

# ***Vertical Cooperation and marketing efficiency in the aquaculture products marketing chain: a national perspective from Vietnam***

*By*

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## **1 Introduction and background**

This paper summarises some findings of the Fisheries Marketing and Credit in Vietnam project (MTF/VIE/025/MSC), which was active from October 2001 till May 2003. The project was a joint exercise of the Vietnamese Ministry of Fisheries (MOFI), the Fishery sector Programme Support of DANIDA (FSPS) and the Food and Agriculture Organisation of the United Nations (FAO). One of the subjects on which research was carried out by the project was vertical chain cooperation. Other subjects that received attention from the project were the following: fisheries<sup>1</sup> products marketing organization, domestic consumption of fishery products and the credit needs of and investment opportunities in fishery products marketing in Vietnam.

The research methodology used by the project involved desk studies and a large country-wide survey, including interviews with more than 1400 actors active in the fishery products chain. Moreover, around 600 people were interviewed in the street on their fish consumption behaviour. To fill any information gaps in-depth follow-up interviews were arranged with key actors in the chain. The data were collected in a total of 12 provinces (from north to south: Bac Can, Quang Ninh, Hanoi, Nghe An, Danang, Khanh Hoa, Dak Lak, Ho Chi Minh city, Ben Tre, An Giang, Kien Giang and Ca Mau). Data collection took place between February and June 2002 by staff of the National Economics University (Hanoi), University of Nha Trang and the University of Can Tho. A database was produced and analysis of the data was carried out between July and December 2002, after which the remaining project months were used for dissemination of the findings.

One of the reasons for this project was the rapid increase in fisheries production in Vietnam over the last decade which caused imperfections in the marketing of fishery products. Fishery product exports increased rapidly and reached 358 thousand MT in 2001, valued at US\$ 1 777 million, and thus providing a substantial contribution to the countries' total export earnings. Total fishery production was estimated around 2 226 thousand MT in 2001, which means that only 16% of the products is exported. The domestic consumption is thus of great importance to the fishery sector. Domestic fishery products consumption is increasing rapidly, as a result of an increasing population (80 million in 2002) and a rising per capita consumption (18 kg/capita in 2001). The growing concern of domestic consumers on the quality and freshness of the fishery products offered, the scarcity of supplies in some areas during certain months of the year, and the lack of information on the marketing of fish at producer level are main market imperfections that require "new" strategies to improve market efficiency. One of these strategies might be vertical chain cooperation.

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<sup>1</sup> Throughout the text, fisheries include aquaculture and culture based fisheries, unless this is specifically stated.

## 2. Marketing efficiency

The term marketing efficiency refers to the efficient allocation of resources to achieve the greatest possible consumer satisfaction. Some factors that affect the efficiency of markets are market control, externalities, and information. Market control at its turn refers to structure conduct and performance issues, while externalities (e.g. pollution or education) relate to the non market price incorporated costs and benefits and imperfect information to the access to and availability of market information such as price, supply, demand and quality information.

*Market structure* can be defined as the characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing behaviour within the market<sup>2</sup>. The situation at the consumer market for fishery products in Vietnam can generally be described as oligopolistic, as the number of sellers of products is not so large that individual contributions are negligible. Also in many of the other parts of the fishery products chain the number of sellers at local level is not that high that one could speak of perfect competition. Besides, the products sold are generally not completely homogenous (as quality and species differ), the market knowledge is imperfect and there are sometimes entry barriers.

Research by the project showed that horizontal market concentration is high among all actors in the aquaculture products marketing chain in Vietnam. Market shares found are, e.g. 79% for the highest quintile (the 20% largest aquaculturists) of aquaculturists and even over 80% for the highest quintiles of wholesalers and processors. In contrast, the lowest quintiles of these groups of actors (20% smallest actors) present market shares of less than 1%. This large concentration has, of course, its consequences for the level of competition.

Market entry barriers were not investigated in detail by the project, but it is clear that especially in the fields of aquaculture, capture fisheries and processing substantial capital investments are needed. For instance, many of the processing plants were equitized or are in the process of doing so. Those processing plants producing for the international market generally had to introduce measures to be able to get HACCP certification. Fisherfolk, dealing with over-exploited near-shore fishing areas frequently invested in off-shore vessels. Land and water bodies suitable for aquaculture became more gradually more expensive over the last years. Another entry barrier is the economies of scale related to many wholesale and processing activities which make that costs per unit are generally lower for larger firms.

*Market conduct* refers to the market coordination mechanisms and the pricing policies used by actors in the chain. In the Vietnamese fishery products chain one can distinguish some clear marketing channels. The channel from primary producer (fisherfolk/aquaculturist) via wholesaler to processor is used most frequently, indicating that wholesalers play an important role in the marketing channel. As far as pricing policies concern, the study found that negotiation between the actors in the chain is most common (over 40% of the cases) and that around 30% of the prices are set by looking at local market prices. In the remaining cases price setting is done by suppliers and/or buyers who make the decision for their business partners. Negotiation power does not seem to increase towards the higher levels in the chain. Nevertheless, the percentage of processors that perceive their negotiation power as great is larger than seen in other stages of the chain (e.g. middlepersons, aquaculturists, retailers).

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<sup>2</sup> Bain, J.S. Industrial Organization. 2<sup>nd</sup> edition, John Wiley and Sons, New York, USA, 1968.

