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Fieldstudy on Smallholder and Community Positions, Needs and Expectation Concerning Shrimp Aquaculture Certification

In East Kalimantan and Aceh - Indonesia



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Field report for Oxfam Novib of MSc thesis fieldwork

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Introduction

This report summarizes some key findings from Oxfam Novib commissioned community based shrimp farming standard study in Indonesia with support of Sustainable Fisheries Project. I joined the research of the two Indonesian consultants hired by Oxfam Novib as part of my master thesis Forest and Nature conservations at Wageningen University. This report describes some issues that were identified as relevant during discussions between the author and Oxfam Novib. This report is as much as possible written based on the perception of the respondents, the small scale farmers and community members in Aceh and East Kalimantan.

Traditional and small scale farming in East Kalimantan and Aceh

There are about 400.000 ha of traditional ponds in Indonesia. The definition for traditional ponds in Indonesia is; *“ponds that rely on natural water sources and tidal water exchange without pumping”*. There are about 2 million small scale farmers and their family that depend on these 400.00 ha of traditional ponds in Indonesia (pers. com AAC).

In east Kalimantan the traditional shrimp farms are not old and most are established around the 1980s and 1990s. The small scale farmers that own the farms are often relative wealthy and have another side job besides shrimp farming in mainly shipping or fisheries. Shrimp farming is very profitable in East Kalimantan, inputs are low and outputs relative high and environmental conditions are still relative good. Off-farm impacts and environmental impacts are low.

In Aceh the farms are often older and sometimes established for several generations. Most small scale farmers in this research did use semi-intensive and extensive shrimp farming system and have a various side jobs. It seems to become rare that the small scale farmers in Aceh depend on shrimp farming. They tend to switch to poly-culture farming systems of shrimp, milkfish and other fish or crabs. The importance of their side jobs is gaining priority since the benefits of shrimp farming decrease. In Aceh shrimp farming is getting less profitable low environmental conditions and viruses seem to be the main threats. The Acehese small scale farmers are very well integrated in the communities.

Shrimp farming in East Kalimantan – the Tarakan and Bulungan region

Shrimp farming in the Tarakan region began in the 1980s. In those days, the farmers cleared the delta forestlands in order to create ponds with a relatively small size with an average size of 400m². In the early years of opening up the shrimp farms, many farmers did not possess sufficient knowledge to adequately manage their ponds. The first shrimp farmers of the Tarakan region (Tarakan Island and Bulungan regency) came from a community of fishermen from Bugis and Makassar on Sulawesi. The lack of knowledge was a serious problem for their businesses. Many fishermen had no experience in running a shrimp businesses. This was strengthened by the land condition which were not fully suitable physical environments because it used to be mangroves, peat-swamp forests or saltwater marshes.

The “Balai Benih Udang” (BBU) (shrimps larvae research centre) in Tarakan under the Ministry of Fisheries and Marine Affairs (MMAF), stimulated the settlement of new farmers in the area. The farmers gained knowledge from BBU which provides a lot of knowledge and experience to the farmer community. The Tarakan ponds grew rapidly when Indonesia was hit by a financial crisis around 1997-1998 and decreased fish stocks. Many people who had been fisherman for their livelihood had to respond to the changing conditions. Fishermen in areas like Berau and Tarakan, Balikpapan and surroundings areas sold their fishing vessels and used these proceeds as working capital and financing sources in order to be able to switch from fisherman to shrimp farmer. This pushed the initiative to open up ponds on the Tarakan Island and from 1998 on in the Bulungan district. Most farmers and pond owners live in Tarakan city and have their ponds in the administrative area of the Bulungan district.

Social and Labor issues in East Kalimantan

In the aquaculture pond areas in the Tarakan and Bulungan region the terms *“workers or laborers”* are not used in the context of shrimp farming. Each pond is generally operated as a partnership between the owner and a so called *“partner”*. Usually the pond (up to 25 ha) is maintained or managed by one partner. The partner is always (year-round) at the pond and the owner is merely sometimes visiting the pond.

