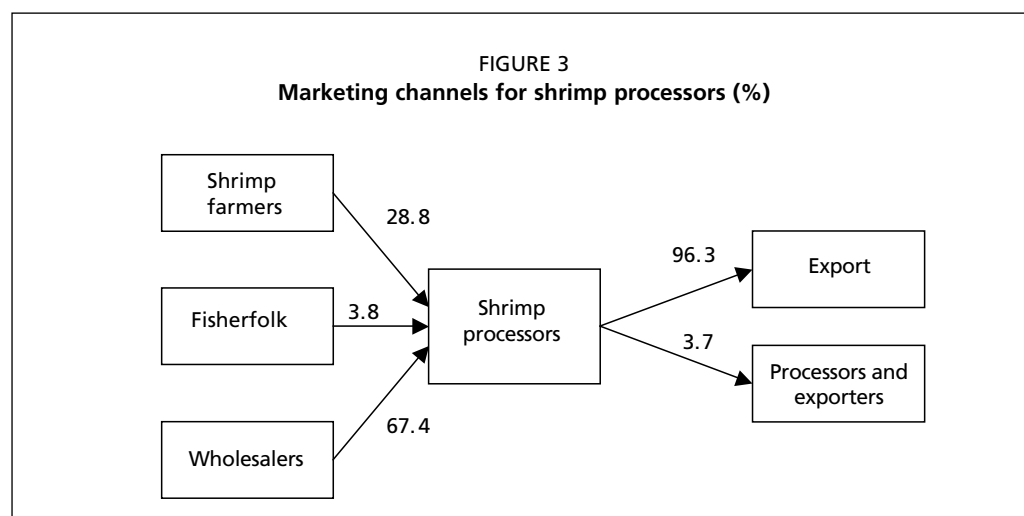
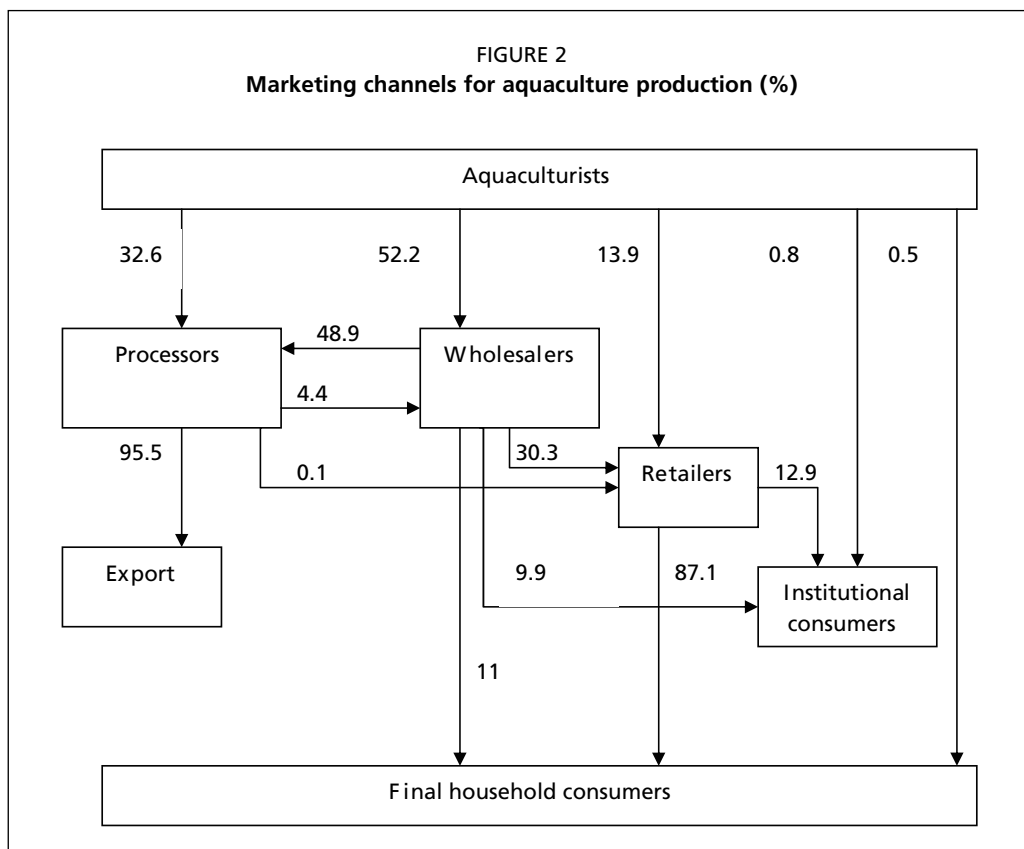
Since the producer stage is distinguished by two main subsectors, i.e. fish capture and the aquaculture, the flows of fish products can be divided into two types, one for the fisherfolks and the other for the aquaculturalists as presented in Figures 1 and 2.

In reality, fish marketing channels are complicated since market operators may perform more than one marketing function therefore among each type of market operator there may be an internal flow of fish products as in the case of wholesalers. As discussed in the previous chapter, wholesalers were divided into four main types, among which fish products were traded. In order to simplify the fish marketing channels, main types are computed as proportions to total sales to each market operators excluding the portion traded internally at the computed market.

- *Marketing channels for products from capture fisheries*

The flow of fish products from fisherfolks to wholesalers then processors and export was the main fish marketing channel (Figure 1). Over 90 percent of the captured products were sold to fish wholesaler, of which 62.1 percent were sold to fish processors. The processors in turn exported 94 percent of these products. In the context of the fish capture sector, such flows suggest that the export market played an important role in





absorbing the fish products, while the domestic market played an insignificant in the development of capture fisheries.

For the domestic market, the wholesaler was the focal point through which fish was channelled. Very few fish products reached the final consumers or retailers directly. The retailer was the main market operator supplying fish to consumers. Therefore, the flow from fisherfolk to wholesaler, retailer and consumers was the main channel for the domestic market.

- *Marketing channels for aquaculture products*

The channels of product flows from aquaculture to export and domestic consumer were similar to that from capture fisheries. The market channel to the export market

TABLE 79
Types of information often accessed by market operators (%)

Types of information	Aquaculturists	Fisherfolk	Wholesalers	Processors	Retail trader
Price	76.1	75.8	81.9	76.4	64.4
Quality requirement	53.0	49.5	50.0	53.8	38.2
Quantity and species	53.0	41.5	50.6	49.1	31.5
Credit	17.1	19.4	13.6	18.6	7.4
Technical know-how	29.7	10.7	13.8	-	12.8
Time and location of sale	37.4	34.6	28.2	-	18.7
Demand forecast	20.6	21.9	18.6	32.1	12.9
Policy and regulation	13.5	15.0	11.4	38.7	12.5

however, was shortened by their access to the processors. The fish farmer sold 33 and 52 percent of their products directly to the processors and wholesalers, respectively. This linkage between the processors and the fish farmer in mobilizing raw materials for processing can be explained as one kind of contract farming practices that ensures the sale of the fish farmers products, and the continuous supply of the raw materials for the processors .

Similarly, the marketing channel for domestic market was also shortened by the access of retailers to fish farmers, who operate almost everywhere in the country. The channel through retailers could be one of the shortest possible channels to ensure fresh fish products reaching consumers.

Marketing channels for farmed shrimp to and from wholesalers and processors were specifically examined. Shrimp was a typical product following the major marketing channels identified for the export market (Figure 3). Fish farmer were the major suppliers to the shrimp wholesalers, accounting for 76 percent of wholesalers purchase.

In turn wholesales sold 83 percent of their shrimps to processors (Figure 3). The wholesalers were the main suppliers of raw materials to the processors The exports of shrimp accounted for over 96 percent of the processors total sales..

Money flows

The above sections examined the product channels from fish producers to fish consumers in terms of sales. The following paragraphs discusses the method of payment to the fish producers.

The money flows in fish marketing were mostly conducted in cash as reported by majority of fish market operators (Table 78). Besides, market operators indicated that around 20 percent of the total sales were as deferred payments to customers. The deferred payments (later payment without interest) were normally affected around five days after sales. Letter of Credit (LC) for payment was issued by 44percent of processors. About 90 percent of the payments were done through the LC transaction.

Between 5 and 10 percent of the market operators reported that they were paid in advance for their products, the amount of advance payments being around 10 percent of the total sales. The advance payment indicates a good money flow backwards in fish marketing, and a strong cooperation among fish market operators.

Information

There was also information flow that provided feedback to the early stages of marketing. Accessibility to several types of information by market operators is presented in Table 80. Price was the most frequently accessed information by market operators.. However, information on quality, quantity, species, and even time or location of sales was often not available to the market operators. The situation was worse towards the end of marketing channels where few retailers had access to such

TABLE 80
Types of information expected by market operators (%)

Types of information	Aquaculturists	Fisherfolk	Wholesalers	Processors	Retail trader
Price	20.9	19.2	14.3	12.3	24.4
Quality requirement	39.6	30.0	39.7	38.7	46.0
Quantity and species	40.1	37.7	36.9	30.2	49.5
Credit	64.8	69.9	53.2	56.9	42.7
Technical know-how	61.5	76.6	52.2	-	45.8
Time and location of sale	50.4	45.0	45.7	-	38.8
Demand forecast	66.1	67.7	65.7	56.6	49.8
Policy and regulation	72.9	74.4	65.4	47.2	47.5

TABLE 81
Sources of information accessed by market operators (%)

Sources	Aquaculturists	Fisherfolk	Wholesalers	Processors	Retail trader
Aquaculturists	65.7	-	-	-	1.2
Fisherfolk	-	62.3	-	-	0.8
Processors	6.5	6.4	22.0	32.4	6.2
Wholesalers	69.6	70.9	77.2	52.0	89.2
Retailers	33.0	21.8	57.2	25.5	81.1
HH consumers	-	-	-	-	5.0
TV	17.0	27.7	22.3	21.6	18.5
Radio	13.7	47.3	15.0	8.8	13.1
Books/leaflets	13.4	2.7	8.1	22.5	7.3
DOFI/DARD	18.6	25.0	12.1	19.6	9.7
Extensionists	21.6	5.9	6.1	-	5.8
University/Institutes	1.3	0.9	-	-	-
FICEN	-	-	-	36.3	-
VASEP	-	--	-	38.2	-
VINAFISH	1.3	7.3	1.4	2.9	0.4
Infofish/Globefish	-	-	-	2.9	-
Others	2.9	1.4	0.9	-	0.4

information. This indicates that information accessible to market operators was restricted and understanding of demand and supply interaction limited. The problem was further illustrated by the very small proportions of the operators who have access to fish demand forecasts and perspectives.

Around two thirds of the market operators wished to have access to sufficient information on the quantity, species, time, locations, and future demand for fish consumption as presented in Table 80. Under this perspective, the creation of market centres for fish products would be helpful where fish product and information flow run parallel.

Apart from market information, awareness of credit service and related policies and regulations was also limited since less than 20 percent of the operators have access to this type of information. Furthermore, it was necessary to disseminate the relevant information on policy, regulation, and assistance from the Government or institutions related to fish market development as expected by large proportions of the market operators as presented in Table 80.

Except processors, the fish wholesalers were key informants for 70 to 90 percent of all the other market operators (Table 81) This indicates that the wholesalers, who operate in the middle stages of marketing channels, would provide the best connection for producers with the market.