The *market performance* of the actors in the Vietnamese fishery products marketing chain can be measured by their returns and their marketing margins. Not surprisingly the study showed that processors have generally much larger annual returns to investment in absolute terms than the other actors in the chain, however, processing companies are often much larger (having sometimes thousands of employees). Of the other actors in the chain aquaculturists generally have on average the largest returns on investment in absolute as well as relative terms. The study also showed that marketing margins for wholesalers and retailers are quite stable over time; less than half of them frequently changes product sales prices and market margins are generally calculated on base of the species and the product quality. For instance, the freshwater fish species marketing margin at wholesale and retail levels in inland provinces is generally between 1 000 and 3 000 VND/kg, which is currently between 0.06 and 0.19 US\$.

There is evidence that long run price integration exists in most fisheries and aquaculture products markets, however, local shortages or over-supplies will cause market prices in one place to differ in the short run from those in other places. Lack of and limited access to market and price information is considered as one of the mayor causes of price differentiation and especially primary producer level actors stress the need for more and accurate information. This brings us to the question of how to solve these gaps in price and market information.

Traditional channels for the provision of information used by public and private specialized marketing information agencies such as price outlooks, marketing magazines and other media (e.g. radio broadcasting of daily prices at markets), do not seem to supply aquaculturists and many other actors in the aquaculture products marketing chain with the information required. Most actors consider that market price, supply and demand information important, but at the same time they need information about product quality, preferred sizes and product forms, packaging, and other information that cannot be obtained through these traditional information channels. Vertical cooperation is widely regarded as having the intrinsic potential to provide all the information now being missed by the actors in the Vietnamese aquaculture products chain.

### 3. Vertical cooperation

Vertical cooperation is a concept that already as early as in the 1950s appeared in literature on the marketing of agricultural products. The overall objective of vertical cooperation in the marketing chain is obtaining a larger profit for the participants in this cooperation<sup>3</sup>. Other subordinate objectives may be for instance to increase market share, improve the image of the product, improve product quality and decrease the effects of market failures.

Before continuing it is important to note that vertical cooperation does in principle not imply any hierarchical relationship. It does not refer to administration of the fishery products chain. Instead, it refers to relationships between actors in the fishery products chain, such as wholesalers, processors and retailers (Figure 1).

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<sup>3</sup> Meulenbergh, M.T.G. and M. Kool. Chain marketing of agricultural products, Wageningen Agricultural University, Netherlands, 1994.

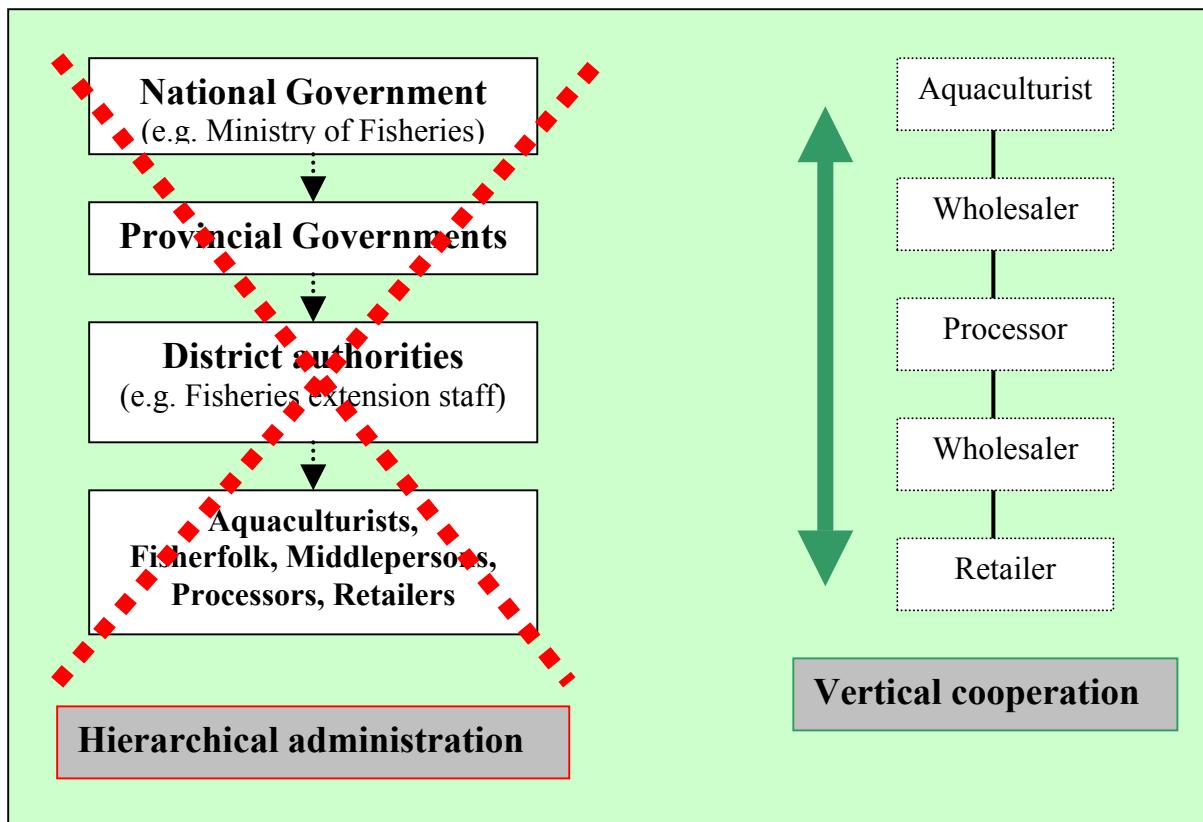


Figure 1: Hierarchical administration and vertical cooperation are different concepts.

