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Facilitation of the market for Business Development Services to overcome difficulties of the Pangasius fish farmers in An Giang province, Vietnam

gtz

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Executive Summary

For three reasons aquaculture products are important for developing countries: they contribute heavily to export income, generate employment and are of high nutritional value. Fuelled by a growing global demand for fish, the significance of fishery products in general and aquaculture in particular has therefore grown considerably over the past decades and will continue to grow in the future. This is true of Vietnam in general and An Giang province, in particular: this province has the highest production of freshwater aquaculture products in the country. The aquaculture sector is growing and so is its economic importance.

GTZ's SME Promotion Programme assists local small and medium enterprises (SMEs) to benefit from the growing aquaculture sector in a sustainable way. One of the Programmes objectives in An Giang province is to improve the provision of Business Development Services (BDS) to SMEs in the aquaculture sector. The rationale behind this approach is to increase their business capacities in areas such as production technology, marketing and access to international markets. Against the background of designing interventions to improve the functioning of the BDS market in An Giang, the study had the following objectives:

- Identify difficulties of fish farmers and processors and their experience with BDS
- Identify the role of food safety and quality standards
- Assess shortcomings of the current BDS market
- Recommend interventions to improve BDS provision

Problems of fish farmers and processors

Fish farmers and processors both expressed problems regarding the quality of their products and marketing or market access. Problems in finding new customers and determining the requirements of potential customers were mentioned – only the perspectives were different. Fish farmers had difficulties selling their fish to local processing companies whereas processors were trying to conform to the requirements of overseas customers. In this regard they especially mentioned shortcomings in product design and trademark building. Both groups of interviewees were equally concerned about the quality of their respective end products. Fish farmers were often unable to sell their produce due to wrong size or contamination with antibiotics. Processors expressed their concerns regarding the growing quality requirements of international customers, which are reflected by growing standard requirements.

Experience with Business Development Services

Fish farmers and processors were equally interested in BDS as a means to overcome current problems. However, their experience with BDS is limited in most cases. Current experience of fish farmers and processors is characterised by the following features:

- Fish farmers have a low awareness of BDS
- Fish farmers mostly receive embedded BDS
- Fish farmers are often not satisfied with delivered BDS
- Fish farmers have little experience with BDS which are not embedded
- Fish farmers commonly receive informal BDS
- Processors do have a basic understanding of BDS

- Processors are important BDS providers, especially to the fish farmers

Use of food safety and quality standards

Production by fish farmers was not oriented towards food safety and quality standards. By contrast, processors implemented various standards to meet customer demands and/or import requirements of overseas markets. Both were well aware of the significance of food safety issues in overseas markets and expressed their interest in implementing up-to-date protocols.

Shortcomings of the market for Business Development Services

In An Giang, a functioning commercial BDS market does not exist at the moment. The market environment causes an insufficient flow of information, which prevents players from identifying market opportunities and actively exploiting them – both on the demand and the supply side. This is reflected by generally low BDS use, low awareness of BDS and low satisfaction with BDS received by the fish farmers.

Although somewhat limited, the BDS market in An Giang does provide some opportunities. A foundation for BDS provision exists in An Giang, which makes interventions aiming to improve the current situation worthwhile. Furthermore, there is an unmet demand for BDS due to a lack of services, inappropriate services or lack of information on existing services. This is reflected by the stakeholders' interests in BDS to overcome current problems.

Facilitation of the market for Business Development Services

Interventions to facilitate demand. To exploit the demand potential of fish farmers it is necessary to raise their awareness of BDS and to tackle their reasons for not using assistance services at the moment. Measures to raise basic awareness of BDS have to provide information on the concept of assistance services. Fish farmers have to understand the benefits and advantages connected to external support.

Processors need more detailed information on available BDS although they already have a basic understanding of BDS. In the short term, interventions should focus on linking processors with already existing services. For example, the Programme could distribute data on BDS providers through magazines, internet portals or radio programmes. Business-to-business trade fairs are another option to establish a link between existing BDS providers and customers. However, the Programme has to take into consideration the existing tendency to solve problems internally and to abstain from purchasing external BDS. More research is needed clearly to assess the implications of this phenomenon on the processors' BDS demand in the long term.

Interventions to facilitate supply. In An Giang, the quality of existing BDS has to be improved, BDS have to be tailored to the specific customer needs and BDS supply has to be increased. In the short term, and to achieve noticeable progress regarding the development of the BDS market, programme interventions should focus on key service providers such as governmental institutions, processors and informal providers. In the long term, however, the Programme has to make sure that new providers enter the market in An Giang.

In the short term, programme interventions should incorporate key BDS providers in the process of assessing service demand of potential customers. This creates interest in offering BDS, indicates existing shortcomings of offered services and motivates providers to make appropriate modifications to provided services. Gathered information on the BDS market should be distributed to other stakeholders which are not actively involved in the Pangasius value chain but still represent potential BDS providers. Providers have to be supported by training activities and technical assistance to enable them to modify existing products or design new products, according to demand requirements. Besides technical training, providers have to increase their knowledge about the latest production standards and market trends.

In the long term, alternative service providers should be introduced to the BDS market in An Giang. The Programme has to assist interested providers to extend their regional coverage to An Giang – for example from HCMC or Can Tho. Furthermore, it has to provide guidance to entrepreneurs, who are motivated to start a business providing BDS. Seminars on business start-ups, technical training and support in designing appropriate service products, tailored to the needs of targeted customers, are vital in this regard.

A case for active involvement in the market

Direct BDS provision or funding is inevitable. Facilitating demand and supply will not be sufficient to achieve substantial BDS market improvements – at least in the short term. Basic awareness raising for fish farmers and establishing a link between farmers and processors are necessary to facilitate BDS demand. So are joint market assessments and subsequent training initiatives to improve service supply. However, due to the weak market environment evident in An Giang, it is unrealistic to expect these services to be provided on a solely commercial and market-based basis in the short term.

The Programme should actively engage in promoting food safety and quality management standards along the Pangasius value chain. The fish farmers and processors have to reliably improve product quality to access profitable domestic or international markets. Compliance to food safety standards would guarantee that chemicals and antibiotics are avoided throughout the production process. Furthermore, standard compliance would signal improved quality levels to potential customers, which is likely to create better market access and turnover.

1 Introduction and background

Amongst other interventions, GTZ's Hanoi-based SME Promotion Programme aims to increase the competitiveness of selected sub-sectors of small and medium enterprises (SMEs) by strengthening relevant Business Development Services (BDS). Benefits of the sub-sector's SMEs are increased business capacity, improved access to local and international markets, higher output and more value added locally and/or higher income.

The rationale behind this approach is the conviction that the promotion of functioning BDS markets is the best way to guarantee that SMEs receive the services they need in order to reach key business objectives - such as increased market share or turnover. Moreover, due to employment and income generating effects, private sector development in general and SME development in particular contribute strongly to poverty reduction. In Vietnam, GTZ's activities are tailored to exploit this potential of the private sector.

The Programme commissioned a research study in 2002 so as to gain insights into the Vietnamese BDS market and to better prepare future activities. Although providing detailed information on the BDS market for Vietnam as a whole, and with specific analyses in several selected provinces, the study concluded that "further research [...] will probably focus on particular areas, enterprises sectors or business services." (Miehlbradt, 2002: 7). The reasons are differing levels of BDS market development in different areas: the differences between economic centres such as Hanoi or Ho Chi Minh City and rural provinces were especially mentioned in this regard.