Beside the vertical marketing channels as discussed, a horizontal information channel should be taken into consideration because many market operators reported that the market information could be accessed from their fellow operators as presented in Table 81, especially retailers, wholesalers and producers.

4.2 Prices

The longer the fish product channels the higher the price margins. This means that prices go up with increasing number of transactions in the fish product channel. Marketing margins channels depend on marketing costs incurred. However, the results of the survey provide only very limited insights with regard to prices at different levels. This section is to briefly examine changes in fish prices within Hanoi city and from provinces to Hanoi city. Carp, major carps and mackerel are selected as examples for the analysis.

For carp for Hanoi City, it is seen that from fish farmers to institutional consumers, fish price went up gradually with the mark-ups of 13.2 percent accrued to the wholesaler, 18.4 percent to the retailers, and 18.6 percent to the institutional consumers. In other words, in this case the price paid by customers was VND 22 400, of which 8.3 percent of the price was paid to the wholesalers, 13.1 percent to the retailers, and 15.7 percent to the institutional consumers. For the major carps, the price went up gradually until the product reached the final consumers. The changes in fish price at the wholesaling and retailing stages were 24.3 percent and 29.3 percent respectively. This represents a 62 percent price rise at the consumer level as compared with the farm-gate price.

For mackerel from Nghe An province to Hanoi city, this was a long fish marketing channel for the distance to be covered. There was a big difference in retailing price at site and in Hanoi city. Compared to the wholesaling price in Nghe An, the in-situ retailing price was 17.9 percent higher, while that at Hanoi city was much higher at 41.5 percent. There were indications that fish distribution over long distances was still limited and weak, resulting in higher fish prices for consumers, and lower prices for fish producers. Thus, efficient distribution channels for fish marine products should be set up to serve the inland consumers better. However, a prerequisite would be more investigations into marketing costs and margins to substantiate and specify this recommendation.

4.3 Fish marketing operations

Sales systems

In this section, examines how fish was traded in the market and how market operators could come together for fish trading.

- *Sales operation by market operators*

Fisherfolks and fish farmers were the primary fish producers with the major function of fish production. Fish products were mostly sold at landing sites or farm gates. The fish farmers are very much dependent on fish sales. Fish products may take several days to sell depending upon how much fish they have harvested. Small fish ponds, cages or rafts are make useful storage facilities that can be used to reduce market price pressure or fluctuations, and keep the products alive or fresh to better serve consumers. Normally, fish are harvested at very early hours in the morning from around three to five a.m., and then they are sold to either fish wholesalers or retailers.

In HCMC, a shrimp wholesale centre has been operating for nearly one year. Samples of shrimp from districts of the city and near-by regions are displayed at the centre, shrimp transactions are accomplished as soon as the shrimp farmers and the traders come to an agreement on price and quantity agreement. The wholesale centre provides the opportunity for shrimp farmers and traders to interact and for accessing substantial information on shrimp production and market demand. This model would seem to be a good example to be replicated for other fish products and in other regions.

Compared with the fish farmers, fisherfolk were in a weaker position for selling their landed produce due to additional preservation and storage costs that they may incur. The longer the storage time before sales, the higher the costs and risk of losses. Therefore, once a fishing boat has landed, fisherfolk may have to sell the catch as soon

as possible. The prices fisherfolk may realise for their fish may also be affected by the number of boats docked in any given place and period; oversupply may drive down prices. For example, in Ca Mau and Kien Giang provinces cases were reported where fisherfolk had to accept commission on sale with an unspecified price to be determined later following onward selling.

It is necessary to establish firm coordination between fisherfolk and inland markets to ensure a smooth flow of fish products to the inland consumers. Better fish marketing facilities including storage and transportation would help to improve the situation.

Fish wholesalers are diverse in forms and operations as discussed in the previous chapter. Fish wholesalers who operate away from the coast are usually multifunctional. They deal directly with fish farms and sell to fish retailers or other traders at pond side of the fish farmers. In general, the multifunctional wholesalers have a very close relationship with both fish farmers and fish retailers. They may set up their own soft loan packages or provision of inputs like feeds and fingerlings to assist farmers. In return, they have a stable source of fish products for their business. The operation of the multifunctional wholesalers was effective as perceived by the fish farmers in Hanoi city. The fish retailers or other traders however, may be linked to several single wholesalers, whose products may be seasonal or limited to some specific products. Therefore, it is possible that a specific fish product may be available in one market, but not in another market nearby.

For marine capture fisheries first fish wholesalers primarily operate at fish landing places. Similar to the multifunctional wholesalers, the first wholesaler has a close relationship with fisherfolk. The catch by fisherfolk may be relatively stable over time; however, the purchasing capability of the first fish wholesalers was very much dependent on the absorption capacity of the inland market, (final consumption and processing). Therefore, access of the first fish wholesalers to inland markets was critical for improving the marketing of the catch of the fisherfolks.

Another type of fish wholesaler was the last-stage fish wholesaler who often operates at trade markets. The last-stage wholesalers obtain fish from other wholesalers and sells to retailers in specific geographical areas. In the inland market, it was rare to find a last-stage fish wholesalers dealing in fresh fish products. Several were identified in big cities (Long Bien market in Hanoi city or Hoa Binh, Cau Ong Lanh markets in HCMC). It was necessary to pay attention to the last-stage wholesalers since they play a decisive role in fish distribution to consumers.

Besides the above mentioned types of wholesalers, intermediate wholesalers coexist linking the first wholesalers with the last-stage ones, or with other traders like fish processors. The role of the intermediate wholesaler will continue to be significant unless fish marketing infrastructure was improved or market access for the first or last-stage wholesalers improved.

In summary, fish wholesalers play a very important role in the market. In order to increase the market access and the sales systems, it was necessary to improve fish marketing infrastructure, specifically market centres and facilities.

Fish retailers mostly operate in retail market centres. Consumers come and purchase fish directly. The fish price was bargainable depending on freshness, size, and species. In some rural areas, fish was sold near-by roads, highways, or at cross-roads where consumers have easy access. These fish markets are temporary and unroofed. Processed fish products like frozen, canned, fish sauce, or dried may be sold in supermarkets. Fish sauce and dried fish products can be found in most groceries. There are shops specializing in retailing fish sauce or frozen and canned products.

- *Sales coordination among market operators*

Marketing agents operating in the chain have close relationships. This helps to ensure a smooth flow of fisheries products through different stages. These paragraphs examine

the arrangements marketing agents make for their purchase or sales of fisheries products.

a. Sales agreements

Sales are agreed from one day to several months before the transaction of products or it was perceived as the regular transaction between the seller and the buyer so that no further arrangement was needed. Among the marketing agents surveyed, the majority has sales arrangements as presented in Table 82. Less than half (43.7 percent) of the fisherfolk do not have agreements since a large proportion of them do not have a stable landing site; landing places can vary according to fishing trips. In this case the product transaction and price setting was done as soon as the boats are anchored. In such situations, it was reported that fisherfolk often are at a disadvantage when sales prices are fixed.

Sales agreements may be formal or informal arrangements, the majority being informal. It means that price, quantity and other trading conditions are set orally. Table 83 shows that there was only a small fraction of producers and wholesalers having legal contracts with trading partners, who are often fish processors. This was the pattern of contract farming promoted by the legal framework of the Government. Notably, a majority of the processors (66.3 percent) has sales agreements with trading partners, especially with foreign importers.

b. Purchasing arrangements

Similar to the sales agreements, purchasing arrangements are undertaken by various marketing agents to stabilize the supplies of raw materials for processors, wholesalers and large consumers (Table 84).

Oral purchasing agreements are the main type used by marketing agents, 90.3 percent for the wholesalers and 79.8 percent for the large consumers. Legal contacts are important for processors with 23 percent (Table 85). This pattern of contract farming benefits not only the processors, but also the suppliers, especially the fish farmers or fisherfolks who often have problems with the marketing of their outputs.

Transport

Fish transportation was less of a concern for fisherfolks than for fish wholesalers, processors and retailers.

TABLE 82
Percentage of respondents with a sales agreement

Response	Marketing agents			
	Fish farmers	Fisherfolk	Wholesalers	Processors
Yes	77.8	43.7	86.2	76.4
No	22.2	56.3	13.8	23.6

TABLE 83
Types of sales agreement by respondents (%)

Types of agreement	Marketing agents			
	Fish farmers	Fisherfolk	Wholesalers	Processors
Oral	92.4	96.6	91.2	25.3
Legal contract	6.7	1.1	4.0	66.3
Hand written	0.8	2.3	1.8	-
Others	-	-	2.9	8.4
Total	100.0	100.0	100.0	100.0

TABLE 84
Percentage of respondents with a purchase agreement (%)

Response	Marketing agents		
	Wholesalers	Processors	Large consumers
Yes	83.7	69.6	74.2
No	16.3	30.4	25.8

TABLE 85
Types of purchase agreement by respondents (%)

Types of agreement	Marketing agents		
	Wholesalers	Processors	Large consumers
Oral	90.3	56.8	79.8
Legal contract	3.0	23.0	10.1
Hand written	2.6	7.2	5.6
Others	1.5	17.6	4.5
Total	100.0	100.0	100.0

TABLE 86
Types of transportation used by fish wholesalers by region

Types of transportation		Region			Total
		Northern	Central	Southern	
None	Count	25	1	2	28
	%	22.1	1.2	1.7	8.8
Motorcycle	Count	63	41	26	130
	%	55.8	48.2	21.7	40.9
Bicycles	Count	5	-	2	7
	%	4.4	-	1.7	2.2
Tricycles	Count	-	1	4	5
	%	-	1.2	3.3	1.6
Truck	Count	16	32	67	115
	%	14.2	37.6	55.8	36.2
Bus	Count	-	-	3	3
	%	-	-	2.5	0.9
Boat	Count	2	2	6	10
	%	1.8	2.4	5.0	3.1
Collection boat	Count	1	5	8	14
	%	0.9	5.9	6.7	4.4
Frozen truck	Count	1	3	2	6
	%	0.9	3.5	1.7	1.9
Total	Count	113	85	120	318
	%	100.0	100.0	100.0	100.0

TABLE 87
Transportation used by fish retailers

Types of transportation		Types of business			Total
		Supermarket	Itinerant traders	Market stall	
None	Count	-	-	5	5
	%	-	-	2.4	2.1
Motorbike	Count	5	8	135	148
	%	83.3	27.6	65.5	61.4
Bicycles	Count	-	16	30	46
	%	-	55.2	14.6	19.1
Tricycles	Count	-	2	20	22
	%	-	6.9	9.7	9.1
Truck	Count	1	-	2	3
	%	16.7	-	1.0	1.2
Bus	Count	-	1	2	3
	%	-	3.4	1.0	1.2
Boat	Count	-	-	4	4
	%	-	-	1.9	1.7
Collection boat	Count	-	2	5	7
	%	-	6.9	2.4	2.9
Others	Count	-	-	3	3
	%	-	-	1.5%	1.2%
Total	Count	6	29	206	241
	%	100.0	100.0	100.0	100.0

TABLE 88
Means of transportation used by fish processors by region

Means of transportation		Region			Total
		Northern	Central	Southern	
Motorbike	Count	16	-	-	16
	%	45.7	-	-	15.4
Bicycles	Count	9	-	-	9
	%	25.7	-	-	8.7
Tricycles	Count	-	-	2	2
	%	-	-	4.1	1.9
Trucks/vans	Count	7	16	19	42
	%	20.0	80.0	38.8	40.4
Bus	Count	-	1	-	1
	%	-	5.0	-	1.0%
Boats	Count	1	1	11	13
	%	2.9	5.0	22.4	12.5
Train	Count	1	-	-	1
	%	2.9	-	-	1.0
Frozen truck	Count	1	2	17	20
	%	2.9	10.0	34.7	19.2
Total	Count	35	20	49	104
	%	100.0	100.0	100.0	100.0

In general, fish was transported by ordinary means of transportation by wholesalers and retailers. Motorbikes are used by 40.9 percent of the wholesalers (Table 86), and 61.4 percent of the retailers (Table 87). In addition, trucks are used by 36.2 percent and 40.4 percent of the wholesalers and processors respectively. Frozen trucks are used by 19.2 percent of the processors (Table 88), but wholesalers use them to a lesser extent.