The economic relations in the fishery products chain are mostly vertical (up- or downstream in the chain). However, also horizontal and diagonal relations exist that connect the chain with other chains (Figure 2). A generally used vertical chain is for instance: fish feed industry – aquaculturist – middleperson – fish processor – fish exporter – importer - wholesaler – retailer. Horizontal cooperation is often seen among fisherfolk and aquaculturists, who set up together cooperative style arrangements or establish associations. Examples of diagonal connections are common as well between chains for different products. One example of diagonal cooperation is for instance the use of chicken slaughter remains from the chicken processing industry as component in the catfish feed used by aquaculturists. Horizontal cooperation relationships can also exist with other product chains, such as between the aquaculture products chain and the chicken chain on issues as the provision of manure from the same level in the chicken (meat) chain to fertilise fishponds as is practiced in many VAC (fish/agriculture/livestock) production systems. Other connections exist with research institutes, fisherfolk and aquaculturists associations, banks, etc. Chains are not only connected with other chains but also with other parts of the wider environment (Figure 3). These connections can be considered as integrated part of the wider society (e.g. tax is derived from the sector and used for social services, infrastructure, etc.).

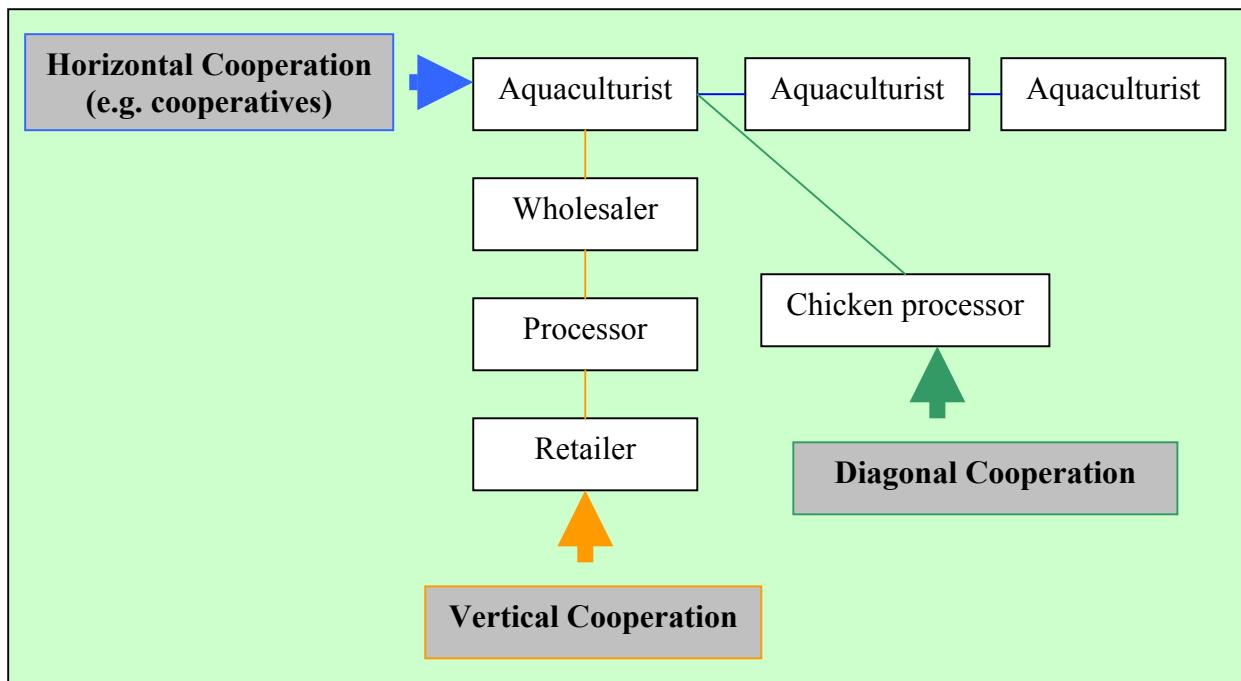


Figure 2: Examples of vertical, horizontal and diagonal cooperation

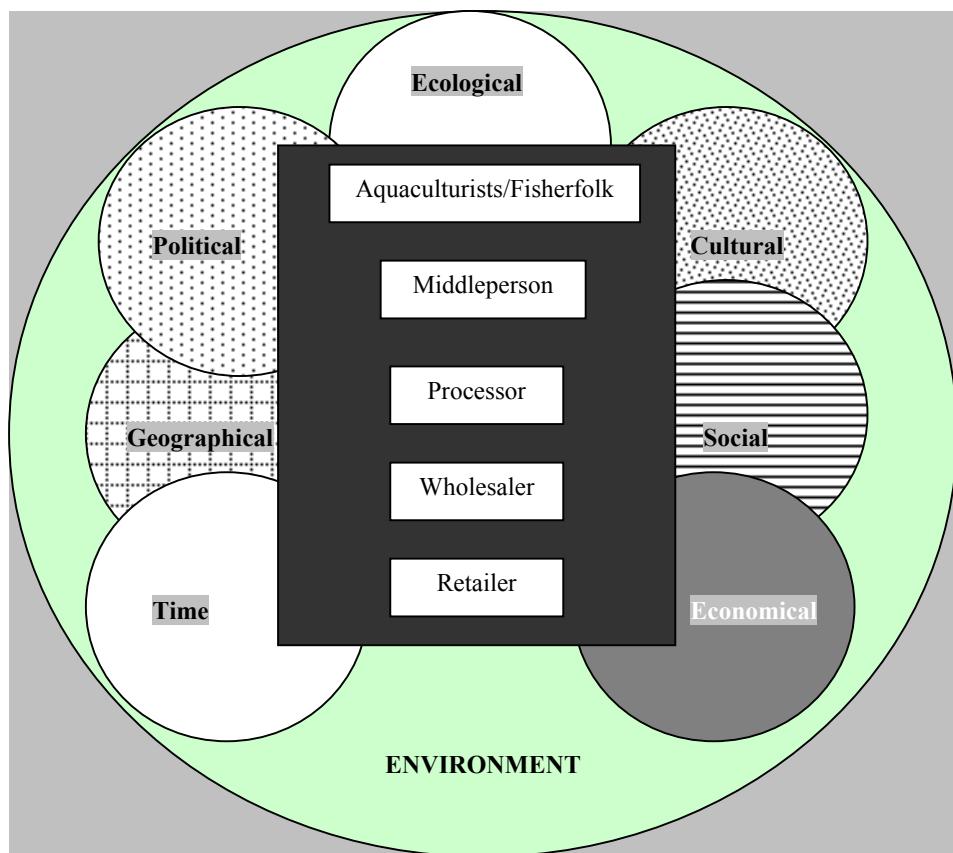


Figure 3: An example of a fishery products marketing chain with its environment

The type of produce of the fishery sector and the demands of the market towards the sector make it essential that cooperation between the various links in the fishery chain takes place. As in other agro-food businesses cooperation in the fishery products chain is highly relevant.

This is caused by the specific characteristics of the market and the production processes used, such as<sup>4</sup>:

- The perishability and shelf-life of the products,
- The variation in quality and quantity caused by genetic differences, seasons, climate, environmental pollution, handling, care for product, etc.,
- The variation in production process speed between the processing industry and the aquaculture production,
- The scale differences between the various link in the chain, that make vertical integration virtually impossible,
- The complementarities of the inputs, what makes it difficult to change the amounts supplied,
- The relatively stable demand and consumption of the produce, (fish consumption is slowly increasing world-wide)
- The increase in consumer consciousness with regard to the product and the production methods influence on health, safety, and the environment,
- The intrinsic quality of the fresh products which is highest at the moment of harvest,
- The need for capital and knowledge investment that creates some dependence.

Especially the perishability of the fishery products is demanding much of the storage, processing and transport in all links of the fishery products chain<sup>5</sup>. In addition the processing of fishery products for the international market is relatively capital demanding; therefore it is important that continuous supply is guaranteed. Differences in production speed make it difficult to gear to for the various links in the chain and the complementary of products makes it virtually impossible to produce exactly as much as is desired.