In view of the need to assess each regional context carefully and individually, and to avoid one-fits-all solutions, the Programme commissioned the current study to obtain an overview of the BDS market in An Giang province. The sub-sector selected for promotion is the Pangasius value chain. Pangasius is a catfish farmed by aquaculture, which accounts for a large share of the provincial export revenues and still offers unexploited growth potential. Focussing on the Pangasius value chain in An Giang, the study had the following objectives:

- Identify difficulties of fish farmers and processors and their experience with BDS
- Identify the role of food safety and quality standards
- Assess shortcomings of the current BDS market
- Recommend interventions to improve BDS provision

Background and context of the research

An Giang province is located in the Mekong Delta in southern Vietnam. It is situated along the Bassac or Hau River, which is one of the two branches of the Mekong River that divide after the river crosses the border from Cambodia into Vietnam. Of the 13 provinces in the Mekong Delta, An Giang is the fourth biggest by size and with 2,2 million inhabitants is the most populated. (Statistical Yearbook of An Giang Province, 2004: 265)

Because An Giang is located in the lowlands of the Mekong River and because of its tropical climate, it is affected by floods during the rainy season every year. The rainy season lasts from June until October. The hottest months of the year are just before this period with average temperatures between 30 and 38°C, depending on location and altitude. (MRC, 2003: 3-4)

Poverty situation in An Giang province

Throughout the Mekong Delta and in An Giang, key socio-economic indicators show positive trends in recent years. Nevertheless, there are still disparities between various groups within society. Between 1998 and 2002 the share of people living below the poverty line of 2 million Dong (125 USD) per household per month in the Delta region decreased by 14 percentage points from 37% to 23%. This represents twice the rate of decrease compared to the national average. Similarly, the share of households suffering from food poverty, as defined by an income of 1,4 million Dong (88 USD) per household per month, decreased from 11.3% to 6.5% during the same period. (UNDP, 2004: 24)

But some disparities are masked by these overall trends. A significant difference between the rural and urban population remains. In urban areas the numbers of households in poverty decreased more than in rural areas of the Mekong Delta. In 2002 some 8% of the total urban population lived below the poverty line, in comparison with 15% in 1998. The comparative figures for the rural parts of the Delta were 27% in 2002 and 42% in 1998. These figures indicate that poverty is a rural phenomenon in the Mekong Delta with 96% of all poor people living in rural areas. (UNDP, 2004: 25)

Members of ethnic minorities are more poverty prone and at the same time benefit less from poverty reduction trends. In 2002, 52% of all ethnic minority people lived below the poverty line, compared with 58% in 1998. The comparative figures for the native Vietnamese population for the same period are 21% and 35%, respectively. Trends in food poverty show even bigger disparities. The 10% decrease to 22.6% among the ethnic minorities is low compared with the 50% decrease enjoyed by native Vietnamese people, among whom only 5% suffered from food poverty in 2002. (UNDP, 2004: 27)

In addition to a higher share of poor people in rural areas and among ethnic minorities, people with a low level of education are more likely to suffer from poverty. While poverty is almost non-existent among people who have completed secondary education or vocational training, 30% of the population who have not completed primary education live in poverty. As a consequence people who did not complete primary education account for 67% of the poor in the Mekong Delta. In 2002, 6% of the total population between 15 and 24 years of age in the Delta were illiterate – higher than the national average. Furthermore, school enrolment rates were lower than in almost all of the rest of Vietnam: the Mekong Delta ranks last but one out of the 8 Vietnamese regions. (UNDP, 2004: 34-35)

A study of the Mekong River Commission (2003: 14) summarised the above by concluding that poverty in the Mekong Delta is characterised by food shortages, landlessness, a lack of sufficient and productive land, a lack of agricultural inputs such as irrigation, fertiliser and other equipment, poor roads, poor access to appropriate output markets and market information, and inadequate education and health services.

The importance of aquaculture for developing countries such as Vietnam

For developing countries the production of aquatic products is important from a trade, employment and nutritional point of view. Fishery products are often among the most important export products of poor countries, just after the exportation of other raw materials such as crude oil. Furthermore, some 300 to 500 million people are either directly employed in the fisheries sector or earn their living indirectly through fish production. Fish is also

important from a nutritional point of view. In Asia alone more than a billion people regard fish as their primary source of protein. (Schirm and Scholz, 2005: 30-32)

For Vietnam in general, and the Mekong Delta in particular, the fisheries sector is very important. Various studies highlight the employment and income generating opportunities of aquaculture and its contribution to the people's diet. Especially in areas where there are generally no wild fish available, or during times when there are no wild fish in the streams due to natural reasons, aquaculture is indispensable. (MRC, 2003: 21; Phillips, 2002: 30-31)

On a global level, the significance of fishery products in general and aquaculture in particular grew over the past decades and will continue to grow in the future. Whereas the production of capture fisheries has stagnated since the 1980s, the share of products from aquaculture has increased steadily. Aquacultural production accounted for 30% of total world fish production in 2002 compared with 7% in the 1970s. (FAO, 2004: 3)

Due to expected increases in demand for fishery products, aquaculture will gain further importance in the future. Fish demand is expected to grow 1.5% annually in developed and 2% annually in developing countries. With traditional aquatic resources such as inland or marine capture fisheries being already exploited to the maximum, other sources have to be developed. Thus a further increase of fish production from aquaculture can be expected. (Delgado et al, 2003: 137-140)

The importance of aquaculture for An Giang province

The trends in the fishery sector identified at the global level are reflected by the current situation and recent developments in Vietnam and An Giang province: the fish sector is growing and so is its economic significance. According to the daily newspaper Vietnam News (November 28, 2005: 15) total seafood exports from Vietnam reached 2.5 billion USD during the first 11 months of 2005. The Saigon Times Weekly (October 29, 2005: 14) announced that seafood exports are now the third biggest source of export revenue. The General Statistical Office of Vietnam (2005) calculates that aquatic products have a 9.1% share in total export revenues of 26,504.2 million USD.

Within Vietnam, An Giang is the province with the highest production of freshwater aquaculture products. The most important fish for exportation is Pangasius catfish, which accounts for 232 million USD of Vietnam's export revenue (The Saigon Times Weekly, 2005: 14). Production of Pangasius has increased substantially during the last three years, from 100,000 tons to 320,000 tons in 2005 for Vietnam as a whole (Neubacher, 2005: 20). Of the total national production, 300,000 tons were produced in the Mekong Delta and 160,000 tons in An Giang alone (Globefish, 2004).

Although slightly different from the numbers presented above, data from the Statistical Office of An Giang Province (2004: 113) underlines the significance of An Giang and Pangasius for Vietnam's seafood exports. The province contributes 22% of the national production of farmed fish and 35% of the production in the Delta. According to the General Statistical Office of Vietnam (2005) out of 152,507 tons of farmed fish, about 127,000 tons were Pangasius.

2 Methodology of research

The methodology for collecting primary data was designed according to an abbreviated version of the “usage, attitude, image” (UAI) market study, which is useful for gaining an overview over a particular market. In general, gathered information is used to identify constraints to BDS demand, market opportunities for service providers, important service features, SME’s satisfaction with certain services, and strengths and weaknesses of existing services. Therefore, it is helpful for designing interventions aiming at stimulating BDS supply and demand in a certain market. (Miehlbradt, 2000: Abstract)

An abbreviated version of the UAI market study was chosen because the idea was to conduct a rather broad assessment of the BDS market in An Giang and to gain information across a range of services. The abbreviated UAI sacrifices the level of detail on a particular service and instead includes other services within the research.

To achieve a rather broad assessment of the BDS market with relevance to the Pangasius value chain the study allowed for all fish farmers and processors to be potential interviewees. The alternative would have been to restrict the sample to users of a certain service, which would have made it possible to gather more detailed information about that particular service. Besides the objective of a broad market assessment, restricting the sample to users of a particular service did not seem to be practical because the use of commercial BDS along the Pangasius value chain in An Giang is quite low.

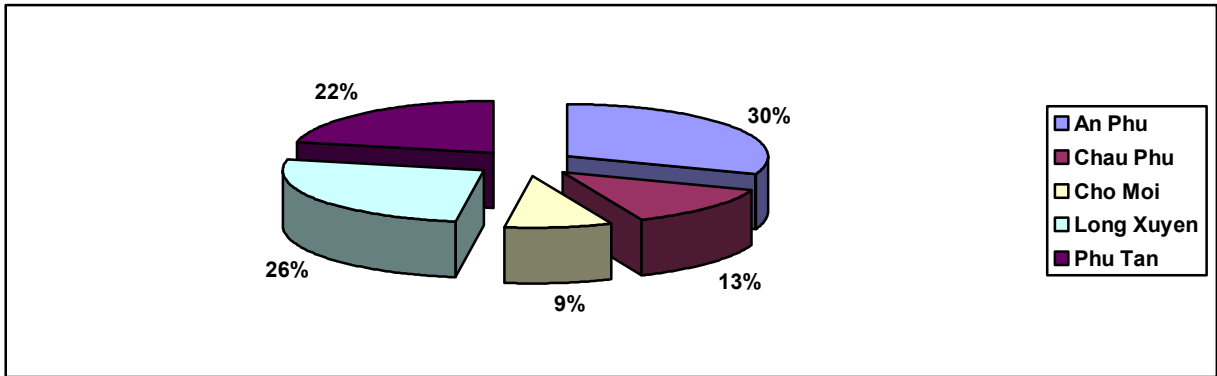
Semi-structured interviews were held between the respective interviewee and the author, who was assisted by a Vietnamese translator from the University of An Giang, Long Xuyen City. As a staff member of the Economics Department, she lectures on International Marketing and had conducted interviews with people from a rural background on previous occasions.