The majority of fish farmers (54.6 percent) consider that their products are normally consumed within their province (Table 89). Freshwater fish farmers report that their products are basically consumed within their district or commune. The situation was similar in the case of fish wholesalers; 54.8 percent are selling their products within their province (Table 90). Only some intermediate wholesalers (16.3 percent) are selling to markets in other provinces. This shows that the current fish marketing system was either localized or restricted to the provincial levels rather than a nationwide system. It may imply that fish was not adequately supplied wherever it was needed.

Storage and preservation

Ice and salt are common material for fresh fish preservation at any fish marketing stage.

TABLE 89
Destinations of fish consumption perceived by aquaculturists

Destinations	Freshwater aquaculturists		Brackish and marine aquaculturists		Total	
	Count	%	Count	%	Count	%
Don't know	5	3.0	21	17.9	26	9.2
Within commune	90	54.5	5	4.3	95	33.7
Within districts	96	58.2	10	8.5	106	37.6
Within province	90	54.5	64	54.7	154	54.6
In other provinces	39	23.6	42	35.9	81	28.7
In Hanoi	30	18.2	0	0	30	10.6
In HCMC	20	12.1	25	21.4	45	16.0
In Danang city	3	1.8	4	3.4	7	2.5
Abroad	6	3.6	53	45.3	59	20.9
Total	165	58.5	117	41.5	282	100

For fish farmers fish preservation was not a difficult matter since they can keep their products in the ponds. For fisherfolks, ice used for preservation was brought on-board from icemakers situated on land. Several fishers report that the length of their fishing trip was dependent upon the amount of ice available for fish preservation on sea. Only 3.9 percent of the fisherfolks have freezers and 2.8 percent have ice-making machines on-board. It was likely that insufficient supply of ice for fish preservation was a

problem for fisherfolks. This problem may result in a high rate of waste or low quality of fish captured.

Very few cases of both fish wholesalers and retailers are equipped with frozen storage or freezers. Only 2 percent of the wholesalers and 1.6 percent of the retailers have freezers, and 2.3 percent and 7.4 percent of the wholesalers have freezer storage and frozen trucks respectively. No multifunctional wholesaler was equipped with these facilities, indicating that the facilities currently available are neither sufficient for the fresh fish traders nor for the marketing of frozen fish products.

Processing

From Table 91, it may be concluded that at processors level, frozen fish products are the major form of processing. It was produced by 46.3 percent of the processors surveyed and accounts for 78.2 percent of the total quantity of fish processed by these processors. IQF fish products, fillets, canned or ready-made products are minor items in the total output of the processing industry. Fish sauce was a common product, produced by 18.5 percent of the processors. Dried fish was produced by 28.7 percent of the processors, but contributed only to 4.14 percent of the total production. This indicates that frozen products are the major form produced, while value-added products represent a minor part of the total production of the processing industry.

Apart from the fish processing industry, fish was also processed at other levels such as producers and wholesalers. It was found that 18.2 percent of the fisherfolks dried some portion of catch before selling, and 4.1 percent of the wholesalers surveyed dried fish before selling. Several wholesalers also produce fish sauce or paste. However, fish processing at these levels was a minor function.

Quality assurance

In general, fish market operators apply good handling procedures to assure best quality of fish products for the market. It was found that most of the market operators are satisfied with the products purchased in terms of quality, delivery and form of the products. It reveals that the current supply system was operating properly providing supplies for various marketing agents. Only a small fraction of the agents indicate that they are seldom or rarely satisfied with the products purchased (Table 92).

However, fish consumers cannot be sure that they are getting the right quality products at the right time and places. No product guarantee system was available

TABLE 90
Origin of fish traders in relation to wholesaler type

Origin of fish trader		Type of wholesaler				Total
		1st WH	Last WH	Pure WH	Multifunc. WH	
Same district	Count	19	42	19	20	100
	%	38.0%	43.3%	22.1%	50.0%	36.6%
Same province/city	Count	23	54	51	19	147
	%	46.0%	55.7%	59.3%	47.5%	53.8%
Neighbouring provinces	Count	8		14	1	23
	%	16.0%		16.3%	2.5%	8.4%
Others	Count		1	2		3
	%		1.0%	2.3%		1.1%
Total	Count	50	97	86	40	273
	%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 91
Forms of fish products by surveyed processors

Forms of products	No. of processors		Total output (tonne)	
	Count	%	N	%
Frozen	50	46.3	69968	76.8
Canned	2	1.9	1019	1.1
Ready-made	9	8.3	2278	2.5
IQF	11	10.2	7473	8.2
Fillet	19	17.6	5006	5.5
Dried	31	28.7	3769	4.1
Smoked	8	7.4	288	0.3
Surimi	4	3.7	1280	1.4
Sauces (litre)	20	18.5	621546	-
Others	2	1.9	-	-
Total	-	-	91081*	100.0

Note: The total was excluded from sauces

TABLE 92
Satisfaction on fisheries products purchased (%)

Frequency of satisfaction	Market operators			
	Wholesalers	Processors	Retailers	Large consumers
Always	49.0	44.2	43.1	48.3
Most of the time	45.4	51.0	46.0	44.2
Sometime	4.2	3.8	8.8	6.7
Seldom	1.1	1.0	1.5	0.8
Rarely	0.3	0.0	0.7	0.0
Total	100.0	100.0	100.0	100.0

TABLE 93
Cost structure by market operators (%)

Item	Wholesalers	Processors	Retailers
Shop rent / land tax	0.4	0.2	0.6
Fuel	0.5	1.4	0.6
Materials (ice, salt, water, etc.)	0.6	0.7	0.7
Wage	2.5	19.1	1.1
Repairs and maintenance	0.3	0.3	0.1
Transportation	0.7	1.3	1.0
Transaction (tel. bill, etc.)	0.4	1.1	0.6
Interests	0.2	1.7	0.1
Tax and fees	0.5	2.2	1.0
Commodity/cost of raw materials	94.1	70.3	94.2
Advertisement	-	0.3	-
Others	0.1	1.4	0.2

TABLE 94
Means of advertisement used by market operators (%)

Item	Wholesalers	Processors	Retailers	Institutional customer
None	81.0	40.4	92.4	47.4
Printed newspaper	1.0	10.6	0.4	5.2
Radio/TV	1.0	3.8	1.7	-
Calendar	10.0	17.3	5.1	4.3
Leaflet	-	20.2	0.4	3.4
Trade fair	1.5	29.8	2.1	1.7
Web page	-	17.3	-	-

at fish producer, wholesaler, and retailer levels. Only products from fish processors and institutional consumers are equipped with quality assurance systems. It was found that 76.9 percent of the institutional consumers obtained the Safe and Hygienic Food Certificate and 73.5 percent of the processors obtained HACCP certificate, 54.4 percent the GMP certificate, 23.5 percent follow the EU Code, and 16.2 percent the ISO series. These systems of quality management affirm the status of the fish processors in the market and their access to the world market. It was desirable to establish well-recognized quality assurance systems also for the domestic market.

Cost structure of fish market operators

Various costs occur in fish marketing. Table 93 presents the cost structure of selected fish market operators i.e., fish wholesalers,

retailers, and processors. For fish wholesalers and retailers, the cost of the fish products purchased was the main cost item that accounts for more than 94 percent of the total cost. Other cost items such as transport, transaction, materials, and advertising are minor. It means that fish wholesalers and retailers are simply buying and selling fish. For fish processors and exporters the situation was different. The cost of fish raw materials accounted for 70.3 percent of the total costs. Higher expenses on transportation, transaction, advertisement, especially labour wages are found, meaning that additional expenses are added to the fish marketing process, which enhances the product value.

Advertisement was not a major concern of the fish marketing operators. Only 5 percent of the retailers (14 cases) and 10.9 percent of the wholesalers (39 cases) report that they spend money for fish advertisement. This was different for fish processors, of which 48.1 percent (52 cases) had spent VND 13.5 million (median)/year for fish advertisement. The retailers and wholesalers spent only VND 0.4 and 1.5 million (median) per year for advertisement respectively. The most common means of advertising for the wholesalers and retailers was the printing of calendars for the occasion of the New Year. The fish processors use various means including Web pages, leaflets, printed documents, and mass media (Table 94).

However, the survey did not provide sufficient results in different cost items. Therefore, it will be necessary to carry out further investigations.

4.4 Infrastructure and equipment for fish marketing

Landing markets

Landing markets are normally adjuncts of landing places or fishing ports. Recently, four new offshore fishing ports and landing markets were opened. The following paragraphs present the organizational structure and operational pattern of the inland Thuan Phuoc fishing port and landing market.

Thuan Phuoc was one of the ten key fishing ports in the country funded by ADB. It was also one of the four fishing ports which perform most effectively in terms of number of boats landed, fisheries logistic services and total revenues. In 2001, the total revenue was about VND 700 million, which was greater than the planned figure of VND 650 million.

The port employs 42 staff working in 4 functional divisions, and 4 units working in areas of trading, cleaning, guarding, and fee collecting. There was one ice-making plant with a capacity to produce 4 000 blocks per day, one filling station of 40 000 litres, one off-shore petrol-selling boat of 50 000 litres, and one freshwater tank of 150 m³. In addition, there are many kinds of informal services provided by local people relevant to fisheries activities including umbrella, tank, basket, scale and tray, leasing service, transportation service and loading/unloading service. The management of the port adopted a decentralization strategy for most activities at the port. Participatory management units for the leasing services were formed, and transportation and loading/unloading services will be organized similarly. Consequently, the environment on the port was kept clean, wastes are well cleared out, security was under control, social evils, which used to be a serious problem, are prevented, and the port was attracting more and more operators for fisheries business in the port.

It was estimated that there are about 20 boats landing per day, 40 percent of which are boats coming from other provinces than Da Nang city. In 2001, the volume traded at the port was about 30 000 tonnes, 60 percent of which were landed by boats; the remaining 40 percent were transported from other provinces inland. Hence Thuan Phuoc was not only a fishing port, but also an inland regional fisheries trading centre, which attracts traders and fishers from different provinces in the region.