The dependency level between the various links in the fishery products chain is therefore relatively large. By working together it is possible to manufacture those products that are desired by the market, make agreements on their specifications and guarantee quality and quantity of the demanded products<sup>6</sup>. Transaction costs will be lower in comparison with transactions made via the market. By exchange of information the links in the chain can better anticipate on the demands set for the final products, e.g. in the field of availability.

Cooperation in the fishery products chain can improve the total performance of the chain, especially when taking into consideration the logistical costs, which in the fishery sector often are 50% or more of the total value added. In addition, cooperation in the chain can boost the product development, as information of the consumers' demands reaches the lower levels in the chain, and facilitate product differentiation. One can create a more flexible and efficient production process by working together.

Cooperation in the fishery products chain can be important in the light of current developments such: 1) the increasing consumer demands on aspects as healthiness, food safety, HACCP, environmental friendly production processes, biodiversity maintenance,

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<sup>4</sup> Den Ouden, M., Dijkhuizen, A.A., Huirne, R.B.M., and P.J.P. Zuurbier. Vertical cooperation in agricultural production marketing chains, with special reference to product differentiation in pork. Agribusiness, Vol. 12, No.3, 277-290, 1996.

<sup>5</sup> Zuurbier, P.J.P., Trienekens, J.H. and G.W. Ziggers. Vertical cooperation a stepwise approach for chain formation in food and agribusiness. Kluwer bedrijfsinformatie, Deventer, Netherlands, 1996. (in Dutch)

<sup>6</sup> idem.

animal welfare, traceability and compliance with international labour laws; 2) Rapid technology developments in the fields of products, production processes (e.g. Individual Quick Frozen) and information exchange (e.g. new information and telecommunication technologies); 3) Increasing capital needs in production (flow freezers and IQF, HACCP) and product research and development; 4) Increasing diversification in fisheries and aquaculture products and species through value addition and use of exotic species in aquaculture; 4) Increasing international competition caused by satisfied markets and trade liberalisation; 5) High risks (e.g. in view of possible detentions of products in the EU or the USA related to for instance *chloramphenicols*); and 6) High mutual dependency (related to the specific characteristics of the fisheries and aquaculture products).

#### 4. Current problems

The above listed issues were similar to those that were brought forward by the actors in the Vietnamese fishery products marketing chain when they were asked about their “main problems encountered in the marketing of their products”. For instance, 41% of the interviewed aquaculturists stressed the low prices, while 36% mentioned the unstable product prices as main problems and 8% considered the lack of market and price information as big problems. Fish processors stressed the same difficulties in the marketing of their products. Thirty-five percent responded that price fluctuation was their main problem, while 22% stressed the unstable supply (thus implicitly their dependency) and another 22% referred to the high levels of competition as the main trade related problems. Following aquaculturists and processors, also the wholesalers considered low prices for their products, high competition and capital shortage for improvement of their trade as the biggest problems.