Data collected during primary research was supplemented by the analysis of already existing secondary information. In particular, publicly available studies published by research institutions working on issues related to aquaculture in the Mekong Delta and undisclosed studies commissioned by the Programme were included in the study.

Sample characteristics

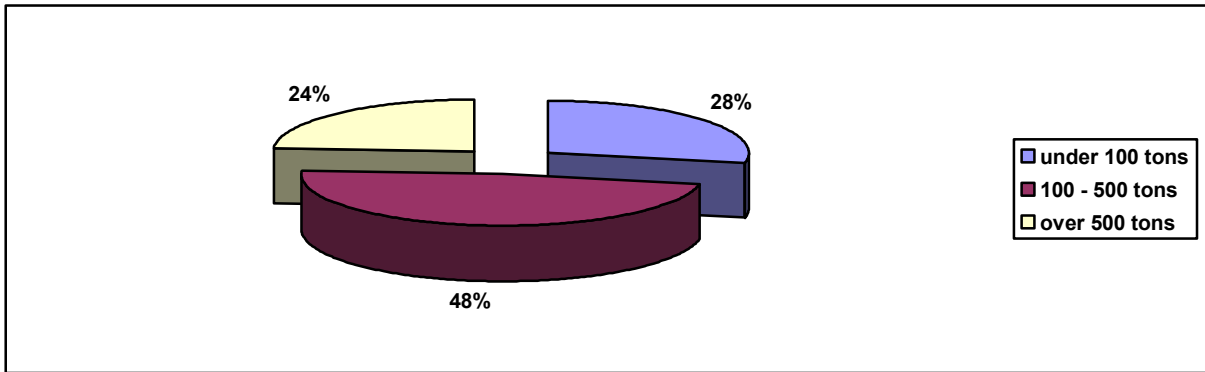
The study covers interviews with 25 **fish farmers**, all of which produce Pangasius by aquaculture. They were located in five districts of An Giang province and had small, medium and somewhat larger farms, based on their annual production. As measured by their time in the business, the interviewed fish farmers had different levels of experience. Diagrams one, two and three illustrate these sample characteristics.

Diagram 1: Share of interviewed fish farmers by districts



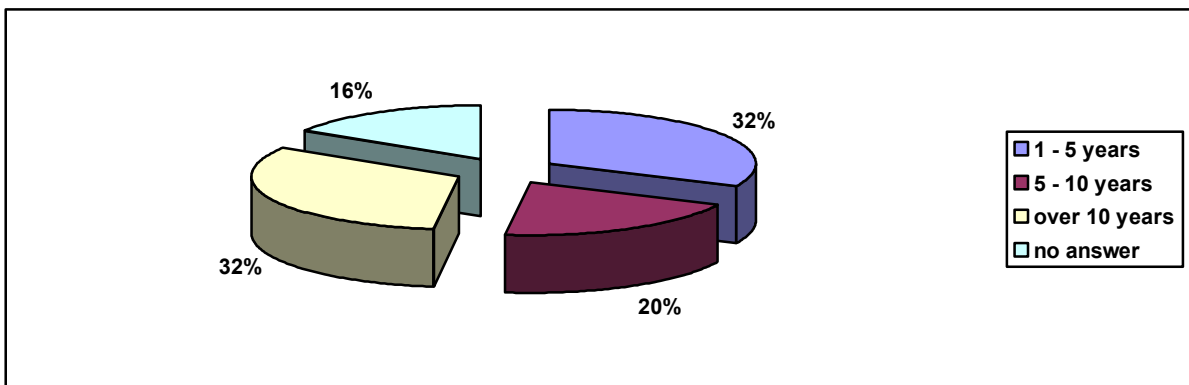
Source: Author's elaboration

Diagram 2: Share of interviewed fish farmers by annual production



Source: Author's elaboration

Diagram 3: Share of interviewed fish farmers by years in business

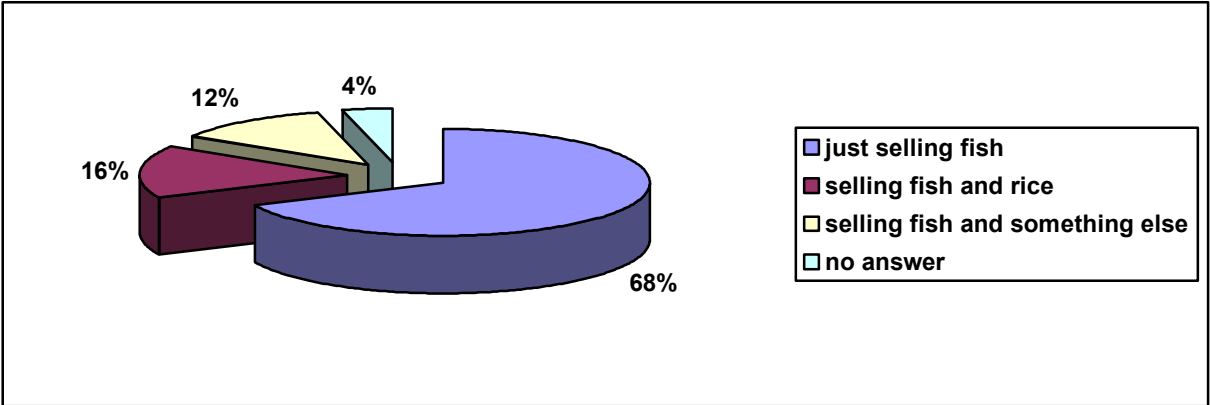


Source: Author's elaboration

The majority of fish farmers depended exclusively on fish farming and did not have other sources of income. Some mentioned other income sources: the growing and selling of rice was the most common additional income source. However, the few who stated that they

did not depend solely on fish farming still generated an average of 75% of their cash income by growing and selling Pangasius.

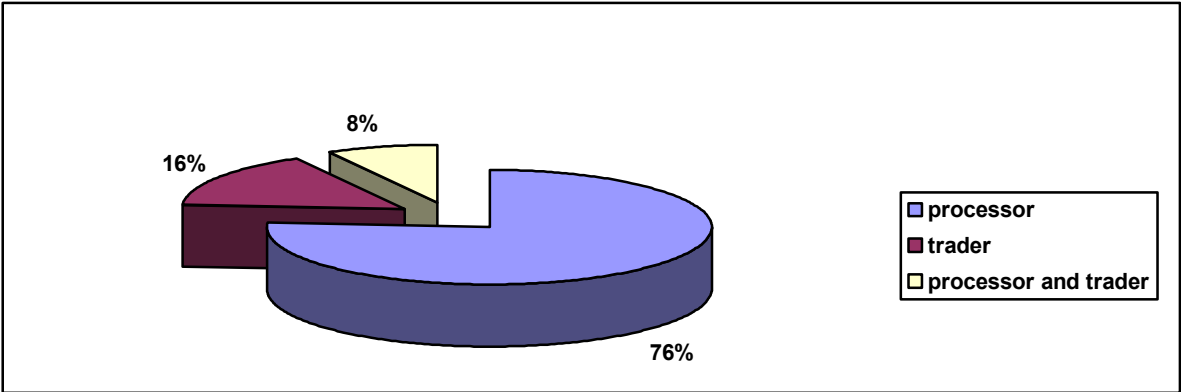
Diagram 4: Share of interviewed fish farmers by income source



Source: Author's elaboration

The majority of interviewed fish farmers sold the harvested Pangasius directly to a processing company. Due to their large share of processed Pangasius products, this respective processing company was most often one of the four processors covered by the research. Only a small proportion of fish farmers sold to an intermediary or trader. Two farmers sold to processors and an intermediary at the same time.