There is no need for additional workers, because the partners of a certain area or island work closely together. For example during the tasks of sediment removal, pond monitoring and harvesting are shared by a group of partners. The level of trust between the partner and the pond owner is very high in most cases since there is a strong interdependency. The owner I interviewed in Tarakan is WWF partner Mr. Khairuddin which is one of the small scale farmers WWF-ID works with. The partners on the farms come from Sulawesi, Java and sometimes even Papua. Not from the local community on Tarakan island. This has multiple reasons. First, Tarakan is a fast growing city and there may not have been sufficient workers available. The disadvantage of local workers is that they go home often for social obligations, to sleep, family and so on, this is not efficient and too expensive according to the owners. Workers that come from an area far away do not go home easily since traveling will take a lot of time and money. The costs for local transportation to Tarakan are very high so if workers would go back and forward all the time it would take considerable amounts of time and money, therefore it is uncommon. The partners stay at the farm all the time so the farm is guarded well. They stay there nearly the whole year and sometimes go to the city for supplies, send money to family and so on. It is very rare that the pond management involves workers and payment of salaries. Most ponds in Tarakan and Bulungan work with a model of profit sharing. The partner gets a cut of the total proceeds after deducting the price of shrimp fry and operational costs. It is mentioned that; in one production cycle of shrimp with a period of 3 months in a pond of about 25 ha the operational cost will be about Rp. 3 million (260 euro). Whereas if they manage the pond well the price earned with the shrimp can get as much as 100 million (8000 euro). The production costs mainly vary because of the number of stocked fry and possible repair costs. Since there are almost no inputs used, the investments are very low. The profits will be split between the owner and the partner; usually the partner will get about 20%, so maximum about 20 million, which is 1700 euro for 3 months work, according to the respondents. It is unsure whether this is true. In some cases the harvests are less beneficial or fail. The farmers and partners are usually still able to harvest the wild shrimp and some fish from those ponds. If the harvest is low, the owner may increase the percentage for the partner up to 50%, according to the owners and workers, although it is questionable whether this is true. The workers do not have a contract. All arrangements between the worker and the owner are based on trust, which is common in Indonesia. In some cases the owner records all harvest and profits and gives the money to the worker once a year, usually with interest. The workers mention they have no problem with this arrangement, it is normal according to them. Child labor is not observed and is according to the respondent not happening. Sometimes the wife and/or children of the workers come to the tambak to stay with them for some weeks. They are not involved with the work in the tambak, but seem to focus on the household. Most families live far away in the small villages of Sulawesi, Java and other areas. In general there are no women and children present on the farm. The living conditions of the workers are very basic, although all very basic needs are provided. The working conditions during the harvest are very basic and good working conditions like cover, a roof, boxes to put the shrimp in or stools, lighting are rare and hygiene standards are very low. It seems that some owners do not put much effort in providing this, this depends per owner.

The situation in Tarakan is for some issues non-compliant with the standards. Some of the following issues could be taken into consideration to include in the standard setting. The partners are different from the classification of "workers" in the certification standard. The partners are in a way "co-owners", since they share the risk, although not the investments. This way of working seems to be somewhere in-between pond owner and worker. There are no contracts so working conditions are hard to audit. This might be a cultural difference, since contracts are not common in rural Indonesia. The fact that the partners stay almost the whole year at the pond, should also be taken into consideration. The non-local workers conflict with the standards, but the pond owners seem to have a good reason to do this. The lack of local workforce, different working values and different characteristics among the people from different islands or provinces may be another reason. The living conditions and comfort are low to basic, this is not covered in the standards, but hence the partners live year round on the farm it might be a relevant issue. These points could be taken into account when setting the standards, or should be dealt with when creating guidelines for the auditing. Hence at the moment these issues seem to lack coverage in the March 2010

draft ASC standard. Work safety standards are very low and could be considered incompliant with the standards.