#### 5. Current cooperation practices

Companies and individuals currently active in the Vietnamese fishery products chain generally intend to establish and maintain *long term relationships* with their business partners. A plain 92% of the more than 1300 people interviewed on this matter prefer long term relationships over short term market exchange contacts. No significant differences between the northern, central and southern parts of Vietnam could be found as far as commitment to maintaining long term relationships. Considering the various actors in the fishery products chain it appeared that wholesalers are most eager to maintain long term relationships (98% responded positively) and aquaculturists and fisherfolk were least eager with still respectively 87% and 86% of them saying they intend to maintain long term relationships. Aquaculturists

Before going into detail on the reasons behind preferring long term business relationships over short term market exchange contacts it is necessary to get an idea of what activities are currently carried out jointly. *Market information exchange* is considered important in business relationships and therefore more than three-quarters of the actors interviewed exchange information on markets with their suppliers, buyers or with both. Of the fish processors even 98% of the respondents in the study mentioned that they exchange market information. Aquaculturists appear to be a bit less involved in exchange of market information. However, still some 76% does exchange this type of information (see annex A for details).

Many actors involved in the fishery products marketing chain jointly carry out activities in the field of *handling and grading of products* with their suppliers and buyers. Thirty-eight

percent of the aquaculturists often do this kind of work jointly with the buyers of their products. As they are primary producers they have fewer responsibilities in this field on the supply side. Fish processors are the most cooperative on this aspect as more than 96% of the fish processors is involved in joint handling and grading of the products.

**Storage and transport** of fishery products is generally seen as a typical wholesale functions. However, most of the wholesalers do not carry out part of their activities in the field of storage and transport alone, but together with their business partners. Ninety-three percent of the wholesalers said they store and transport in cooperation with their business partners. In contrast, only 12% of the retailers and 6% of the processors cooperate with their suppliers in the field of transport and storage. These figures seem to contradict each other, as wholesalers, processors and retailers have direct links and therefore should show less difference here. The difference also reveals that cooperation can be regarded differently, depending on the extent of activities carried out and the importance attached to these.

On the aspect of **exchange of technical instructions** and provision of advice on technical issues it was found that wholesalers play an important role in this activity. Ninety percent of the wholesalers responded to be involved in some kind of exchange of technical instructions & advice. In contrast, only 13% of the aquaculturists are involved in the exchange of such information with the buyers of their products. Thus although 35% of the processors and 84% of the wholesalers say they are exchanging technical instructions and advice with their suppliers the perception of the primary producers (who are their main suppliers) is completely different. The latter might mean that the primary producers do not regard the information provided by the buyers as useful, or that the quantity of information provided is not considered significant. In both cases there is a gap, which should be addressed by buyers as well as suppliers.

**Credit** is another issue that plays an important role in the Vietnamese fishery products chain. A large percentage of aquaculturists (27%) have credit arrangements with their suppliers and/or buyers. This credit, which is often received from their suppliers, is mainly provided in kind in the form of fish fingerlings or post larvae (in the case of shrimp). It is to be repaid generally at the time of harvest; thus the credit is a kind of delayed payment to the suppliers. A significant percentage (19%) of the fishery products retailers receive or obtain credit from their suppliers. It is fairly common that retailers only pay for the products supplied by the wholesalers when they are sold to their customers; this means that the suppliers get paid the next time they deliver products to the retailers.

## 6. Motives in favour of and against vertical cooperation

The interviewed fishery products marketing chain actors were asked to mark the three main benefits of long term relationships with their business partners. Table 1 shows that the majority considers the improvement in their business relationship and the increased access to market information as main reasons for being involved in long term relationships. The general importance given to an issue like cost reduction is understandable as well. Remarkable is that access to product quality information and information on quality requirements is considered a main benefit by aquaculturists, wholesalers, processors and retailers of having a long term relationship, while only 9% of the fisherfolk does so. Risk reduction on the other hand is seen by fisherfolk as a very important benefit of long term relationships with suppliers and buyers.

Table 1. Percentage of respondents per stage in the fishery products chain that considers below benefits as being among of the 3 major benefits of long term vertical relationships.

	Aquaculturists	Fisherfolk	Wholesalers	Processors	Retailers
1) Improvement of the existing inter-dependency relationship, with regard to technical information, continuity in supply, financial and social aspects	61	72	56	49	59
2) Increase in access to market information	50	47	51	61	45
3) Reduction in costs related to transaction, negotiation, time and labour	47	55	53	48	32
4) Increase in access to product quality information/requirements	44	9	48	44	46
5) Risk reduction including sharing of risks related to quality of the product, food safety and securing demand and supply	9	36	25	19	32
6) Increase in access to credit	28	29	13	7	8

Reasons for not getting involved in long term relationships were the following: 1) a preference of being independent and not wanting to get involved in any dependency relationship, 2) an expected lack of benefits resulting from long term relationships, and 3) the fact that maintaining such a relationship can be time consuming.

## 7. Vital issues for and obstacles to cooperation

In the establishment and maintenance of vertical cooperation realtionships in the fishery products chain a number of issues is important. Respondents were asked to mark the three issues they consider most vital in making vertical cooperation successful. Table 2 shows that fair and clear financial accounting of the partners in the chain and responsible behaviour of these partners are considered very important. Related to the issue of “good reputation and responsible behaviour” it is noteworthy that much emphasis is given to trust. Actors in the fishery products marketing chain search for relationships with other actors who they can trust, especially in terms of supplying good quality products. The latter is extremely important for retailers, processors and wholesalers as their prestige is linked to the stable quality of their products and any failure to deliver the demanded quality has its impact on the level of trust. Suppliers generally are eager to take back products delivered that are of bad quality; this to keep the relationship with their buyers good.