Diagram 5: Share of interviewed fish farmers by type of customer



Source: Author's elaboration

Four **processing companies** were included in the research. Together they accounted for a substantial share of the production of processed Pangasius products in An Giang province. Three processors, Agifish, Afiex and Nam Viet plan to require a SQF 1000 certification from fish farmers selling to them in the future. The smallest processor interviewed, Afasco, represented an interesting case because it is the first time in An Giang province that a group of farmers have founded their own processing company.

The three large processors were clearly concentrating on selling to export markets. Direct exports accounted for 70 - 90% of their total production. The only exported product was Individually Quick Frozen (IQF) Pangasius filets, which were normally pre-packed. The remaining production was sold to domestic outlets or intermediaries, which might also sell the IQF filets to overseas markets. Products for the domestic market are sold under the trademark of the respective company and are to some extent value added. Profit margins are small and sometimes just enough to cover production costs. But processors accept low profit margins. In fact they are motivated by the possibility of building up their own trademark and company image which is only just becoming possible within the domestic marketplace.

The picture was different for Afasco. The newly established company exports just 5% of its production directly. The remaining production is sold domestically to outlets or to other processing companies, which might use Afasco's produce for the preparation of their own export products.

3 Value chains, standards and Business Development Services

3.1 The value chain concept

A value chain covers all stages that a product or service passes through, from conception until disposal after consumption. Each stage, such as production, transformation or trading, is characterised by certain processes and activities. Furthermore, the players who perform or are affected by these processes change, depending on the stage of the chain at which the product resides. The specific look or shape of a value chain depends on many factors, hence it is hardly possible to outline a universally applicable model of a value chain. Instead, number of stages, activities at each stage, involved actors, etc., vary from product to product - and so does the look of the value chain as a whole. (Kaplinsky and Morris, 2000: 4)

Value chains can be characterised according to four dimensions. These four perspectives are helpful to assist visualisation of the nature of the value chain in question and to understand the differences between various value chains.

- Input-output structure: The flows of tangible and intangible assets along the chain.
- Territoriality: The regional setting and location of the different actors along the chain.
- Governance structure: Power relationships which determine the financial, personal and material allocation of resources.
- Institutional frame: National and international regulations relevant to chain members. (Stamm, 2004: 14-15)

3.2 Standards

Standards represent a set of criteria against which characteristics of a product or service can be assessed. Criteria of a standard have to be measurable and have to include clearly defined procedures for auditing. Compliance with standard conditions reflects the capacity of a company to produce a product or deliver a service within the boundaries defined by the standard. Furthermore, every standard has to contain sanctions for non-compliance. (Nadvi and Wältring, 2002: 6)

In recent years the number of standards has increased substantially. Increasing international trade and the raising awareness of consumers about social and environmental

consequences or health risks connected to trade are one reason. Another reason is the standards' contribution to promote the efficiency of international trade. Due to the variety of actors and interests involved in standard formulation and implementation there are huge differences among standards in respect to their scope and objectives. (Nadvi and Wältring, 2002: 3)

One distinction can be made between product and process standards. Product standards have the objective of ensuring certain physical product characteristics. Process standards can be applied for two reasons. On the one hand, process standards guarantee that products are produced or delivered under conditions that conform to certain criteria, such as labour or environmental norms. On the other hand, process standards are adopted to ensure certain physical features of the product, if inspection and/or testing of the actual product are complicated or impossible. In such systems, product characteristics are checked at various stages of the production process. By doing so, quality standards such as ISO 9001:2000 or HACCP can reduce the likelihood that end products contain harmful substances. (Humphrey, 2005: 13-19)

3.3 Business Development Services

Business Development Services (BDS) refer to any non-financial service used by an enterprise to assist its business functioning or to grow, and may be provided in a formal or informal manner. This broad definition covers assistance services in marketing, management, production, information technology, accounting and so forth. Assistance can be provided in a classroom setting, in one-to-one sessions, by external consultants or by friends or colleagues, who may give advice on certain problems. Hence, the BDS concept includes both commercially and thus paid-for services, subsidised assistance delivered free of charge and advice provided informally. (Miehlbradt, 2002: 2)

In the past, BDS provision was characterised by direct service provision to SMEs – mostly through public providers – and/or permanent funding of SMEs or service providers. Over time, several problems have emerged which questioned the appropriateness of this means of delivering BDS: (Worldbank, 2001: v-vi)

- Lack of financial sustainability: Service provision depends on continuous financial support and thus services might disappear after funds have been used up.
- Insufficient outreach: Only a small share of the target group is reached even if large amounts are spent.
- Lack of business orientation: Personnel do not behave in a business-like manner and funds are not allocated according to performance. Incentives to achieve customer satisfaction are not in place.
- Bad quality: Services are not tailored to the needs of the clients.
- Crowding-out of private competitors: Commercial providers cannot compete with highly subsidised providers and will be forced out of the market. (Altenburg and Stamm, 2003: 3-4)

Those shortcomings have caused a shift in traditional BDS provision towards a more demand-led and market-based BDS approach. The Committee for Donor Agencies is convinced that market forces will achieve outreach, financial sustainability and customer satisfaction. Ideally, instead of directly providing funds or services to SMEs, donor agencies should take the role of a facilitator, promoting BDS demand and supply. Agencies should strive to establish a functioning market where SMEs can choose among various services and

providers, and where BDS providers compete with each other for new customers. (Worldbank, 2002: 5-7)

Although market-based BDS provision has the potential to overcome the shortcomings of the past, Altenburg and Stamm (2003: 5-7) doubt that all difficulties will disappear. They point to the impact of market failure evident in BDS markets and conclude that exclusive market-based BDS provision is too market optimistic. Often the market environment is underdeveloped, which prevents the emergence of a functioning market for diversified services. In such situations there might be a case for temporary market intervention by the development agency to provide demanded services so as to increase competitiveness and the product range of affected SMEs.

The argument goes that long-term benefits from market development will more than compensate short-term market distorting effects of direct service provision or funding. In weak market environments it is simply not feasible to achieve substantial market development without active market interventions. For example, a programme could provide services addressing future BDS providers and BDS buyers. Bearing the market distorting effects in mind, the development agency has to make sure that direct service provision is temporary and will be phased out when a certain level of market development is reached. At this stage, the agency can adopt the role of a market facilitator and discontinue active BDS provision. However – and to make this important point clear – this ideal case, where facilitation of supply and demand is sufficient to guarantee a functioning BDS market, is often not feasible in weak market environments. (Nussbaum and Miehlbradt, 2004: 6-7)

4 The Pangasius value chain in An Giang province

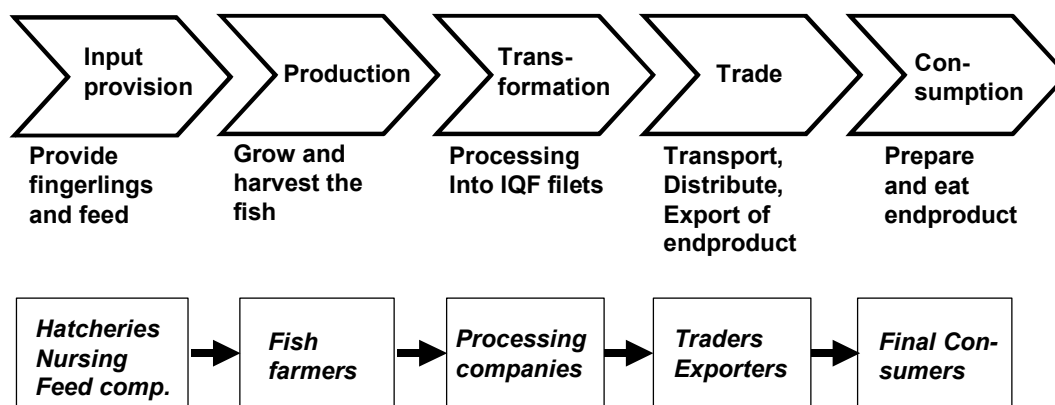
The two most common types of catfish farmed by aquaculture in the Mekong Delta are *Pangasianodon hypophthalmus* (in Vietnamese: tra) and *Pangasianodon bocourti* (basa). Tra has taken over as the most popular catfish and is mostly produced for overseas markets. Basa has to be grown for eight months compared with six months for tra, which makes it more expensive to produce. Furthermore, basa requires higher water qualities than tra. Another reason for the popularity of tra is its dress-out weight, which is the amount of fish required to produce one kilo of filet. For tra, 3.1 kg of fish are necessary to produce 1 kg of filet whereas up to 3.8 kg of basa are needed for the same amount of filet. (Poisson, 2005: 5)

However, basa is still preferred by Vietnamese consumers and will sell for a price about one-third higher than tra. Locally, tra suffers from its image as a latrine fish. Especially in the past, the farms often disposed of their wastewater into the fishponds, which has perpetuated this image. (Poisson, 2005: 5)

4.1 Players and processes in outline

The following Figure outlines the players and processes of the Pangasius value chain in An Giang. For each link of the chain it shows central activities and the respective actors who perform these activities. Some of the stages will be described in more detail in the following sections.