In the port, there are about 10 wholesalers, whose trading volume accounted for 70–80 percent of the total. In addition, there are 400–500 traders regularly operating at the port and channelling fisheries products to markets in the city or near-by regions. This shows that Thuan Phuoc functions also as a regional fish market for the city and the regions near-by.

Wholesalers in the port procure fish directly from fisherfolks, then sell the products to processors in the city or elsewhere which may offer better prices, e.g. processors in provinces near-by, or they may export directly. Wholesalers tend to establish long-term, inter-dependent relationships with boat-owners by providing them with favourable credit and inputs like fresh water, ice and petrol. In return, the boat owners have to sell their catch to them at a price established by the wholesalers. Consequently, fisherfolks do not receive a market price, which should be higher than the given price.

Thuan Phuoc fishing port will continue to implement its action strategy in order to boost trading volume and to become a regional trading and landing centre. Principal measures are:

- restructuring management of the port by enhancing the participation of different stakeholders like boat owners, wholesalers, etc.;
- improving quality of the existing services and expanding to other services like boat repairs, gear supply, etc.;
- building up a fisheries trading centre at regional level recognized by the Government and various stakeholders; and
- providing favourable credit to fisherfolks, boat owners and others using funds borrowed from commercial banks or the State budget in order to help boat-owner to become independent from wholesalers.

Inland wholesale markets

Before 2002, the country had no trading centre or a separate wholesale market for fisheries products. Fish trading was normally conducted at landing places, or in a scattered manner at fish traders' sites. Market information was insufficient and price formation did not reflect actual market price. The following paragraphs present key information on the organization and operation of Can Gio Aqua-product trading centre provided by a Project Mission (Ms. Nguyen Viet Ha, Ms. Nguyen Thi Phuong Mai, and Ms. Hoang Thi Minh Trang).

In April 2002, Can Gio Aqua-product Trading Centre was opened in Can Gio district under the responsibility of Ho Chi Minh City People's Committee. This was the first fisheries wholesale market established in Viet Nam. Its main objective was to establish trading relationships between aquaculturalists and fishery processors and exporters. The Centre's activities concentrate on shrimp trading during the pilot phase. Experiences will be learned for the expansion covering other fisheries products.

The centre was located 70 km west of HCMC and it was open every Tuesday, for the first time on 25 May 2002. The city authorities are planning in the near future, services of feed, medicine and technical advice will be provided to attract more farmers from the district as well as clients from other areas.

In order to acquire shrimp products, shrimp traders need to fill out a registration form either directly by hand or through telephone. Ordering through telephone was common for shrimp traders coming far from the city like Tien Giang, Kien Giang, Ben Tre, and Ba Ria - Vung Tau provinces. The information necessary to register was name and address of the shrimp trader, estimated quantity for the whole year and by given month to be purchased, and the proposed prices for different types of the products.

Sellers at the Centre are the shrimp farmers; they also have to fill out a registration form at the Centre's office. In this form, the farmers provide information on size, quantity and prices for different types of shrimp offered.

Based on the proposed prices provided in the registration forms by both sellers and buyers, discussions and bargaining would be held to reach a final agreement on prices, size, location and time of the trading, through a memorandum or trading contracts. Another meeting at site or sample harvests may be done to provide more detailed information on the products before the trade.

At the time of the mission in July 2002, there were five enterprises as main shrimp buyers from shrimp farmers, namely CHOLIMEX, COFIMEX, SEASPIMEX, INCOFISH, and Fisheries Company No. 1. For the last 12 trade sessions, the total shrimp quantity offered was 500 tonnes, of which 130 tonnes was traded, according to Mr Hung, the director of the Centre.

Some buyers interviewed on the 13th trading session made different comments about the current performance of the Centre. Some said it took a lot of time and effort to meet with and practically see/inspect the shrimps, which had been offered in the registration form by the shrimp farmers. In many cases, the size of the shrimps mentioned in the form was quite different from the real objects. Both the sellers and buyers had to go through a long process of bargaining and negotiating for price, transportation arrangements and exact date/hour to catch the shrimps. One of the five customers of the Centre, the SEASPISMEX (Mr Think, Head of Planning department) explained that the company's participation in the Centre was considered as the supportive reaction to the policy and experimental efforts made by the City People's Committee. They accepted some loss in spending time and transport for buying some hundred kg of shrimp whilst the company needs 100–200 tonnes/day. However, Can Gio Centre could help SEASPISMEX to implement a small contract to export HOSO black tiger shrimps as they could buy fresh shrimp with short distance of transportation (70 km). The company used to buy raw material from the Mekong River Delta Provinces namely Ca Mau, Kien Giang and Bac Lieu which was more than 300 km away.

This was the first model for fisheries wholesale market of the country and various difficulties occurred during its operations as mentioned by Mr Hung, the director:

- inadequate of technical staff for assisting shrimp traders and farmers in shrimp transaction;
- lack of experience and systematic classification of the product and estimation of harvests;
- insufficient capability of the Centre in enforcing payment;

- unsuitable taxation policy that hinders private enterprises' participation at the Centre;
- insufficiency of legal framework for ensuring implementation of shrimp trading contracts between the shrimp farmers and traders, which were occasionally violated, especially when additional profit could emerge for some shrimp farmers. Violation on the size of the product sometimes occurred by the farmers' overestimation when filling the registration forms at the Centre; and
- around Can Gio district, shrimp culture was mostly done in the pattern of improved extensive farming at small scale level, which could produce a small harvest of 400–500 kg that was inconsistent with much higher quantity demanded by the shrimp traders.

In order to solve these problems, the Centre was aiming at the following improvements:

- construction of shrimp cages, in which shrimp could be stored and displayed at trading sessions so that shrimp traders could have full information on the expected products;
- establishment of kiosks providing feed, drugs, and other fisheries services;
- strengthening of capacity for its staff to better assist in the implementation of contracts or memoranda between the shrimp traders and farmers;
- elaboration of a legal framework for the implementation of the contracts;
- installation of Eliza machine at the Centre for identifying shrimp disease; and
- organization of seminars to disseminate relevant taxation policy on fish trading to various stakeholders especially the private enterprises.

Retail markets and shops

Consumers can buy fish products at various market places. Various kinds of fish species, forms, quantity, and quality are available in the market. Markets are often concentrated in cities and large urban areas and supply food in general and fish in particular to consumers. The following paragraphs are related to retail markets in Da Nang city in the central region of Viet Nam.

Da Nang was a small city with total land area of 1 256.2 km². In the urban area, there are five markets namely Han, Con, Tam Giac, Moi, Dong Da markets and one newly opened supermarket – Da Nang (or Bai Tho) Supermarket. These markets and supermarket are managed by City's Market Management Company under the City's Department of Trade. In each market there was a branch of the company organized as a Market Management Unit. This was a unique organizational structure found in Viet Nam; in other provinces and cities markets are not managed by an independent organization. The implications of this organization are (i) security was ensured, pick pocketing and other kinds of social evils are prevented; (ii) the market environment was good since market user-right was clearly defined, market fee was collected, the entry and exit from market place are well managed; (iii) the market infrastructure was well maintained with roofing, water and sanitation; and (iv) there was a strong cooperation among market management units in the city in rush time in terms of security force and equipment sharing. It would be desirable if other provinces and cities would form similar market organization in order to improve the markets in the area.

Visits were paid to Han and Con markets in Da Nang. In Han market there are about 50 retailers selling fisheries products, which mostly are fresh marine species like Ocean tuna, mackerel, crab, shrimp, etc. There are a few retailers selling freshwater species like snakehead, carp, major carps etc. Snakehead was not produced locally but transported from Ho Chi Minh city via airplanes.

At the time of the visit (9.30 am) the number of customers coming to buy fisheries products was limited. From observation, it was clear that the number of sellers was greater than that of buyers. This reveals that fish consumption in the area was likely to

be at a low level. This can be proved by the fact that big fish like ocean tuna or mackerel are usually cut into small pieces of 0.2 to 0.4 kg that may fit with local people's purchasing power. Some retailers said that it was the time of rough seas and the price of fish went up, therefore, people turn to other types of meat other than fish.

It was also observed that retailers did not use much ice for fish preservation. This was likely to be due to the small volume traded, which may make fish costly if ice was used. That was why fish on sale somehow did not look fresh enough to attract customers.

It was also noted that some retailers do not operate for the full month, which may be due to an unstable level of consumption. Therefore, market fee was collected on daily basis of VND 3 000–4 000.

Dried products are found in groceries where agricultural, forestry, fisheries products and sometime consumer's goods are sold together. Main products are dried squid, shrimp, fish, sea horse, sea dragon, etc. It was found that customers were not in a rush to buy dried products in the city, but some tourists may buy them for consumption in their places of origin.

Da Nang supermarket opened in February 2002 in a majestic building and well-planned location. However, the number of customers coming for shopping was still low. There was one section to display fisheries products, but only a few products were displayed. Few were produced in the city, the others came from Ho Chi Minh city with some brand-name of SEASPIMEX.

The market management in Da Nang was superior to other localities. The fish retailing network includes markets and a supermarket in the city. However, the consumption level seemed to be low.

4.5 Labour in fish production, processing, and marketing

Labour was an important input for fish production, processing and marketing. Table 95 presents labour usage by various market operators. Aquaculturalists use six persons on average compared with 14 by fisherfolks. Fish processors employ the highest number of labourers with 291 persons in average, while fish retailers employ the least with two persons in average. The figure of wholesalers was three times that of the retailers with six persons. In aquaculture around half of the labour force was self-supplied from fish farmers, while the majority of the labour force under the fisherfolks was hired. Similarly, it was shown that 65.5 percent and 99.7 percent of the labour force of the fish wholesalers and processors are hired. Beside the permanent labour force by market operators, fish market operators also mobilize a huge number of seasonal labourers for fish production, processing, and marketing, particularly processors, aquaculturalists, and wholesalers (Table 98). 60.2 percent of the fish processors surveyed reported that they mobilized 1404.5 workdays in average per year, while from 20 to 30 percent of the aquaculturalists, fisherfolks, and wholesalers mobilized around 200 to 400 workdays per year as seasonal labour force. Therefore, fish processors, fisherfolks, aquaculturalists and wholesalers are the fish market operators, which create additional jobs for local rural employment.

TABLE 95
Labour usage by market operators

Item	Aquaculture	Fishing	Wholesalers	Processors	Retailers
Average no labourers (persons)	5.7	14.0	6.3	2.3	291.1
Hired labour (%)	54.0	84.6	65.5	35.8	99.7
Hired female labour (%)	19.79	1.39	53.34	77.58	78.13
Average monthly income of labourer (x 1 000 VND)	642.9	821.7	1102.9	896.3	800.7
Seasonal labour usage (%)	28.6	19.2	24.4	5.4	60.2
Workdays usage / year (days)	221.4	447.2	216.9	56.6	1404.5
Average daily wage rate (x 1 000 VND)	27.1	33.2	28.8	21.4	27.5

From a gender perspective, it was found that fisherfolks are not using female labourers; only 1.4 percent of the total hired labour force are women. Women are not allowed to be onboard during fishing trips. They are employed in inland fisheries for preparation of materials (water, salt, ice, food, fishing gears) for a fishing trip, or sorting fish species, or selling fish. Women are especially involved in fish wholesaling, retailing, and processing, in which the majority of the labour force was female. Women play much more important roles in fish marketing and processing rather than fish production. In the Mekong River Delta, fish trading was women's work, representing 89.4 percent of intermediaries in the market. According to the survey the average monthly income for fish labourers ranges from VND 600 to 1 100 000. Fish wholesalers get the highest average monthly income (VND 1 102.900), followed by fish retailers, fisherfolk, processors, and aquaculturalists. Seasonal labourers obtain daily wages up to 33 200 VND as paid by the fisherfolks, or at VND 21 400 as paid by the fish retailers. The wage rates are comparable to what was paid by other sectors of the country. Therefore, the fish industry not only creates employment for the rural labourers but also generates income for large proportions of the rural population through seasonal employment.