Labor and social issues in Aceh

The social and labor issues are to some extent similar to East Kalimantan. The cultivation of shrimps generally does not require workers. Most of the pond owners do work at the farm; however some owners do hire additional workers. The pond owner often hires a partner to do the daily management of the pond. There is no system of monthly salary or honorarium for the activities of workers in the ponds, except for the temporarily hired workers. Instead there is a profit sharing system used. The partner gets about a 20 percent cut of the net revenue from operating the pond. In Aceh the term “guardian” is often used for the partner, because they guard the products in the ponds. Some farmers will only use laborers during harvest time. Hired laborers that work on the ponds are limited to land preparation such as sediment removal and harvesting. The pond owners can hire manpower/ laborers from the local community if needed. Sometimes workers from a nearby village are hired. In many villages the decreasing profitability of the tambaks caused some of the owners stop their side-job in order to work fulltime on the tambak in order to cut costs and prevent having to hire laborers. This means less employment for community members. There are hardly any women workers on the shrimp ponds. The women from the village often provide additional labor if needed e.g. during harvest. Women workers are only a relatively small part of the workforce. In many cases, there are just two women involved with the harvest. The temporary workers are paid in cash and have no contract. The partners neither have a contract. Their main task is to collect the shrimp and fish from the bottom of the pond. The farmers and partners in an area often help each other during every harvest and during all other stages in the cultivation of shrimp and milkfish, there is less need for additional workers. Because of the bad production conditions the benefits of shrimp farming for the community are decreasing, so is the support for this practice. The lack of contracts is different from the certification demands the partners systems is also used in Aceh.

Off-farm and community impacts in East Kalimantan

Most the shrimp ponds in the Tarakan region are located in the remote delta in the Bulungan district and are bordered by the sea and rivers, only on the island of Tarakan the farms border settlements. Aquaculture generates income for the local economy, seafood and aquaculture is one of the most important economic sectors. There are no communities living close to the tambak sites in Bulungan. There is an indigenous community on Tarakan Island. The ponds on Tibie Island and other islands are not adjacent to agricultural or communal lands. According to the tambak owners there are very few conflicts between tambak owners and fisherman. Most tambak owners used to be fisherman before, like described before, therefore they still have a lot of connection to the fisherman or some are still fisherman. Therefore they avoid conflicts. Decrease of fish stocks and catches does not happen, according to the farmers. According to the tambak owner the land-use conflicts are more relevant with large-scale industrial aquaculture which is very uncommon in the area. Especial those established in the Soeharto era, in those time local communities and indigenous people were considered less. Those who benefit directly from the presence of shrimp ponds in the Bulungan regency are the citizens of Tarakan. It is unknown to what extent local indigenous communities’ benefit. Tarakan’s economic activity grew rapidly, which is attracting a lot of exporting, processing and support companies. These needed work force from both local sources and if the local people do not have the skills or if there are insufficient human resources from other regions such as Java and Sulawesi. The shrimp wealth turned out to be stimulating evil intentions of others. The shrimp ponds in Bulungan are now a target for robbers and pirates.

In general it can be stated that there are no off-farm or community impacts observed in the Bulungan region. There may be some community impacts on Tarakan Island, this has not been studied. It might be that there used to be communities present in the river delta in Bulungan during the time the farms were established, this could not be verified. It can be expected that there are impacts on fisheries, although it is hard to distinguish these impacts amongst the impacts of the rapidly growing economic activities near Tarakan Island.