Almost as important as the above discussed points is the timely payment for the services and goods delivered. The results here might indicate a problem with current behaviour of the partners in the chain especially in the field of fair accounting and timely payment. Table 2 also shows that partners in vertical cooperation consider the provision of mutual financial assistance as important. About a quarter of the processors consider the use of clear contracts and agreements vital, while other chain partners give less priority to this. The latter can lead to problems, as some want to use contracts and others might refuse to do so.

Table 2. Percentage of respondents per stage in the fishery products chain that considers below issues as being among of the 3 most vital issues for making vertical cooperation in the chain successful.

	Aquaculturists	Fisherfolk	Wholesalers	Processors	Retailers
1) Fair and clear financial accounting	88	83	86	85	78
2) Good reputation and responsible behaviour of chain partners	81	85	86	93	78
3) Timely payment of debts/ quick payments for services delivered	80	72	80	74	75
4) Provision of mutual financial assistance whenever needed	24	28	17	11	32
5) Having well defined problem solving arrangements	13	16	15	10	8
6) Use of clear contracts and agreements	11	10	10	26	8

Obstacles on the road to the establishment and maintenance of vertical cooperation relationships in the fishery products chain were investigated as well. The main obstacle identified was the unclear identification of costs and benefits for each partner and delays in payment. Other less mentioned obstacles were the insufficient risks and information sharing, too much trust in the friendship relationship and underestimation of the necessary changes to be made for good cooperation.

## 8. Vertical cooperation and leadership

As far as the identification of leadership in the chain concerns, it is common practice to look at the price setting mechanism. The current situation in the fishery products marketing chain in Vietnam shows that most of the price setting is carried out by negotiation (around 40% of the cases). At retail, processor and wholesaler levels price setting by negotiation is practiced most. Current market prices are also used as base for price setting between various actors in the chain; around one-third of the price setting decision taking is made based upon market prices. At primary producer level, it is fairly common that decision on prices is made by the buyer only. This indicates that market power is a bit lower at the primary producer level than at the higher levels.

This finding was further confirmed by the “perceived dependency on others in the chain” investigated during the study (Figure 4). This showed that fisherfolk feel themselves significantly more dependent on other actors in the chain than those other actors. Thirty-eight percent of the fisherfolk consider themselves highly dependent, while of the processors only two percent does so. Again this indicates that higher levels in the chain, especially processors and retailers, are less dependent and might be considered as relatively more powerful.

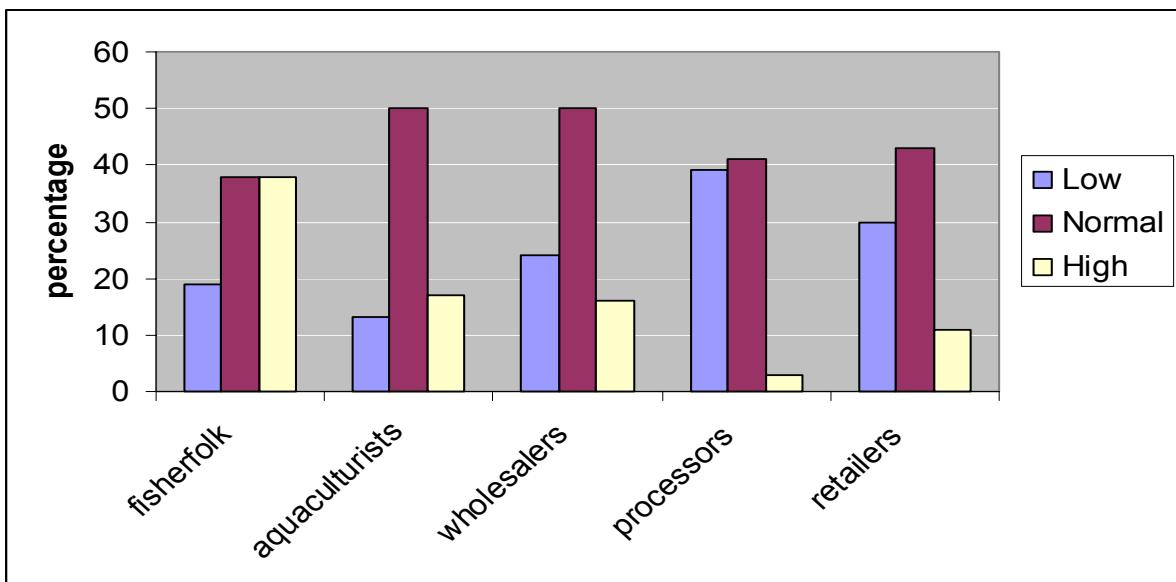


Figure 4: Dependency levels as experienced by actors in the fishery products chain.

Although vertical chain cooperation does not necessarily have to change the power structure in the chain, it often does. This will largely depend on who will take the lead in initiating new initiatives in this field, who will join and who not, and to what extent cooperation is sought. Chain leadership will bring responsibilities and plights next to advantages; issues as power and levels of investments in the cooperation are to be taken into consideration. Due to the requirements for communication (time, manpower and money) it is often considered suitable that larger sized actors (such as processors, wholesalers and retailers) take the initiative of starting vertical cooperation.