5. MARKETING FISHERIES PRODUCTS

5.1 Description of fish marketing channels

Sources of fisheries products by marketing agents

Fish farmers and fisherfolks are the primary producers in the fisheries industry, therefore, they are the primary sources of supplies to different marketing agents in the chain.

All major marketing agents such as wholesalers, processors, retailers, and large consumers obtain supplies from the primary producers. However, the main flows of fisheries products go through wholesalers, i.e., wholesalers are the main suppliers for the marketing agents in the subsequent stages. More than half of the processors, retailers, and large consumers depend on the supplies from wholesalers (Table 96).

Table 96 shows that 57.7 percent of wholesalers get supplies from other wholesalers, similarly for the processors and retailers with the figures of 19.4 percent and 10.1 percent supplied by other processors or retailers, respectively. Product transaction in the level of wholesalers was notably with participation of different types of wholesalers. A large proportion (57.7 percent) of the wholesalers are dependent on the supplies of others at the same marketing stage.

Some marketing agents acquire supplies also from other sources like foreign suppliers, or from own sources. Foreign suppliers provide marketing agents in the areas close to neighbouring countries (China or Thailand), however, are not the main sources for them. Fisheries processors tend to expand aquaculture activities so as to produce raw materials for their processing activity. This helps processors to become less dependent on external suppliers.

TABLE 96
Source of supplies accessed by fish marketing agent (%)

Sources of supplies	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Fish farmers	35.4	18.5	18.7	14.2
Fisherfolk	38.7	49.1	21.5	9.2
Wholesalers	57.7	62.0	68.3	58.3
Processors	8.0	19.4	9.0	9.2
Retailers	3.3	1.9	10.1	65.0
Unidentified sources	3.0	0.9	0.7	2.5

Note: Multiple responses.

TABLE 97
Preferences of fish suppliers by marketing agents (%)

Suppliers	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Fish farmers	26.9	14.2	13.1	6.7
Fisherfolk	29.6	38.7	18.5	4.2
Wholesalers	34.6	39.6	55.6	43.7
Processors	6.1	5.7	6.9	0.8
Retailers	1.4	0	5.1	43.7
Others	1.4	1.9	0.7	0.8
Total	100.0	100.0	100.0	100.0

TABLE 98
Locations for purchasing fisheries products by marketing agents (%)

Places	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
At home	56.9	62.0	28.8	44.2
At supplier's	54.7	59.3	66.2	62.5
At sea	4.7	3.7	-	-
At market	12.2	9.3	22.7	37.5
Other places	5	0.9	2.9	2.5

Note: Multiple responses.

TABLE 99
Customers of fisheries marketing agents (%)

Customers	Marketing agents				
	Fish farmers	Fisherfolk	Wholesalers	Processors	Retailers
Foreign buyers	-	-	-	42.6	-
Wholesalers	71.4	91.1	38.1	38.9	-
Retailers	13.8	12.9	64.9	31.5	11.5
Processors	9.3	8.5	19.6	22.2	-
Large consumers	2.6	0.4	21.3	1.9	32.0
HH consumers	16.1	9.4	18.0	6.5	90.6
Others	1.6	-	2.8	-	3.2

Note: Multiple responses.

TABLE 100
Proportion of sales value to different customers (%)

Customers	Marketing agents				
	Fish farmers*	Fisherfolk*	Wholesalers	Processors	Retailers
Foreign buyers	-	-	-	89.70	-
Wholesalers	52.22	90.72	22.28	4.40	-
Retailers	13.87	3.54	23.07	0.64	4.56
Processors	32.61	4.55	39.58	5.08	-
Large consumers	0.76	0.39	6.10	0.01	17.90
HH consumers	0.53	0.81	8.40	0.16	76.75
Others	0	0	0.57	0.01	0.79
Total	100.0	100.0	100.0	100.0	100.0

* Figures are proportions of physical traded quantity

majority of the agents go to the suppliers to purchase fish products to make sure that they get a better choice.

Wholesalers and processors operating in coastal areas may get their supplies at sea by using collector boats to purchase fish from fisherfolks right after the catch. It was reported that getting supplies at sea may result in lower purchasing prices and higher quality of the products purchased in terms of freshness, size and species. However, due to scattered fishing areas and lack of gathering points, less than 5 percent of the wholesalers and processors maintain a fleet of collector boats (Table 98).

Destinations of Fisheries Products

• *Customers of Fish marketing Agents*

Table 99 shows that 42.6 percent of the processors export fish products directly to foreign buyers. The majority of fish farmers and fisherfolk (71.4 and 91.1 percent, respectively) sold fish to wholesalers, and 64.9 percent of the wholesalers sold their products to fish retailers.

The flow of fisheries products was further analysed by the sales values transacted with different types of customers. Wholesalers are the main customers of the primary producers (Table 100) and processors are the second largest customers of the fish farmers. Fisheries products from the wholesalers are mainly sold to processors with

• *Preferences of fisheries suppliers*

Supplies directly from the primary producers are widely preferred by different marketing agents. At the early stages of the channel, around half of the wholesalers and processors prefer to get supplies from fish producers, while preferences of the retailers and institutional consumers (the later stages) are lower for supplies from fish producers, but instead from fish wholesalers and retailers (Table 97). The supplies from wholesalers are the most preferred, because: (i) diversified types and forms of fisheries products, (ii) large quantity of products available, (iii) stable supplies over time, (iv) market price flexibility, and (v) product traceability. This again confirms the important role of the wholesale level in fish marketing.

• *Market places for purchasing fisheries products*

It was not necessary that the product transactions are effected in markets, where the fisheries products are diverse. A large number of marketing agents receive the products at their home through a home delivery service provided by the suppliers. However, the

39.58 percent of the total sales value. It also reflects a relationship between the processors and the wholesalers where, for many processors, wholesalers perform a supporting role in the flow of raw material to the processors.

The sales value of the processors (89.7 percent) was realized mostly through export to foreign customers. Most frozen, value-added products are exported. Main products sold domestically by processors are fish sauce and pastes, which are often produced by small, artisanal processors. Retailers constitute the last stage in the marketing channel to final consumers. More than three fourths (76.8 percent) of the total sales value of the retailers are conducted to final household consumers (Table 100).

In comparing figures in Tables 99 and 100, it was shown that wholesalers are the main customers for aquaculturalists and fisherfolks. Although more wholesalers had trading relations with retailers, the conducted sales volume with the retailers was less than that with the fish processors. This may be interpreted as an assumption that high value fish products flow from fish producers to the wholesalers, then processors to export. The rest was for domestic market and finds its way for distribution by retailers.

- *Preferences on types of customers*

As reflected in selling behaviour of the marketing agents, wholesalers are the most preferred customers for the fish farmers and fisherfolks, foreign customers for the processors, and household consumers for the retailers (Table 101).

- *Market places for selling fisheries products*

Marketing agents may sell their products in various market places. Retailers usually operate in markets for selling products to household consumers. For the producers like fish farmers and fisherfolks, the selling function was mostly conducted right at the landing places or farm, i.e. 84.9 percent fish farmers sell at pond, 88.4 percent fisherfolks sell at landing places. Some of the sales by fisherfolks are conducted off-shore. In provinces Quang Ninh and Khanh Hoa, several off-shore fishing ports are in operation, 6.7 percent of the fisherfolks surveyed reported that they sell directly in the off-shore fishing ports. The collector boats at sea run by fisheries processors or wholesalers attract 10.3 percent of the fisherfolks to sell their catch at sea (Table 102).

TABLE 101
Preferences on customers by marketing agents (%)

Preferred customers	Marketing agents				
	Fish farmers	Fisherfolk	Wholesalers	Processors	Retailers
Foreign customers	-	-	-	53.4	-
Wholesalers	71.0	86.5	28.3	27.2	-
Retailers	7.1	3.6	41.2	10.7	4.7
Processors	12.6	7.2	17.4	3.9	-
Large consumers	4.2	0.9	7.6	1.9	21.9
HH consumers	3.2	0.4	3.6	2.9	71.9
Others	1.9	1.3	2.0	-	1.5
Total	100.0	100.0	100.0	100.0	100.0

TABLE 102
Locations for selling fisheries products (%)

Locations	Marketing agents			
	Fish farmers	Fisherfolk	Wholesalers	Processors
At home	84.9	-	58.3	42.6
Customer's gates	10.0	-	51.1	52.8
Farmer's ponds	-	-	1.7	-
Inland fishing ports	-	88.4	3.3	-
Off-shore fishing ports	-	6.7	-	-
Off-shore collector boats	-	10.3	-	-
Others	18.3	10.2	5.2	25.9

Note: Multiple responses.

TABLE 103
Number of suppliers accessed by marketing agents

Suppliers	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Fish farmers	3.76	7.33	1.40	0.42
Fisherfolk	3.46	4.19	0.96	0.23
Wholesalers	4.36	8.92	2.63	1.78
Processors	0.21	1.12	0.62	0.16
Retailers	0.53	0.13	0.53	2.52
Others	0.27	-	0.11	0.05
Total	12.59	21.69	6.25	5.16

TABLE 104
Groups of customers accessed by marketing agents

Groups of customers	Marketing agents			
	Wholesalers	Processors	Retailers*	Large consumers [†]
Foreign buyers	-	7.0	-	-
Wholesalers	2.7	7.6	-	-
Processors	0.9	1.6	-	-
Retailers	13.0	9.3	0.7	-
Large consumers	1.4	0.4	1.7	-
HH consumers	-	-	37.8	-
Others	0.9	-	0.3	186.2
Total	19.0	25.8	40.6	186.2

* Figures are number of customers per day on average.

TABLE 105
Concentration of sales value by marketing agent

Items	Marketing agents					
	Fish farmer	Fisherfolk	Wholesalers	Processors	Retailers	Large consumers
GINI co-efficient	0.75	0.61	0.79	0.82	0.62	0.67
Share of 20% smallest agents (%)	0.34	2.0	0.6	0.0	2.6	1.6
Share of 20% biggest agents (%)	79.4	65.0	83.4	84.4	65.7	70.7

agents, which cooperate. Horizontal concentration was expressed by the number of the same type of marketing agent in the chains. The concentration in this regard was measured by GINI coefficient, which expresses the share of a given group of marketing agents in the total value of the chain in the industry.

- *Number of suppliers accessed*

Marketing agents may receive supplies from various sources. The assumption was that in a competitive market, the larger the number of suppliers accessed, the better the market price the agents can get, and the more choices of products can be obtained. Table 103 shows that the marketing agents received supplies from at least five suppliers. Wholesalers are again in the strongest position confirming their important role.