Figure 1: The Pangasius value chain in An Giang province in outline



Source: Author's elaboration

Input provision

Hatching and nursing. Production of larvae is not a time intensive process. After female eggs and male sperm have been mixed, the eggs start to hatch after 20 to 30 hours. After one more day, the larvae will have developed into fry and can be transferred to nursing ponds or tanks. Nursing takes about 90 days. By that time the fingerlings will reach a sufficient size to transfer them to cages or enclosures and thus to sell them to grow-out farms. (Poisson, 2005: 11-12)

Mortality rates during the first 30 days are the highest for the whole production process. 60 - 80% of larvae and fry will not survive the first month of their life. One reason is the low tolerance to poor water quality. In order to purify the water used for raising the fry, or to protect the fish from infections, farmers use disinfectants and antibiotics. Farmers often have little knowledge about the consequences of using these chemicals and about the appropriate mode of applying them. (Poisson, 2005: 15-16)

An Giang province has banned the harvesting of wild river catfish fry. This has contributed to the artificial reproduction of catfish seed. Today the total seed required in An Giang is provided either by private hatcheries or public providers. (Poisson, 2005: 11-12)

Feed supply. In addition to hatcheries and nurseries, feed suppliers are the second group providing important inputs for the Pangasius value chain. Although feed is often home-made, commercial suppliers have been increasing their market share in recent years. The reason is the growing demand for standardised and high quality feed among fish farmers who have expanded their production and have the objective of improving the productivity of their aquaculture business. (Poisson, 2005: 31)

But quality issues have quickly arisen. The cheaper feed providers in particular, who have tried to exploit this growing market, often use ingredients of unknown provenience

and/or content. For example, fish offal is used to produce feed for the same fish species. Because quality and food safety checks are uncommon, such feed can easily enter the production process. (Poisson, 2005: 31)

Production and/or grow-out

Fish farmers buy fingerlings and feed to grow the fish until they have reached the size and weight needed to harvest and sell them. Two types of aquaculture can be distinguished in Vietnam: a traditional and a modern approach. Traditional approaches are more common in a freshwater environment and are household-based. The modern approach is more intensive and is usually found in brackish and marine waters. In the past, aquaculture was not regarded a source of income due to its household-based nature. Only recently have people discovered that it represents a very profitable activity. (Lem et al., 2004: 38-39)

Freshwater fish farms in the Mekong Delta can be divided into three categories: ponds, cages and enclosures and/or pens. Ponds have been used for several hundred years to raise fish. In the beginning ponds were part of the rural household subsistence system. During the 20th century the methods of raising fish in ponds have become more technology intensive. Increases in production, productivity and farm size took place. Today, ponds range between 500 and 10,000 m² and larger farms may operate several ponds at the same time. (Poisson, 2005: 18)

In terms of total annual production, aquaculture in An Giang province is nowadays dominated by cage culture. In comparison with ponds, cages allow higher fish densities and have a higher productivity. Cages are normally submerged in the river close to the riverbank and have some sort of compartment on top, which is used for storing equipment and supplies or as living quarters for workers and/or the owners of the cage. (Poisson, 2005: 18)

Enclosures are the third production method to be found in the Mekong Delta. Basically nets or a fence is used to isolate a section of the river, starting from the riverbank. The ground of the enclosure is the river floor, which contributes to the reduced need for construction material. An additional advantage is that the amount of wasted feed is lower compared to cages because the feed falls to the riverbed where it can still be eaten. These factors explain the growing popularity of production in enclosures in the Mekong Delta. (Poisson, 2005: 18)

Processing and transformation

Processing companies buy the produced raw fish from fish farmers and transform it into various products. They normally receive the living fish fresh from the pond, cage or enclosure. To produce the typical export product - Individually Quick Frozen (IQF) filets - they slaughter, skin and cut the fish into filets, which are then frozen and packed. For the local market, other value adding activities will be included to produce pre-cooked and/or ready-to-eat dishes. The variety of value-added products sold domestically is much larger than the product range supplied to international customers.

Lately, certain processing companies have started to supply feed or seed to the fish farmers. Their motivation is to ensure a steady supply of necessary inputs with appropriate quantity and quality. Some even run their own fish farms for this purpose. (Lem et al., 2004: 43-46)

Contracts between fish farmers and processors

The relationship between fish farmers and processors in An Giang has been more commonly characterised by informal agreements than by enforceable contracts. They have not included a guarantee that the processor will purchase the fish from the farmer. Fish farmers normally coordinate the amount of fish they will produce with the processor at the beginning of the farming season through a registration process. Prices will be negotiated at the time of harvest and depend on the market situation, fish quality and quantity. At that time the processor will check the fish quality by taking samples. If content, colour or size do not match the requirements of the processor the price will be lower or the fish might even be rejected completely.

The so-called “farmer clubs” are just as informal. The contractual relationships of club members and the processor are similar to that described above. Old members resign from the club and new members join in a non-transparent manner and a fish farmer might consider himself a member of various clubs at the same time. Club membership cannot be equated with a certain level of quality and/or professionalism on the side of the fish farmer. Thus, it is not a substitute for a quality certification in its current form.

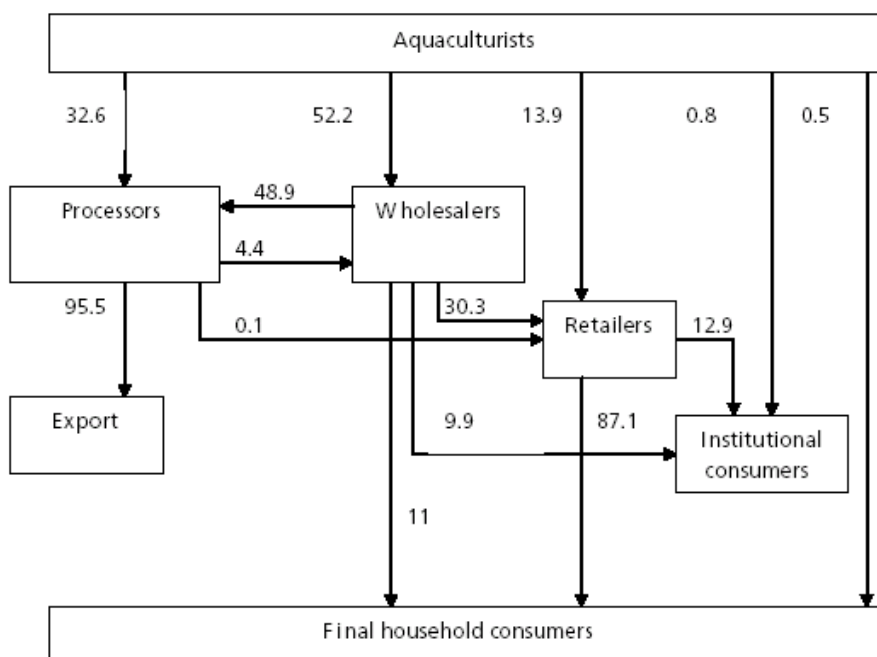
Trade

Although wholesalers, trader or intermediaries were not directly covered by the study, they are an important element of the *Pangasius* value chain in An Giang. In Vietnam different types of wholesalers exist. In southern Vietnam wholesalers usually collect raw fish from the fish farmers and distribute it to processors or other wholesalers. Wholesalers play an important role because they are the link between different stages of the chain and thus facilitate the functioning of the whole chain. Furthermore, they help to balance supply and demand of fish among actors and stages within the chain. Their services are necessary at each stage of the chain. (Lem et al, 2004: 39-41)

Consumption and/or product flows

For fish farmers, the links to wholesalers and processors are most important when it comes to selling harvested fish. In Vietnam as a whole, the farmers sell the majority of their produce to wholesalers. Figure 2 shows, that half of the fish these middlemen purchase from fish farmers will be sold to processors. In Vietnam as a whole, fish farmers sell only around 30% of their production directly to processors. Once the product has arrived at the factory of a processing company, by whichever means, the fish are most likely to be destined for export. (Lem et al., 2004: 64-65)

Figure 2: Marketing channels for aquaculture production, in %



Source: Lem et al., 2004: 64.