Off-farm and social positive and negative impacts of shrimp farming in Aceh

In Aceh the community and the small scale shrimp farmers are linked and integrated. Shrimp farming provides a source of income and livelihood for many people in the village in the form of food and resources. Therefore the community in general has a positive perception about small scale shrimp farming. Shrimp farming is often combined with milkfish production. It provides an important source of employment for community members and therefore financial income. The smaller shrimp and a part of the milkfish production that is not sold provides food for community. Hence these benefits the shrimp farming contributes to poverty alleviation in the community. There are no cases of theft of shrimp within the communities. Mobilization of the population, the fact that people migrate to rural area with shrimp ponds from the other villages and rural areas is seen as a positive effect by most community members, because they need the workers. The shrimp ponds generate income and increase the community's economic activity. The ponds provide labor to mostly man in the community in some cases women can get a work in the tambak to remove the sludge. According to the farmers, people can collect some milkfish during the harvest for free; the shrimps are too expensive to share. In the times there was still high production; women were hired for minimal wage to collect the shrimp from the pond. Today this is not practiced anymore the farmers do it themselves, since the production is much lower. Nowadays a significant part of the community is unemployed, because the shrimp pond production went down. The farmers and fisherman mention there is no influence of the amount of fish in the river due to the increase of the tambak area, nothing changed in the river they mention. The quality of the water is still the same as the time there were less tambaks they say. In many villages the nearby rivers are used for fishing and crab and shellfish gathering, but not frequently anymore and by less people, according to community members, shrimp farming is a possible cause. Many abandoned shrimp ponds are now used to raise (wild) fish. Women gather shellfish in the river, they mentioned that the abundance of shellfish keep on going down because of pollution by the shrimp ponds and sewer water and pesticides from upstream villages and cities. The former widespread use of chemicals in the shrimp ponds caused the abundance of fish, crab and shellfish to go down in the areas and rivers adjacent to the ponds according to community members. The women collecting shellfish in the river say that they can still gather large amounts of shellfish there, although there used to be more in the past and more people could depended on those shellfish. According to the male fisherman the amount of fish has gone down. The catch from the rivers is used as subsistence food or is sold on the local market. The presence of the shrimp ponds also facilitates communities' members' access to the nearby rivers they mention. Hence the ponds border the river and they do not have to cross the former mangrove forest. The community attitude towards shrimp farming is decreasing they say, but since there is no other source of income in the village itself people try to "*make the best of it*". Many farmers nowadays survive are merely relying on the harvest of milkfish rather than shrimp. The shrimp farmers receive support from the surrounding community; the Imam, Islamic religious leader and the community leader strongly support the cultivation of shrimp and fish in this village. According to most rice farmers and rice field workers in all cases the tambaks are situated downstream from the rice fields, so there is no influence of saltwater from the tambaks in the rice fields. The rice-fields can to some extent handle salt water.

In Aceh Communities and small scale farmers are linked or integrated and can hardly be seen separate therefore there have been no significant conflicts within community observed. It is likely that for communities with small scale farming it will be unusual for the community as a whole to be unhappy on the impacts. Because the community and the farmers are one, there is a strong interdependency. The community members contribute themselves to the negative impacts and therefore accept the consequences like salinization and decreased fish catches. It is likely that some people in the community are not happy at all with the shrimp farming. But this is hardly expressed. Probably also because the village leader, imam support shrimp farming, in general most rich and powerful people in the community are involved in the shrimp farming or own at least one pond. These types of social criteria and community impacts can be considered very hard to check, especially in a small time frame and as outsider, I and the consultant had difficulties with this.

Community VS external stakeholders' conflicts in Aceh

Like described before the communities internal politics often prevent the community as a whole to be unhappy with small-scale shrimp farming. Although in many cases the community blamed outside factors or stakeholders as the cause for the decreased aquaculture productivity, decreased fish catches or others negative impacts. In Ujung Pacu this is the case community members and farmers mention that in the 80-ties the local fertilizer factory (PIM) has changed the river estuary and has normalized the river and straitened the river. This caused that the tidal influence reached further inland and salt water entered the rice fields. 60 ha of rice field has become unproductive, some of these were later converted into tambaks. The rice production has moved more inland and therefore swamps needed to be converted. The salinization of the rice fields and the changed hydrology is completely blamed to the factory. Besides that also the decreased productivity is assigned to pollution caused by the fertilizer factory. The community members say they did not have any influence on this. The construction of the tambaks and rice fields had not influence at all on the water quality and water quantity according to them.

The commercial and subsistence fisherman that fish in the river with hook and line, fykes and cast-nets have been fishing here for many years mention they have not observed any changes in the amount of fish the caught and no change in the species of fishes.

In Masjid Utue the farmers blame the upstream village which has rice farming as the main activity to pollute the fresh water and use too much fresh water. The farmers mention that the pollution with fertilizer and pesticides decreases the productivity of their ponds and decreases the amounts of fish and shellfish in the river and mangroves. This might be amplified because the upstream village is solely producing rice and Masjid Utue is for 95% dependent on aquaculture.

In Matang Lada the village leader and shrimp and milkfish farmers blame the fisherman from Sulawesi for the decreased near shore marine fish catches. They mention that the fisherman from Sulawesi fish too close to the coast with their trawling vessels.

If asked for most community members and farmers do not feel responsible themselves and often start blaming outsiders. In Aceh the Tsunami is often a significant influence on the productivity of the shrimp farm production and is often mentioned as a reason of decreased productivity and the increase of diseases, it is unsure to what extent this is the case. It is logical that the farmers themselves also have a significant impact on the production conditions, environmental conditions and the carrying capacity of the area.