Wholesalers and processors have a greater choice of suppliers, indicating that they had stronger bargaining power. Retailers and the large consumers have less choice, which would show that they are prices taken from the previous marketing stages.

- *Number of customers accessed*

Market concentration was also examined in terms of number of customers accessed by each marketing agent. Table 104 shows that the marketing agents have a large number of customers, of which regular customers of the wholesalers and the processors are on average 19.0 and 25.8, respectively. The retailers and the large consumers have a large number of customers, the retailers 40.6, and the large consumers 186. These two categories of marketing agents operate at the later stage of the marketing channel where the number of customers tends to be higher than at the earlier stages; therefore, they can be expected to have strong power in setting selling prices.

Table 104 also shows that a major group of customers of the wholesalers are the retailers with 13 retailers on average. Household consumers are the major customers for the retailers and the individual customers for the large consumers. About seven

Wholesalers may sell products either at home or offer delivery service to the customer's location. Some wholesalers (5 percent) act as brokers operating at landing places. The products are transacted directly from the producers to the wholesalers' customers. In these cases the wholesalers are responsible for arranging the transactions, records and payments. The charge a commission of 5–10 percent. Market places for the processors are different from that of the other agents since they act as exporters.

5.2 Market structure, conduct and performance

Market concentration

Market concentration was measured vertically and/or horizontally. Vertical concentration expresses relationship of one marketing agent to forward or backward agents. The nature of relationship was determined by the number of

foreign customers are accessed by each processor on average. The processors also set up a distribution network for the domestic market through wholesalers and retailers with an average of 7.6 and 9.3, respectively (Table 104).

- *Concentration of sales value*

Concentration of sales value was measured by GINI coefficient, which expresses the distribution of fisheries sales value among the marketing agents operating at the same level in the chain. It measures the share of an individual or a group of agents compared to the total sales value of the same level of marketing.

The analysis shows a great difference or distance in sales values across the country (Table 105). The GINI coefficient reaches nearly one for the group of processors (0.822) and wholesalers (0.788). This indicates that a group of the marketing agents has conquered a very large proportion of sales value of the marketing segment horizontally. A similar interpretation can be maintained for the other marketing agents under study.

The share in total sales value of the 20 percent smallest or biggest marketing agents further illustrates the concentration of the fisheries sales value in a group of marketing agents. For the processors, only 20 enterprises out of 108 processors studied stand for around 84 percent of the total sales value of fisheries products. The 20 smallest enterprises occupying very small percentages (0.01 percent) of the total sales value. However, it has to be kept in mind that the category of processors groups together quite different activities, e.g. shrimp processing for exports and fish sauce production for the local market. Similarly, the smallest and the biggest 20 percent of the wholesalers represent 0.55 and 83.4 percent of the total sales values, respectively.

The concentration in total sales value leads to a concentration in market power, especially in shaping the marketing channels and impact on the formation of market prices.

Market competition

Market competition was measured by the number of marketing agents operating in the same category and if one business may affect the performance of the others, regardless of spatial aspect. It was found that each marketing agent has around 10 competitors on average; however, the processors had more with 30.6 competitors. This may reflect fish exporters competing when expanding to foreign markets, especially in Asia, which was capable of consuming various types and grades of fisheries products. Except for the processors, the numbers of other marketing agents doing the same business does not indicate a highly competitive market (Table 106).

Table 106 also illustrates that the majority of fish marketing agents maintain fair relationship with their competitors, relatively few of the agents show that the relationship with their competitors was hostile.

Another indicator of competitiveness was the degree of competition in the market as perceived by the marketing agents (Table 107). The majority of the wholesalers and retailers perceive that the degree of competition in the market was at a medium level. The processors and the large consumers see higher degrees of competition in

TABLE 106
Number of direct competitors and relationship maintained with competitors

Items	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Mean no. of competitors	14.9	30.6	15.4	9.7
Fair	77.1	64.4	82.9	84.0
Relationship with competitors (%)	14.3	24.0	11.3	6.6
Reserved	8.6	11.5	5.8	9.4
Hostile	100.0	100.0	100.0	100.0
Total				

TABLE 107
Perceptions of market competition by marketing agents

Degree of competition	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
High	30.4	50.5	22.7	51.4
Mid	60.2	41.7	62.9	42.2
Low	9.4	7.8	11.4	6.4
Total	100.0	100.0	100.0	100.0

TABLE 108
Comparison of market competition between 2000 and 2001 (%)

Competitiveness	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Increased	40.1	74.8	33.6	54.8
Decreased	3.9	1.9	7.4	1.0
No change	55.9	23.3	59.0	44.2
Total	100.0	100.0	100.0	100.0

TABLE 109
Perceived negotiation power in setting purchase price (%)

Price determiners	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Buyers	13.9	19.2	11.3	15.8
Sellers	5.5	2.9	18.2	18.3
By negotiation	47.4	56.7	49.6	45.0
Current market price	33.2	21.2	20.8	20.9
Total	100.0	100.0	100.0	100.0

TABLE 110
Perceived negotiation power in setting sales price (%)

Price determiners	Marketing agents		
	Wholesalers	Processors	Retailers
Suppliers	1.4	2.0	7.0
Sellers	13.8	13.7	26.1
Purchaser	3.3	4.9	1.1
By negotiation	44.8	50.0	41.5
Current market price	36.7	29.4	24.3
Total	100.0	100.0	100.0

TABLE 111
Perceptions on changes in fish price

Perception	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Always	27.9	15.4	22.5	9.3
Most of the time	21.2	15.4	16.2	14.4
Sometimes	30.1	24.0	36.9	41.5
Seldom	12.0	16.3	13.3	19.5
Rarely	8.9	28.8	11.1	15.3
Total	100.0	100.0	100.0	100.0

Fisheries market prices

In this section negotiation power in the formation of purchase and sales prices for fisheries products, changes in prices, and factors affecting the change are examined.

Tables 109 and 110 show a tendency of increasing bargaining power in setting sales prices by marketing agents across the chain from the early stages to the last stage of retailers and large consumers. In Table 109, only 5.5 and 2.9 percent of the suppliers of wholesalers and processors had power to set prices. For retailers and large consumers, a higher proportion (around 18 percent) of their sellers had power in setting prices. This tendency was also reflected in Table 110 where the negotiation power increased from the wholesaler and processing level to retailing, 26.1 percent of the retailers had the power to set prices. This analysis shows that marketing agents at the later stages of the marketing chain had more bargaining power and influence in the formation of prices of fisheries products. It also means that purchasers at the later stages of marketing channels are usually price takers.

the market. This perception can be explained by the number of competitors faced by the processors as discussed earlier and by a specific spatial area of operation covered by the large consumers. Since the number of customers was limited, an increase in the number of competitors results in a higher degree of market competition.

Market competition was further examined by the tendency of competition-comparing to the current with the previous year, i.e., 2001 compared to 2000). Table 108 shows that more than half of the wholesalers and the retailers see no change in the competitiveness in the fisheries market, the other categories indicate a tendency towards market competition, particularly the processors. This perception runs parallel to the expansion of the number of fisheries processors and exporters over time.

Whereas the degree of competitiveness in the export market tends to be higher due to the expansion of operation of fisheries processors and exporters, the domestic market, in which the wholesalers and retailers are the key agents in channelling fisheries products, would appear to be less competitive. This may be interpreted as an opportunity for newcomers to enter the domestic marketing system as being rather favourable.

It should be noted that up to 50 percent of the different marketing agents participate actively in the formation of purchase and sales prices, i.e. by negotiation. In both cases processors seem to be more active than wholesalers and retailers. Wholesalers on the other hand, tend to be guided more than the others by current market prices. Considering the relatively low incidence of unilateral determination of prices in comparison to the high proportion of bilateral negotiation or acceptance of current market prices (which are not assumed to be determined by monopolistic parties) it can be concluded that the level of competition in the fish marketing system was sufficient and therefore, not restricting production or consumption levels.

Some prices are not set by seller or buyer, but by the suppliers of the sellers. Table 110 shows that 7 percent of the retailers sold fisheries products at prices determined by their suppliers. Canned, value-added products and fish sauce are the main items for which the suppliers set prices, i.e. wholesalers or processors.

- *Frequency of changes of fish prices*

Wholesalers and retailers perceive prices as flexible (always, most of the time and sometimes changing), whereas processors and large consumers see them somewhat more stable.

Nearly one-third (28.8 percent) of the processors perceived that the price of fisheries product rarely changed. This was pertinent to processed products in general since the supply to market was often stabilized by better storage or preservation of the products.

- *Seasonal changes of fish prices*

Price of fisheries products often changed as perceived by various marketing agents. Table 111 shows that price of fisheries products tend to be highest during the period from November to March.

The changes of fish price over time are explained by seasonality of aquaculture and marine capture and consumption behaviour of consumers. For the consumption behaviour, Vietnamese often consume more food (including fisheries products) and other goods or services during the traditional New Year celebrations. Therefore, the demand for fisheries products was higher by the end or early of the year. In addition, substitutes for fisheries products like chicken or pork are limited due to their own seasonality. The nature of the animal protein market by the end or early of the year results in an increase of fish prices as indicated in Table 112.

- *Factors affecting the price of fish*

There are many factors affecting the price of fisheries products on demand and supply. On the supply side, fish prices are affected by the seasonality of production, weather conditions which cause the seasonality of the market supply, i.e., the quantity of the product available on the market. It was found that seasonality of fisheries products was the main factor affecting the price. The majority of wholesalers and fisherfolks (79.8 and 67.6 percent, respectively) mentioned this factor (Table 113). It was also

TABLE 112
Perceived months in which fish prices goes highest by respondents (%)

Months	Marketing agents			
	Wholesalers	Processors	Retailers	Large consumers
Jan	21.8	17.2	17.9	28.3
Feb	13.1	15.6	8.5	12.1
Mar	10.9	1.6	9.3	10.1
Apr	6.7	3.1	10.6	12.1
May	2.2	1.6	3.3	3.0
Jun	1.0	0	2.4	2.0
Jul	2.2	0	5.3	1.0
Aug	2.2	0	7.7	0.0
Sep	3.5	1.6	6.1	4.0
Oct	2.2	6.3	6.1	3.0
Nov	11.5	14.1	4.1	4.0
Dec	21.5	39.1	18.7	20.0
Total	100.0	100.0	100.0	100.0

TABLE 113
Perceived factors affecting price of fisheries products by respondents (%)

Perceived factors	Marketing agents					
	Fish farmers*	Fisherfolk	Wholesalers	Processors	Retailers	Large consumers
Seasonality	39.7	67.6	79.8	43.0	51.5	44.8
Weather condition	32.4	65.4	67.4	8.9	29.8	37.1
Market supply / Scarcity	21.8	55.1	40.7	2.7	6.5	6.7
Customers' preferences	44.1	39.5	35.1	8.9	9.2	6.7
Consumers' income	-	-	18.3	1.3	2.7	-
Trade relations	-	-	-	1.3	-	-
Intel price / Export	33.0	15.7	-	21.5	-	-
Others	19.6	-	4.5	2.5	0.4	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Figures as percentages of multiple response analysis.