In An Giang, wholesalers did not play such a major role as they seem to do in Vietnam as a whole. Here, the study’s findings indicate that fish farmers sell most of their produce directly to processors. Selling to traders or wholesalers is regarded as a last resort, if it is difficult to sell the harvested fish, because their size is inappropriate or they are contaminated with antibiotics. The number and farm size of interviewed farmers might be responsible for the differences. Small farmers are probably more likely to sell to traders because it is harder for them to maintain a long-term relationship to processing companies directly.

4.2 Problems of fish farmers and processors

Fish farmers

Problems faced by fish farmers, as expressed during the interviews, can be grouped into two main categories: market access and quality. Market access subsumes problems connected to selling and marketing harvested fish, including information on output markets. The three most problematic issues mentioned regarding market access were:

- The low and fluctuating price
- Finding customers and obtaining details about their demands in advance
- Processors have already determined where to buy their fish

In the opinion of fish farmers, quality problems are closely connected to shortcomings with production technology and method. For them it is clear that a lack of appropriate technology or sufficient know-how will immediately reduce the quality of their fish. In this regard the fish farmers mentioned especially:

- High production costs
- Insufficient quality of the fish, such as wrong size
- Outbreak of diseases

A PACA exercise (Participatory Appraisal of Competitive Advantage) commissioned by GTZ in An Giang found similar problems. The various stakeholders of the value chain who participated in this exercise observed that fish farmers did not meet international standards on aquaculture. Closely connected to this was a high threat of pollution and of disease outbreak. Furthermore, fish farmers had problems in meeting the demand of potential customers and finding buyers for their fish in the first place. Product specifications and demand in terms of quantity are determined by the processors, which places them in a powerful position in their relationship with the fish farmers. (PACA, 2005: 8)

A recent study by Poisson (2005: 22-26), which assessed the production methods used in aquaculture farming systems, also stressed problems related to product safety and pollution. Fish could be contaminated by run-off from paddies or fields where chemicals such as fertilisers and/or pesticides had been used. Release of untreated wastewater was especially problematic in the case of fishponds. Excreta or left over food was sometimes discharged into ponds without considering possible negative consequences.

The uncontrolled and wrong use of antibiotics is another problematic issue in the production process. Fish farmer's knowledge of the consequences of applying medicines is limited. Furthermore, they cannot assess which symptoms require which medication. Veterinaries are seldom consulted: fish farmers mostly trust the advice of their friends or the salesperson of the medicines. (Poisson, 2005: 22-26)

Processors

The processing companies' problems are similar to the problems expressed by the fish farmers – just on a different level. They were also concerned about issues related to market access and quality. But in contrast to the fish farmers the processors had specific problems regarding:

- Reaching overseas' markets
- Product design according to customer needs
- Trademark building

Processors are aware of problems related to production technology and its consequences for the quality of the end product. The following issues were especially problematic in this regard:

- Implementation of quality and food safety standards
- Implementation of a traceability system
- Low quality of end products

The processors emphasised the low quality of fish provided by the fish farmers. They stated that quality and quantity of purchased inputs was unreliable and did not match processors' demands in many cases. At the time of harvest, the fish often had the wrong size or even contained chemicals and/or antibiotics. For the processors it is evident that the

majority of the farmers do not have the capacity to improve current production methods on their own. To avoid shortcomings regarding fish provided by the farmers, the farmers would need assistance from outside.

The relevance of the problems expressed by the processors was supported by the conclusions of the PACA exercise mentioned earlier. It was clear that processors suffer from weak market access, low diversification of end products and a lack of modern management. Furthermore, the weak cooperation between fish farmers and processors was found to limit the efficiency of this link in the Pangasius value chain. (PACA, 2005: 10)

4.3 Use of Business Development Services

Interviews with fish farmers and processors offered the following insights into the BDS market in An Giang province.

- **Fish farmers have a low awareness of BDS.** Out of the 25 fish farmers interviewed, 23 did not recognise the BDS concept and did not understand the idea of assistance services until we described it in more detail. Similarly, BDS embedded in business transactions were not recognised as such and were not at first considered as “assistance”. The same responses were observed when talking about informal BDS.
- **Fish farmers mostly receive embedded BDS.** After the underlying concept of BDS and assistance services was explained, 18 of the interviewed fish farmers indicated that they received embedded BDS of some sort. Either feed suppliers or processors were mentioned in this regard. Both provided information on how to raise fish of sufficient quality and on potential product markets. Processors sometimes assisted in a more practical manner at the farm and feed suppliers distributed information on how to use purchased feed correctly.
- **Fish farmers are often not satisfied with received BDS.** Of the 18 fish farmers who received BDS of some sort, 11 were not fully satisfied with the provided services. The superficial character of provided information was criticised and interviewees noted that assistance from customers and/or business partners should not be considered “training”. Thus, received support was mostly not beneficial for the fish farmers’ businesses.
- **Fish farmers have little experience with BDS which are not embedded.** None of the interviewed fish farmers ever bought commercial BDS. Six farmers received assistance from public institutions such as An Giang Fisheries Association or the Extension Service of the Department of Agriculture and Rural Development.
- **Fish farmers commonly receive informal BDS.** Just two fish farmers named support from friends, family or colleagues when questioned about support services they had received. Many more farmers mentioned similar relationships but did not consider them “assistance”. The most common information obtained through such informal channels was market information and support regarding fish raising technology and the treatment of diseases.
- **Processors have a basic understanding of BDS.** In contrast to fish farmers, processors did comprehend the BDS concept and understood the underlying idea

of seeking assistance from outside their own company. The processors paid for external support which assisted in achieving compliance with quality standards such as HACCP or SQF 2000. They also paid for professional legal advice, especially to comply with the complex requirements for selling to overseas' markets. Processors received non-commercial assistance services, too. The local People's Committee and the Fisheries Association provided information on quality standards and DANIDA's Seaqip Project gave courses on management training.

- **Processors are important BDS providers, especially to the fish farmers.** Besides their demand for BDS, processors are at the same time important providers of BDS – especially embedded BDS to fish farmers. According to the processors they provide information on output markets, give training courses on production technology and standards and provide feed and fingerlings. They are motivated by the conviction that the quality of inputs determines the quality of the processed end product, and by the observation that sometimes it is hard to find fish of appropriate quality and quantity.

The majority of fish farmers expressed their interest in the BDS concept once they learned more about it. Only five farmers could not comprehend how BDS could assist them to overcome current problems and thus explicitly refused to accept external assistance in the future. The remaining 20 farmers expressed their need for various support services to reduce difficulties, especially regarding marketing, market information, product quality and the implementation of quality standards.

Processors have been equally interested in BDS to solve urgent problems. Like most of the fish farmers they expressed their need for support regarding marketing, market information and product quality. In particular, processors expressed their interest in assistance to design demand-oriented products, in trademark building, during implementation of quality standards and the establishment of a traceability system.

4.3.1 Rural extension services

Some findings presented above have been supported by a UNDP (2004) study concentrating on the Mekong Delta in Vietnam. This study indicates that agricultural extension services provided by the Government suffer from various problems. Extension services were usually not able to assist farmers to improve productivity and market access, and consequently had not so far contributed to poverty reduction in the Mekong Delta. The following problems were identified by the study:

- **Rural extension services have low outreach.** The study found that an average of four to six extension officers are responsible for one district. As a consequence, one third of rural communes had five or fewer visits from an extension officer during the last 12 months. Another 12% of the communes had only six to 10 visits.
- **The poor have little access to extension services.** Offices were found to have little interest in poor communes or farmers because they are considered landless. For extension officers it does not seem to be worthwhile to visit farmers with too little land.