## 9. A preliminary framework model for vertical cooperation

The above has taught us that vertical cooperation is an approach practiced already, but to a limited extent. It was also shown that such cooperation should be increased considerably to enable solving the existing market failures and that there are some obstacles to get over. To provide some more clarity on the positive as well as the negative variables affecting vertical cooperation relationships and show interested stakeholders the opportunities for improvement and constraints to be dealt with in the development of vertical chain cooperation relationships in the Vietnamese fisheries products marketing chain an effort was made to produce a preliminary framework model. Through factor analysis of the variables found to be affecting vertical cooperation relationships it was discovered that the main reasons of the actors in the Vietnamese fishery products marketing chain for getting involved in vertical cooperation were related to increasing reliability of supply and demand, responsibility, sharing risks, improving the marketing process, increase financial, information and marketing linkages, improve product and services quality, reduce costs and increase the focus on the consumer demands (Figure 5)<sup>7</sup>. By arguing that vertical cooperation can be characterized by variables such as an increase in the exchange of marketing and technical information, preferences for long term relationships, use of oral agreements and contracts, trust and loyalty, financial support and

<sup>7</sup> Van Anrooy, R.E. Vertical cooperation: opportunities for chain marketing in the Vietnamese fishery sector. Madison University, USA, 2003.

joint handling and grading of products<sup>8</sup> it was found that processors and wholesalers were on average more involved in vertical cooperation than aquaculturists and retailers<sup>7</sup>. It should be noted however that some of these variables are inter-related. For instance, the intention to get involved in long term relationships is sometimes expressed in agreements and contracts, or the existence of trust and loyalty between partners makes it more likely that they provide financial support to each other. However, as discussed before, trust and loyalty were also considered a danger: too much trust could influence long term relationships negatively. Reasons for not becoming involved in vertical cooperation and obstacles to the establishment of vertical cooperation identified are among others issues such as fear for dependency, time constraints, delays in payment, low expectation of benefits and large necessary changes. These can be considered constraints.

Although no quantifiable data were collected on the issue of uncertainty, some in-depth interviews showed that uncertainty plays an important role. Uncertainty about the supply or demand for the fishery products and about (re-)payments is a major factor being taken into account when actors in the fishery products chain think about vertical cooperation. On one hand, uncertainty can be decreased by using contracts, exchanging information etc.; thus by vertical cooperation. On the other hand, uncertainty does not disappear under vertical cooperation relationships, as product prices for instance are not fully determined by the relationship and the risks that partners in the relationship cheat or fail to deliver continues to exist. Moreover, the outside environment of the chain, being dynamic as well, continues to produce challenges and related uncertainties. Therefore, both trust and uncertainty get next to a positive sign also a negative sign. Entering all the earlier discussed relationships in a preliminary framework it could look like the figure below.

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<sup>8</sup> Two references are most relevant here: a) Wysocki, A.F. Determinants of firm level coordination strategy in a changing agri-food system. Michigan State University, 1999; & b) Zaheer, A, McEvily, B. & V. Perrone. Does trust matter? Exploring the effects of inter-organizational and interpersonal trust on performance. *Organizational Science*, Vol. 9, No. 2, 1998.