TABLE 114
Average price (x 1 000 VND/kg) of important fish species

Species	Fish farmers	Fisherfolk	Wholesalers	Retailers	Processors
Dried fish	-	1.8	28.2	34.8	16.15
Dried squid and all	-	77.2	96.6	116.0	153.33
Fish sauce	-	-	6.0	8.9	6.81
Mackerel	-	20.9	23.7	27.6	43.67
Tuna (common)	-	6.9	8.4	9.9	-
Dried shrimp	-	-	69.2	131.4	-
Common carp	13.9	11.4	16.0	18.5	-
Snakehead	15.2	13.0	20.4	22.8	-
Grass carp and all	9.2	7.6	11.6	11.7	-
Scad	-	7.1	7.1	7.9	-
Pomfret	-	17.1	20.4	24.5	-
Anabas	11.0	11.0	-	20.0	-

indicated by approximately half of the fish farmers, the processors, retailers, and large consumers. After seasonality, weather conditions and market supply were also the major factors. The market supply refers to the supply of fisheries product in a specific area that can come from either internal or external sources, i.e. from neighbouring provinces or regions.

In 2001, prices of freshwater fish in regions around Hanoi city were lower due to the penetration of marine captured products brought either from coastal provinces in the

north such as Hai Phong or Quang Ninh or from the central or south of the country. Around one fifth of the fish farmers and fisherfolks (18.4 and 18.9 percent, respectively) indicated that quality of the products was also a major factor affecting price of fishery products. Therefore, it was necessary that producers take care of handling fisheries products after harvesting.

On the demand side, consumer preferences are perceived as the major factors affecting price by producers and wholesalers. Marketing agents do not consider consumers' income as important or that income level may affect consumption behaviour of the consumers. Moreover, the price of substitutes also affects the price of fisheries products as perceived by a significant group of wholesalers. Processors and the producers mention the international price of fisheries products as a factor since export was the key market for processors and exporters.

Market performance by marketing agents

Market performance of marketing agents can be measured either by actual prices of specific products at different stages of marketing or value-added gained by each marketing agent.

- *Prices of major fisheries products sold by marketing agents*

During the survey, average prices of major fisheries products in 2001 and at the time of the survey were gathered at each level of marketing channel. The changes in fisheries prices on the domestic market along the chain from the primary producers to the consumers are presented in Table 114.

TABLE 115
Fisheries gross output, gross income (VND x 1 000) by marketing agents

Items	Marketing agents					
	Fish farmers	Fisherfolk ¹	Wholesalers ²	Processors	Retailers ³	Large consumers ⁴
Gross output (GO)	207.92	69.39	283.86	87,116.45	20.26	94.57
Costs	129.88	44.50	257.49	80,415.17	16.20	75.78
Gross income	78.04	25.09	26.37	6,970.34	4.06	18.79
Gross income to GO ratio (%)	37.53	36.05	9.29	8.00	20.04	19.87

¹ Values as figures per trip

² Values as monthly figures on average

³ Values as monthly figures on average

⁴ Values as monthly figures on average

Table 114 shows a big difference in prices realized by different marketing agents. The prices obtained by producers like the fish farmers or fisherfolks were much lower than those charged by retailers to the final consumers. For popular freshwater species, the difference in price at farm level and retail level were from 27 percent up to more than 81 percent. The survey did not produce a coherent body of markets, which would be suitable for a detailed analysis of marketing margins and performance of operators, but it indicates a definite need for collecting comprehensive marketing information and its distribution.

- *Fisheries gross output, gross income*

Gross income and output ratios were calculated with a view to examining the performance of groups of marketing agents to analyse their productivity.

Table 115 shows that the processors produce the biggest gross output of more than VND 87 billion per year (mean), which was much higher than the figures for the other marketing agents.

The gross income of the processors was the biggest with nearly VND 7 billion on average for the year 2001. However, the gross income to gross output ratio was the lowest with only 8 percent, while the wholesalers, retailers and large consumers generate higher productivity with the ratio of 9.3, 20.0 and 20.0 percent, respectively.

Marketing deficiency: fisheries product detention

Fishery products are perishable, difficult to preserve in fresh form for a long time. It requires good handling practices in order to ensure that product's quality affects the price. Marketing deficiency refers to inability of handling the fisheries products properly and to meet customers' demand. Marketing deficiency often leads to large rate of discard at harvesting, low value products, or other losses during the marketing process.

The majority of the fish farmers and fisherfolks answered that they had not experienced any product detention. This indicates good handling capability at the producer level and production to demand, especially by the fish farmers. The processors for the export market often suffer due to detention because of quality problems, which requires sophisticated standards in terms of quality, packaging and hygienic practices.

TABLE 116
Percent of detention/rejection of products delivered

Frequency	Marketing agents				
	Fish farmers	Fisherfolk	Wholesalers	Processors	Retailers
Always	-	-	0.0	81.0	-
Most of the time	1.9	4.0	6.6	1.0	0.7
Sometimes	3.2	3.3	13.6	4.8	3.7
Rarely	13.8	14.4	79.8	13.3	5.5
None	81.0	78.5	-	-	90.1
Loss (VND x 1 000)	-	15 486.1	5 189.2	193 142.9	727.6

6. OPERATORS' PERCEPTIONS OF THE CURRENT FISH MARKETING SITUATION

6.1 Main difficulties faced

The responses to the question “what are the three main difficulties you have encountered in selling your catch”, show first that about half of the replies of the interviewed fisherfolk in the north indicate no such problems. However, low prices and fluctuation of prices are frequently mentioned as problems, more so in central and southern Viet Nam where lack of market information was seen as another major problem. The lacks of product collection services are referred to in central and southern Viet Nam whereas poor infrastructure was indicated in the centre and the north of the country.

Only a fifth of the replies of the aquaculturists indicate “no problems” (all in the north) whereas unstable and low prices are mentioned most frequently as the main problem in selling products along with lack of market information. To a lesser extent (one fifth to a third of the replies identify the limited number of buyers and no or low local demand as main obstacles. These are indicated somewhat more frequently in central Viet Nam than in the rest of the country.

Wholesalers in the north mention capital shortage, poor infrastructure and low selling prices as the main difficulties in current business: low selling prices, high prices of raw material and high competition are the main factors mentioned by the wholesalers in central Viet Nam and capital shortage, high competition, poor infrastructure and low selling prices by those in the south.

As the main difficulties in current business of the processors in the north are mentioned lack of markets for their products, high competition and shortage of capital; operators in the centre of the country refer to price fluctuation, unstable raw material supply and shortage of capital, those in the south to unstable raw material supply, price fluctuation and to a lesser extent to high competition and lack of output markets as main problems.

The difficulties identified by retailers are low selling prices, high prices of raw material, capital shortage and poor infrastructure in the north, high competition, low selling prices, high prices of raw material and capital shortage and natural disasters in the centre and high taxes and fees as well as capital shortage in the south. Almost half of the replies of the retailers in the south refer to high taxes and fees, but only one fifth in the north and one-third in the centre. Only just over 20 percent of the replies in the south identify low selling prices and high price of raw material as main difficulties. The replies of the retailers in the big cities identify low selling prices as the main problem in Hanoi (82 percent), but high competition (63 percent) in Danang and HCM City. Poor infrastructure was frequently mentioned in HCM City whereas high prices of raw material was the second factor mentioned in Hanoi and Danang. High taxes and fees are perceived as problems mainly in Danang (42 percent) and somewhat less in Hanoi (31 percent) and HCM City (28 percent).

For the institutional buyers the high prices of raw material appear to be the main concern (49 percent of the replies in the north and the south, but 77 percent in the centre), followed by high competition and inconvenient location. A substantive number of replies points to taxes and fees as difficulties (around 30 percent with some variation between north and south). A relatively high number of replies indicate unstable fish supply as a major problem in the centre (40 percent).

Summing up the main difficulties it may be concluded that the producers identify prices and lack of market information as the main obstacles preventing them from doing better business. Selling and purchasing prices combined with strong competition, capital shortage and poor infrastructure are the concerns most frequently mentioned by wholesalers; this was similar to the situation described by processors which however, also point to unstable raw material supply and lack of output markets. Prices and competition are negatively perceived factors by retailers, together with shortage of capital, too many taxes and poor infrastructure.

The complementary questions, “What are the three main expectations to improve your product marketing” (or “current business” in the case of the traders and processors)? show that fisherfolk counts very much on price and market information (three quarters of the replies, very high numbers in the centre and still above 50 percent in the north). Other improvements are expected from the establishment of fish collection services and fish wholesale markets as well as selling under contracts. The preferences expressed by aquaculturists follow a similar pattern; however, there was no mention of fish collection but the availability of suitable policy was expected by two thirds of replies.

Wholesalers indicate that they expect (or hope for) stable supplies to improve business and to a lesser extent that market information will help improving business, both in the order of magnitude of about two thirds of replies with differences between north (stronger on market information) and south (stronger on stability of supplies). Improvements of market infrastructure and facilities (wholesale markets and transport) are also mentioned by many with some higher emphasis in the north and the centre. Less than 10 percent expect a reduction in taxation or improved credit and capital situation as contributions to better business.

Stability of product markets and of raw material supplies are the main expectations of the processors for improving their business; there was a clear emphasis in favour of stable output markets in the north and centre and in favour of stable raw material supplies in the centre and the south. About 50 percent of the replies mention market information as expected improvement a level similar to having sufficient capital.

Over two thirds of the replies by retailers identify stable supplies as the main expectation for improving their business and more than half refer to market information; and almost half say they expect that product safety will improve. About one fifth of the replies express the expectation that fishery product information may become available, which would support traceability of the products. Technical improvements, for example fish wholesale markets and better transport, each appear in over 20 percent of the replies and both mentioned more frequently in the north than in the south of the country. Retailers operating in Hanoi and HCM City refer to improved transport more frequently than the regional average. Less than 10 percent of the retailers interviewed in the south mention that they expect an improvement of the credit and capital situation or a reduction of taxes and fees (no mention in the other regions).

Safety of products was the main improvement expected by institutional buyers, throughout all regions around 55.6 percent of replies. Stable supplies mention 22 percent in the north and 52 percent in the south as desirable to improve the business and with regard to new cooking techniques the differences are 62 percent in the south and 39 percent in the north. This contrasts with the need for market information for improving business which was mentioned in 47 percent of the interviews in the north and in 26 percent of those undertaken in the south.

On the whole, stability of supplies and technical and market information are the main aspects considered necessary for improving business of the operators.

6.2 Main factors for increasing profits

A specific question with regard to profits was addressed to fisherfolk, aquaculturists, retailers and institutional buyers. Aquaculturists were also asked to rank these factors. There are some small differences in the English version of the question which may be standardized as “What are the three most important factors that will increase your profits?” The question was put open-ended without suggestions for replies (as was the case in the questions analysed under chapter 5.1). The interviewer had three lines at disposal for filling in up to three options. Total possible replies were (number of interviews N+C+S) times three options:

Fisherfolk: $[61+59+125] \times 3 = 735$	Actual: $88+185+212 = 485$
Aquaculturists: $[120+60+131] \times 3 = 933$	Actual: $247+137+238 = 622$
Retailers: $[101+60+117] \times 3 = 834$	Actual: $150+113+168 = 431$
Institutional buyers: $[40+30+49] \times 3 = 357$	Actual: $78+54+103 = 235$
Total	1773

Fisherfolk interviews show high (above 50) mentions referring to product technology (higher value and quality products, product diversification and similar), reducing costs and increasing productivity, investment in boats and gear and stable or higher product prices as main factors for increasing profits. Stability of access to fishing grounds was indicated less frequently as are straight production increases. Improvements of marketing infrastructure and equipment were mentioned only in the centre and the south. It was important to note that about one-quarter of the nominations in the south indicate the need to reduce fuel prices as a major factor for increasing profits. Rather seldom were mentioned market information, tax reduction, export production and government support.