- **Staff are insufficiently trained and the effectiveness of services is low.** Some extension officers only receive basic training, which does not enable them to meet the requirements of the farmers. The study presented reports of animals dying after treatment from the extension officer. Consequently, the farmers had little trust in the officer's capacity to overcome difficulties on the farm. (UNDP, 2004: 53-55)

Moreover, the study emphasised the high importance of informal information sources and of services embedded in other business transactions. Informal information channels, such as friends or colleagues, were especially important for poor farmers. Better-off farmers have enough resources to invest in equipment and to improve production technologies. For this reason they are more targeted by extension officers. (UNDP, 2004: 53-55)

Embedded services were more common among poor farmers, too. For the same reason as presented above, the poor have to rely on assistance from suppliers of feed, fertiliser and pesticides. But information from private sales persons may not be entirely accurate because suppliers have an interest in selling more. Thus, information and/or assistance from input suppliers may not be as helpful as possible. (UNDP, 2004: 53-55)

When questioned about the features of service provision by rural extension officers, the farmers expressed a need for more relevant and appropriate assistance. They were particularly interested in technical training in how to diversify their product range and/or to produce crops of higher value. Furthermore, assistance in marketing and market access was important to the farmers, because rural extension officers often did not assist in this regard. (UNDP, 2004: 53-55)

4.3.2 Information flow among market players

Access to market information is often restricted, which contributes to a limited understanding of market developments. Actors within the Vietnamese fishery sector most commonly accessed information on prices (Table 1 below). After prices came information on quality, quantity, time and location of sales. However, information was often not available to all members of the sector. The above indicates the actor's desire to have better access to information on their respective output market. The amount of available information becomes less the closer one comes to the retailing and/or consumption end of the value chain. Furthermore, knowledge on governmental policies and regulations is low among several market operators. (Lem et al., 2004: 65-66)

Table 1: Types of information accessed by market actors, in %

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

Source: Lem et al., 2004: 65.

Table 2: Types of information expected by market actors, in %

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

Source: Lem et al., 2004: 66.

Wholesalers, retailers and colleagues were the most common sources of information for members of the Vietnamese fishery sector. This shows a high degree of informality in respect to the flow of information. For example, 65% of fish farmers receive information from other aquaculturists. (Lem et al., 2004: 66-67)

Table 3: Sources of information accessed by market actors, in %

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

Source: Lem et al., 2004: 66.

4.4 Use of standards

The Pangasius fish farmers in An Giang do not produce according to food safety or quality standards. Just one out of 25 farmers interviewed produced according to the HACCP-based SQF 1000 standard. In contrast to the fish farmers, processing companies have implemented various food safety and quality standards. All companies interviewed held both a HACCP and an ISO 9001:2000 certificate. These are both quality management standards to ensure food safety, with the difference that ISO 9001:2000 is a generic standard and HACCP is sector specific to the food industry. In most cases, processing companies will hold additional quality management standards, such as Halal or SQF 2000, which are also based on HACCP.

In the past, processors implemented certain standards to meet customer demands and/or import requirements of overseas markets. Quality standards used to be a substantial competitive advantage when trying to find customers nationally and internationally. On the national market quality standards have been used – and in cases are still used – for sales promotion and advertising. Internationally they ensure imports came from countries where certain quality precautions had been put into place.

Even though processors have already implemented certain quality management standards, they are still interested in obtaining more sophisticated and/or specialised standards. Processors expect to improve market access and product quality through standard implementation. They are well aware of the importance of either EurepGAP or SQF 1000/2000 for accessing profitable markets in Europe and the USA, respectively, and to improve trust among overseas' customers. Furthermore, processors expressed their interest in modern traceability systems.

Fish farmers were similarly interested in the implementation of food safety and quality standards: all of them expressed their interest in such protocols. At the same time,

however, their knowledge of the requirements and content of standards was limited. As a result of the implementation of quality management systems in their production, they expected improved access to output markets, higher fish quality, protection against price fluctuations and a steadier relationship with existing customers.

Despite all the perceived advantages regarding the implementation of food safety and quality standards, however, some farmers questioned the extent of their positive effects. For nine farmers the implementation of standards was not viewed as sufficient to overcome current problems, but rather as a part of the solution. Even though they found standards to be beneficial in increasing trust among customers and product quality, they do not constitute a guarantee to locate new customers and/or sell harvested fish. These fish farmers regarded a certification more as a formal document. Processing companies would still have to check the quality of purchased fish over and over again.

5 Shortcomings of the market for Business Development Services

In An Giang, a functioning commercial BDS market does not exist at the moment. The market environment causes an insufficient flow of information which prevents market actors from identifying market opportunities and actively exploiting them – both on the demand and the supply side. Furthermore, existing services are of poor quality or do not meet customer demands due to deficient capacities on the side of the different service providers, among which governmental institutions, processing companies and input suppliers are the most important. According to recent literature on BDS markets, the current state of the BDS market available to the members of the Pangasius value chain in An Giang should be considered as weak and/or limited. (Nussbaum and Miehlbradt, 2003; Miehlbradt and McVay, 2004; Hitchins, Elliott and Gibson, 2004; GTZ, 2005)

Although limited, the BDS market in An Giang does contain opportunities. There is a basic infrastructure for BDS provision available, which makes interventions attempting to improve the current situation worthwhile. At first sight, there are no BDS transaction at all. Digging deeper, an infrastructure for the provision of embedded and informal BDS, which are most frequently used types of services, can be discovered.

Furthermore, there is unmet BDS demand due to a lack of services, inappropriate services or the lack of information on existing services. Fish farmers and processors were very interested in the BDS concept and in the overall idea of receiving external assistance to overcome difficulties. A willingness to pay for appropriate services was expressed several times.

For designing programme activities, these general conclusions on the BDS market in An Giang are helpful, but not sufficient. It is necessary to obtain more detail concerning where critical bottlenecks are located – on the supply or the demand side. Bearing in mind this constraint, the potential demand for and supply of BDS will be assessed in the following paragraphs. The tool for categorising demand and supply will be adopted according to Miehlbradt (2002). Results derived from this analysis are vital for the subsequent recommendation of programme interventions.

Three indicators are used to assess whether supply and demand are either weak or strong with each of the indicators adopting one dimension or the other.

Indicators used to assess BDS demand are:

- Awareness of BDS
- Assessment of how important a service is for enterprise performance and competitiveness
- Share of BDS non-users with actionable reasons for no-use

Indicators used to assess BDS supply are:

- Satisfaction with received BDS
- Proportion of BDS users who could choose among various providers
- Retention ratio of BDS

Some of the indicators need further explanation. A SME was judged to be aware of BDS, if it was aware of the BDS concept and understood basic features of external assistance services. “Actionable reasons for no-use” refers to reasons, which can be addressed by the SME Promotion Programme. The most common are insufficient information and lack of financial resources. (In contrast, explicit disapproval of the BDS concept is difficult to address by a development project – at least in the short run.) The “retention ratio” is part of another analytical tool to assess market performance of a particular service and/or product. It calculates the proportion of SMEs who have bought a service more than once. Unfortunately the current research was not able to collect the numerical data necessary to calculate retention ratios.

5.1 The fish farmers’ perspective

First, we will analyse BDS supply and demand among fish farmers. At the moment, fish farmers have strong **BDS demand**, although the awareness among fish farmers of available services and BDS in general is weak. The demand is concluded to be strong, because the fish farmers emphasised the importance of receiving assistance regarding various issues. Furthermore, lack of information on available services and BDS is the most important reason for not falling back on external assistance at the moment. Still, the lack of awareness has important implications regarding the design of programme interventions as will be described below.

Current **BDS supply** for fish farmers is weak. Two reasons are apparent for this: a high proportion of recipients, who are not satisfied with the service they received, and an insufficient number of BDS providers which offer appropriate services. As explained above, a retention ratio was impossible to calculate. The low usage of BDS generally contradicts the calculation of such ratios. Moreover, the high importance of embedded and informal BDS makes it difficult to calculate unbiased and meaningful retention ratios.

5.2 The processors’ perspective

Processors have a strong **BDS demand**. BDS supply is difficult to assess because of the lack of necessary data and mixed results derived from the available data. Strong BDS demand was attested by the processors’ high awareness of BDS and the contribution which BDS was reported to have on the competitiveness and performance of their businesses.

The assessment of reasons for no-use showed mixed results. On the one hand, a lack of information on available BDS was one reason for not demanding more BDS. On the

other hand, the research indicates a tendency on the part of the processors to solve problems internally and to provide the necessary services themselves. This is a cultural phenomenon specific to Vietnam's enterprises, which has been discovered by various previous studies. The data collected on Pangasius processing companies in An Giang supports this conclusion.