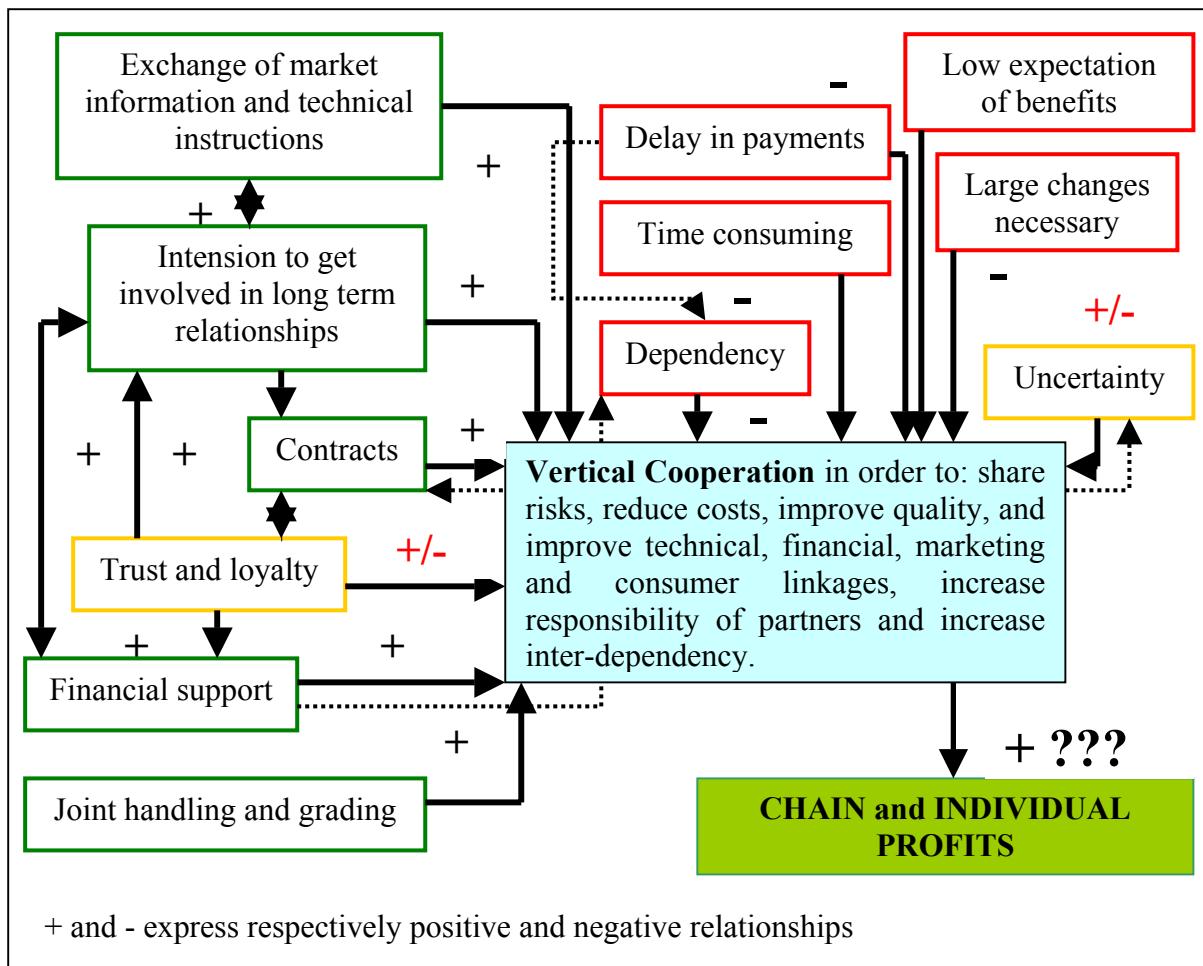


Figure 5. Preliminary framework model for vertical cooperation relationships.

## 10. Some conclusions

1. Ninety-two percent of the actors in the fishery products marketing chain prefer long term relationships with their business partners over having just market exchange contacts.
2. This preference for long term relationships is reflected by the large percentages of actors that are involved in e.g. market information exchange, joint handling and grading of products, joint arrangement of storage and transport and exchange of technical instructions.
3. The quality and quantity of the activities carried out jointly does not address the specific needs of the actors in the chain sufficiently; causing correctable market inefficiencies to continue to exist. This was conveyed by the fact that low product prices, high competition, lack of market information and unstable supply of products were listed among the main problems of the actors in the chain.
4. The main reasons for involvement in vertical cooperation are the expected possibilities of improvement in the inter dependency-relationships (with regard to technical

information, stable supplies and financial and social aspects) with the other actors in the chain and the increased access to market information such a cooperation would bring. Other benefits are generally expected in the fields of cost reduction (transaction costs, time and labour), access to product quality information and technical requirements, addressing consumer demands better, reducing and sharing of risks and increasing access to credit.

5. Chain actors stressed the importance of fair and clear financial accounting, responsible behaviour of their partners and timely payment for services and goods delivered as vital issues to make vertical cooperation successful. On the other hand, the main constraints to establishing vertical cooperation are seen in unclear identification of costs and benefits to each of the partners involved, delays in payment and insufficient risks and information sharing.
6. The conditions for increasing vertical chain cooperation in the Vietnamese fishery products chain are available. There appears to be a general desire to increase cooperation in many aspects. The fact that vertical cooperation seems to be able to contribute to decreasing the most common marketing inefficiencies and can assist to grab the opportunities for improvement identified makes it a valuable tool in the further development of the Vietnamese fishery sector.
7. During the preparation of the preliminary framework model for vertical cooperation in the Vietnamese fishery products chain it was found that the potential benefits of vertical chain cooperation with respect to increasing the traceability of fishery products back to their source have not been sufficiently investigated yet. The same can be said about vertical chain cooperation' potential contribution in the development and implementation of Codes of Good Practice. A detailed analysis of the opportunities of vertical chain cooperation in these areas should be one of the priorities for future research on this issue.

## Annex A

Activities that are currently carried out with suppliers and buyers (in percentages):

### Aquaculturists (N= 311)

Activity	with supplier only	with buyer only	with both	with none
1) marketing information exchange	6	30	40	24
2) handling and grading of products	3	32	0	65
3) agreement to buy products	1	34	3	62
4) credit supply/receipt (in cash or kind)	23	4	4	69
5) technical instructions/advise provision	26	5	5	64
6) advanced money supply	5	10	3	82

### Fisherfolk (N=245)

Activity	with supplier only	with buyer only	with both	with none
1) marketing information exchange	3	40	46	11
2) handling and grading of products	1	34	4	61
3) credit receipt (in kind)	46	16	7	31
4) credit receipt (in cash)	11	18	6	65
5) technical instructions/advise provision	4	5	3	88

### Wholesalers (N=362)

Activity	with supplier only	with buyer only	with both	with none
1) exchange of marketing information	8	10	74	8
2) handling and grading of products	16	22	40	22
3) storage and transport	7	8	78	7
4) supply of credit	10	9	8	73
5) exchange of technical instruction/advise	8	6	76	10

### Processors (N=108)

Activity	with supplier only	with buyer only	with both	with none
1) marketing information exchange	6	14	78	2
2) handling and grading of products	16	20	60	4
3) storage and transport	6	13	6	75
4) credit supply/receipt (in cash or kind)	6	7	4	83
5) technical instructions/advise provision	23	18	12	47

### Retailers (N=278)

Activity	with supplier only	with buyer only	with both	with none
1) exchange of marketing information	14	11	60	15
2) handling and grading of products	11	25	42	22
3) storage and transport	12	3	5	80
4) supply of credit	15	3	4	78
5) exchange of technical instruction/advise	16	8	8	68