Summarizing the replies of the fisherfolk expects improvement of profits in the post-harvest area despite the 44 references in the south to the need for the reduction of the fuel price, which would reduce production costs.

The replies of the aquaculturists give a strong preference to improvements to be achieved in the sphere of production technology and costs which compared to the marketing and product factors mentioned amount to about double in numbers. This distribution was similar in all three regions. The replies relating to expected improvements in the financial area (capital, investment) was similar for fisherfolk and aquaculturists (60–70).

For retailers the main factors are stability of markets and prices which was comparable to the nomination of product quality criteria indicated; however there was a clear distinction between north and south with stability more frequently referred to in the north and product quality more in the south. Customer relations are mentioned slightly less frequent but again they are given more importance in the south. In addition there are a few references to reduction of costs in the north and to working capital needs in the south.

6.3 Priorities for improvement action

Each category of operators had been asked to answer an open question (without reply options indicated) regarding their intentions for action aiming at improving the current business (or to improve their marketing in the case of producers). The purpose of this question was to identify the awareness of operators, firstly, whether there were problems or need for action, and secondly, what they considered useful/necessary remedies in their specific economic and business situation.

The replies given by fisherfolk show a relatively high proportion of “no need”, “no idea” or no reply at all (97 of the 325 replies noted). The indications of concrete measures which are considered useful solutions for improving sales are largely in the marketing process and infrastructure field (137), followed by improvements in the production sphere (cost reduction, organization of catch collection and similar). Catch collection can of course also be considered a marketing function, which may be performed, by assembly traders or other pertinent arrangements. Increased consumption, credit facilities and government support are mentioned but at much lower frequencies (around 20 times each).

Do not know, no need or no reply was the reaction of about 20 percent of the aquaculturists reaching a quarter of the results in the north and the south respectively. Improvements of the marketing system, whether in marketing operations, infrastructure or information were the majority of the suggestions (262 of 507), followed by action

related to the production side (67, e.g. fingerlings). A smaller number mention government support (42) and a few point to credit and investment as bottlenecks in their situation (14).

In the view of the wholesalers, of which the majority does not provide any positive indication (236 of 373), also the marketing related solutions were the more prominent ones followed by interventions in the field of credit and investment (77 and 50, respectively). Only a few saw production as the solution to improve their current business (10) and none mention support from government.

The picture changes significantly in the replies of the processors. Out of the total of 133, 38 indicate that they had neither need nor knowledge on how to improve their current business, but a relatively high number mentioned production related measures (21) and 41 referred to marketing. Capital and investment were also more frequently referred to with a total of 33. Here it was noted that the latter was mentioned only twice in the north but 11 and 20 times in the central and southern regions of Viet Nam.

Also in the case of the retailers there was a high number of those which did not see a need or know or did not reply (252 of 402). Most of those who provided a positive suggestion point to marketing (88) followed by credit, capital and investment related aspects (45). Only a few saw a need for improvements on the purchasing side. None called for government support.

The replies of the institutional consumers (153 in total) referred mostly (82) to marketing improvement, including several to training of staff. No idea or no need was the reaction of 47 and investment (better premises) was proposed by 17. Very few pointed to action related to purchasing (4) and by government (3).

In conclusion, it was evident that a large proportion of the producers and of the operators or agents in the marketing system did not see a need to or knew how to improve their marketing or business in general; however those that saw limitations point to the marketing field. As may be expected, the production area was relatively important for the producers but does not reach the frequency of the references to the marketing aspects. It may be mentioned that for some groups, government intervention and support was important, but again to a lesser extent than other aspects. The importance of credit and investment related shortcomings varied between the groups and would seem to merit attention as well in a future program. Although the addition of the replies by the different categories cannot claim to present anything like a representative picture for the fish production and marketing sector in Viet Nam, it provided an indication of the relative importance of the various fields which were said to merit improvements. Marketing received 723 indications, production or purchasing 151, credit and investment 182 and government support and policy 60. It should be kept in mind as well that those interviewees which provided a positive or explicit reply could be expected to be more active or concerned about their own business and the needs and possibilities for improvement action than those which felt to be at a loss with the question. Perhaps an analysis of the exact meaning of question and answer in Vietnamese can provide additional insights.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

- i. Fish market operators are small-scale, basically organized at family household level. Fisherfolks, aquaculturalists, wholesalers, and retailers are the major operators in fish production and marketing. The majority of them are organized at family household level, except fish processors and exporters, which are more often organized as enterprises.

Fisherfolks and aquaculturalists are producing fish products for domestic consumption as well as export. The small scale, family household fisheries model was suitable at the early stage of the sector's development, but it may

not be suitable with processing fisheries industrialization and modernization. Moreover, fish product specialization was rather low, especially in the fishing sector. Only small portions of the producers are specialists (e.g. shrimp farming, squid or ocean tuna catching).

Fish wholesalers and retailers are in a similar situation. They are active market operators, but vulnerable. A large portion of the fish retailers are itinerant traders, basically without any permanent structure or equipment.

- ii. Almost all of the fish market traders, i.e. the fish wholesalers and retailers are not recognized formally in terms of title, place, and type of operations.

They have no specific right to fishery support services. No clear-cut responsibility for the traded fish products was taken by them. Mutual trust was largely the basis for their operation and product transaction.

- iii. Wholesalers play an important role in fish marketing and information dissemination.

The majority of fish products are sold from fish producers to fish wholesalers, who can be classified into four main types depending on their marketing functions: The first wholesalers, the intermediate, the last-stage, and the multifunctional wholesalers. The wholesalers are the main source of information for other market operators. Information of market prices, products, rules, regulations, and Government policies are also disseminated by the wholesalers.

- iv. Processors play important roles in absorbing products from fish producers, producing high value products, and drive export development.

The operation and existence of fish processors was seen as the output market of fish producers. In most of the regions where fish processors are located, aquaculture and fish capture was promoted. There was a correlation between fish processors and fish producers in the development process. All kinds of value-added and other high value products are produced by the fish processors, mostly for export.

- v. Domestic market was important for fisheries development, especially for the aquaculture sector.

Institutional consumption sector was developing and has become a major outlet for fishery products. High value products like lobster, mackerel, snapper, shrimp and squid are in strong demand by institutional consumers, an important consumption section of the industry because of their relatively stable consumption capacity. Consumption of fish products at household level was increasing. Fresh products are the most preferred form.

- vi. Various representatives of the public sector are participating in fish marketing. However, there was lack of coordination. A mechanism to promote fish marketing, particularly availability and consumption, for the domestic market should be created.

Fish producers need more guidance for active participation in the market. Fish consumers need more protection by ensuring quality, availability and wholesomeness of fish products.

- vii. Contract farming was the preferred cooperation mechanism between aquaculturalists and processors.

The mechanism creates a win-win scenario in which the aquaculturalists are assured to sell their products while the processors are assured of supplies of raw materials for processing.

- viii. The domestic market for fishery products was less dynamic than the export market.

Fish was consumed mostly in a short distance from production and landing, normally within the provincial boundary. Therefore, in provinces not close to the sea, it was difficult to buy fresh marine products for consumption.

- ix. Investment in fish marketing by fish market operators was rather limited.
The majority of the fish market operators do not engage in advertising, except fish processors and exporters. They hesitate to invest in equipment and facilities for storage, preservation and transportation.
- x. There are no assembly markets for fish products.
Along the coast of Viet Nam there are no assembly markets, but plenty of fish landing places and ports. Landings fluctuate causing frequent changes in price and quantity of supplies.
- xi. Fisheries development could create more jobs. Employment of women was higher in fish marketing than fish production.
Fisheries development creates jobs and generates income for a large proportion of the population. Employment of rural labourers may be permanent or seasonal. Women are not accepted on-board fishing vessels, but well recognized in areas such as financial management, processing, record keeping and trading.
- xii. Fish wholesalers and processors have a strong position in fish marketing.
The wholesalers and processors can buy from several fish suppliers and sell to customers at the same time. They are strong in the formation of fish purchasing and selling prices. Small groups of wholesalers and processors may have a large market share in the industry.
- xiii. Fish market prices fluctuate due to seasonality of production, changes in the international market and weather conditions.
The majority of fish market operators perceive that fish prices are high around the traditional New Year when fish consumption was high and fish supplies lower. International markets have a strong impact on fish supplies on the domestic market.
- xiv. It was attractive for newcomers to enter activities of fish production, retailing and catering, rather than wholesaling and processing.
Profitability (measured by gross income and cost ratio) of fish producers was high, followed by that of fish retailers and institutional consumers, then by that of fish wholesalers and processors.
- xv. Low output market price, price changes, lack of market information, shortage of capital, and poor infrastructure are major problems in fish marketing.
Low price and lack of market information are the main problems for fish producers. Price, competition, shortage of capital and poor infrastructure are the concerns of the fish wholesalers and processors who have additional problems of unstable raw material supply and lack of output market. Shortage of capital, too many taxes and poor infrastructure are problems faced by the fish retailers.
- xvi. Availability of price and market information, fish collection service, fish wholesale markets, stability of supplies, and sufficient capital are the main expectations of fish marketing agents as conditions for improving their operations.
Fisherfolks expect to have price and market information, fish collection services and fish wholesale markets available. Stable supplies and better market infrastructure and facilities are the concerns of fish wholesalers. Fish processors mention that stability of the product market and of raw material supplies, availability of market information and sufficient capital as their main problem. Stable supplies, product safety, availability of information, and technical improvement are the concerns of the fish retailers and institutional consumers.

7.2 Recommendations

- i. Improvement and expansion of fish market system (wholesaling and retailing) in large urban areas for all kind of fisheries products, both with regard to infrastructure and organization of operations.

- ii. Selection and improvement of landing sites functioning as assembly markets in principal fish landing areas and provision or improvement of facilities.
- iii. Development of a legal framework covering operations of the fish wholesalers at market places in terms of registration, regulation, legal status, responsibility and benefits.
- iv. Establishment of price information systems for fishery products in major landing and consumption areas in order to increase transparency and facilitate transactions.
 - v. Promotion of suitable contractual arrangements among fish market operators certified by local authorities or producer associations.
- vi. Improvement of fishery statistics systems for better fishery resources management, fish marketing management, and fish marketing planning.
- vii. Elaboration and implementation of a market development strategy for the domestic market, including transport, preservation and storage facilities and inputs, such as ice.
- viii. Training in pertinent aspects of marketing of products from fisheries and aquaculture for stakeholders and market operators.
- ix. Development of a coordination mechanism of the public sector in fish marketing and fish market management and supporting arrangement such as fish marketing information and quality enhancement systems.
- x. Formulation of a nationwide fish marketing development project with a specific orientation towards the supply of fishery products for large urban areas in the forthcoming five to ten years.