Most external support services addressed those issues that could not be solved internally. In the first place, the implementation and certification of international quality management and food safety standards and certain legal issues were addressed by BDS. Legal issues required detailed knowledge on particular instruments, such as trade law, and often also involved experience with legal documentation from overseas. Thus, only a small range of the total business functions were out-sourced. The extent to which this cultural feature influences the BDS market An Giang is difficult to assess and the study was not able to draw reliable conclusions on what influence it will have in the future.

As mentioned above, **BDS supply** to the processors could not be assessed during the research. On the one hand, processors were satisfied with received services, which indicates a strong supply. On the other hand, the processors were not able to name other BDS providers relevant to them, nor did they know details about the remaining BDS market. The uncertainty on BDS supply is exacerbated by the lack of appropriate information from which to calculate reliable retention ratios.

To sum up, the BDS market relevant to the Pangasius fish farmers and processors in An Giang is limited at the moment, which indicates constraints on both the demand and supply side. However, a closer look revealed a somewhat stronger demand than previously expected. At the same time, BDS supply seems to be the true bottleneck. Although the research does not allow definite conclusions regarding the supply to processors, the fish farmers obviously suffer from a weak BDS supply.

6 Facilitation of the market for Business Development Services

Based on the identification of current problems faced by fish farmers and processors and an assessment of BDS supply and demand, the study will now recommend areas for appropriate interventions to strengthen the BDS market in An Giang so as to improve BDS provision to fish farmers and processors.

As we have seen above, fish farmers show a strong BDS demand and suffer from a weak BDS supply. In such a case a programme should focus exclusively on the supply side because a sufficient level of demand can be taken for granted. However, the low awareness of fish farmers concerning assistance services justifies demand side interventions too. The same recommendation holds for the processors, who have strong demand but also face supply side constraints. Thus interventions should focus on the supply side without neglecting important issues to be addressed on the demand side.

6.1 Stimulating demand

To exploit the demand potential of **fish farmers** it is necessary to raise their awareness of BDS and to tackle the reasons for not using assistance services at the moment. Measures to raise basic awareness of BDS have to provide information on the BDS concept. Fish farmers have to understand the benefits and advantages connected to external assistance services.

Because of the low proportion of fish farmers who have previously bought BDS, it is most likely necessary to motivate them actually to start using external assistance services, once they have been informed about the BDS concept. Measures to reduce the fish farmers' perceived financial risk have to be included in the interventions. Fish farmers might still be reluctant to buy BDS due to their purely theoretical knowledge about likely advantages and their problems in assessing the financial benefits of an investment in BDS. Common tools to promote BDS consumption are voucher and "third-party paid-for" schemes, free trials and demonstrations. Furthermore, payment in instalments can be useful in convincing SME to purchase commercial BDS.

Processors need more detailed information on BDS markets because they already have a basic understanding of the BDS concept. In the short run, interventions should focus on linking processors with already existing services. For example, GTZ's SME Promotion Programme could distribute data on BDS providers through magazines, internet portals or radio programmes. Business-to-business trade fairs are another option to establish a link between existing BDS providers and customers.

The processor's current tendency to prefer to solve problems internally and abstain from purchasing BDS externally has important implications for the programme interventions in the long run. To develop a sustainable and functioning BDS market, it is necessary that processors increase their out-sourcing activities. That would signal un-met service demand to potential BDS providers and thus motivate them to enter the market in An Giang. This is why a more detailed assessment is needed to define the extent this business phenomenon restricts the development potential of the BDS market in An Giang.

6.2 Improving supply

GTZ's SME Promotion Programme needs to consider various problematic issues regarding BDS supply in An Giang. Specifically, the quality of existing BDS has to be improved, BDS have to be tailored to the specific customer needs and BDS supply has to be increased in general. Different interventions can be divided between short- and long-term.

In the short term, and to achieve noticeable progress regarding BDS market development in An Giang, programme interventions should focus on key service providers. At the moment, these key players are governmental institutions, processors and informal providers. In the longer term, however,, the programme has to make sure that new providers enter the market in An Giang.

How to improve BDS supply in the short term? In the short term, programme interventions should incorporate institutions like the Department for Agriculture and Rural Development or processing companies in the process of assessing service demands of potential customers. This creates an interest in offering BDS, shows providers existing shortcomings of offered services and motivates them to modify provided services appropriately. The gathered information on the BDS market should be distributed to other stakeholders which are not actively involved in the Pangasius value chain but still represent potential BDS providers.

However, cooperating with key BDS providers during market assessments is not enough to improve service quality significantly and to tailor the services to customer needs. Providers have to be supported by training activities and technical assistance to enable them

to modify existing products or design new products according to demand requirements. Besides technical training, providers have to increase their knowledge about the latest production standards and market trends. Through programme interventions providers have to learn how to provide services to SMEs in a businesslike manner.

How to improve BDS supply in the long run? In the long term, alternative service providers should be introduced to the BDS market in An Giang. The SME Promotion Programme needs to assist interested providers from Ho Chi Minh City or Can Tho to extend their regional coverage to An Giang. Furthermore, it needs to provide guidance to entrepreneurs from An Giang, who may be motivated to start a business providing BDS. Seminars on business start-ups, technical training and support in designing appropriate service products, which consider the true needs of targeted customers, are vital in this regard.

Another strategy is to identify successful business models developed by local entrepreneurs and train other SMEs to start similar businesses. Such innovative concepts could be copied and taught to other SMEs in seminars and workshops. For example, one fish farmer has started a transportation business delivering fish from the farms to processing sites. He quit his aquaculture business due to decreasing prices which did not cover production expenses any more. According to this farmer, the transportation business is not as profitable as fish farming but a lot more reliable. Fluctuating Pangasius prices can result in both high profit margins and prices below production costs. Margins for transportation are lower but more constant over the time, which has given him and his family more income security.

Model contracts can play an important role in increasing trust among involved market actors in market transactions and relationships. Model contracts show involved parties what to expect from a service transaction and thus prevent unrealistic expectations. Furthermore, they can be used as a reference in case uncertainties arise during the process of service delivery. Actors who are reluctant to purchase BDS at the moment, in particular, can benefit from model contracts. The Programme should formulate and distribute such documents and train stakeholder how to use them.

6.3 A case for active involvement

The weak market environment evident in An Giang has important implications for BDS market promotion and the development agency which has a facilitating role. Basic awareness-raising for fish farmers and establishment of a link between farmers and processors are necessary to facilitate BDS demand. So are joint market assessments and subsequent training initiatives to improve service supply. However, the results of this study indicate that facilitating demand and supply is not sufficient to achieve substantial BDS market improvements – especially in the short term and/or at early stages of the project. Instead, and taking expressed problems into consideration, direct BDS provision or funding will be inevitable.

The SME Promotion Programme should actively engage in promoting food safety and quality management standards along the Pangasius value chain. Various issues could be addressed by the implementation of such standards. The fish farmers would improve product quality and market access. They are well aware of how important the quality level of their fish is for the overall profitability of their businesses. Compliance to food safety standards would guarantee that chemicals and antibiotics are avoided throughout the

production process. Furthermore, standard compliance would signal improved quality levels to potential customers, which is likely to create better market access and turnover. A more constant and long-term business relationship to customers might even protect fish farmers against price fluctuations.

Processors would benefit from adoption of food safety standards, too. They would fulfil requirements of export markets and improve quality of end products. Due to the higher quality of fish purchased from the farmers, the quality of processed end products will become more reliable. Hence, processors can increase the confidence of overseas customers in their products and better access export markets. This also reflects the growing importance of traceability systems to guarantee that food imported from developing countries is safe for consumption.

Although there is no alternative in the short-term to direct provision of services, this has to be temporary. After piloting different activities, direct interventions need to be reduced and eventually to be phased out. Pilot activities could include efforts to improve production methods of certain fish farmers. Other important stakeholders such as the Department for Agriculture and Rural Development and key processing companies should be included in pilot activities right from the start. They will then become familiar with the role of BDS providers and become motivated to engage more in BDS provision. The success of pilot activities and the communication of this success to other members of the Pangasius value chain will raise awareness on issues connected to food safety and the contribution of BDS to overcome current quality problems.

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