The farmers (local) knowledge in East Kalimantan and Aceh

The management of the ponds in the city of Tarakan and Bulungan District is done traditionally. In Aceh most production is traditional plus, which means with low input of fertilizer and feed, some farms are semi-intensive. The farmers are not using modern technology e.g. to measure salinity, temperature, alkalinity, and other parameters. They measure the condition of ponds based on their experience. Traditional knowledge of the farmers and partners is generated from their experience from managing the pond and trial and error experiments. It is for example an outstanding knowledge of tidal cycle calculation to determine when they should start cultivating and harvesting or let new water in. Currently they also use a tidal calendar. In general it can be stated that the small-scale farmers have very limited technical knowledge. For example concerning;

Pond water quality: According to the farmers good water quality can be observed from the color and flavor of the water. The farmers usually can tell from the color of the pond water if it looks clear or acid. In addition farmers use a flashlight to determine the salinity of the water. They believe if the conditions of pond water are saline the water will sparkle if shine on with a flashlight. Brackish water usually appears brownish and has slightly bitter taste. The abundance of the water-snake can be used as an indicator of the use of chemicals of chemicals are used the abundance of water snake is very low or absent according to the farmers.

Knowledge of farmers about the shrimp diseases and viruses: In many cases the farmers do not know what kind of diseases and/or viruses infected the shrimp. The knowledge about the shrimp diseases is based on from their daily observations in the pond. The farmers do not know that the tools they use e.g. to catch crabs, can be contaminated with viruses and diseases.

Environment: The farmers mention that there have been so many changes the last two decades that they cannot always apply the knowledge they learned from their parents anymore. In Aceh the farmers often blame the tsunami for this in addition.

This lack of technical knowledge may create challenges for the farmers to understand the certification demands and possibly to meet the standards. Many of the certification indicators are expressed in parameters that are unknown to most farmers. Traditional knowledge may be insufficient nowadays because the carrying capacity is exceeded and the environment has changed so much that it is less applicable. Traditional knowledge is also forgotten and lost because modern and technical knowledge has been promoted mainly by government and feed companies. Therefore the farmers seem to have a lack of knowledge. The farmer's practical knowledge to manage the ponds does not necessarily make their harvest successful. The carrying capacity of the environment in Tarakan is relatively good which makes the production easier, although the productivity is very small per ha (about 30 kg). In Aceh this is not the case. It seems that some farmers have traditional knowledge about the impact on the ecosystem. I did not study this in detail. It could for example be used as a way to express certification demands or BMP in ways that are easier to understand for the farmers. For this traditional knowledge there is no attention yet on what a traditional standard is. This type of knowledge could be used for how to reach the standard, but not for the standard itself according to many respondents in this study.

Production and side jobs in Aceh

Before the virus outbreak in the 1990s shrimp was the main source of farmer income in many coastal aquaculture villages, the 2004 Tsunami was another disaster for the farmers. Nowadays most farmers had to find other sources of livelihood and side jobs besides shrimp and milkfish farming, because the production has dropped. This happened both before and after the tsunami. The farmers say *"we cannot get all our income from the ponds; viruses, diseases and the tsunami have destroyed our livelihoods"*. The decrease of production has multiple causes; 1 the use of too many chemicals e.g. pesticides and fertilizers in the pond; 2 disease and viruses and 3; the use of chemicals, fertilizer and pesticides upstream the river in the rice fields. 4. Environmental degradation. 5. Lack of knowledge. Most villages are mainly depending on aquaculture, there are few other alternative livelihood income sources. There is some extensive subsistence farming, animal -goats, cows, poultry- husbandry, rice, banana, coconut, cassava farming or people work as worker in agriculture or construction.

Because many farmers feel shrimp farming is a tricky business they get less and less dependent of shrimp farming. They switch to milkfish production for the local market. This causes a decrease in demand for laborers in the surrounding villages; lack of revenues for the community, less management and more and more farmers seem to take on a side-job in order to provide the livelihood of their family. This causes that the farmers are less interested in aquaculture and give it a lower priority. This makes it even harder to improve the production, create farmer groups and collective management (planning).

Social institutions in East Kalimantan and Aceh

Tarakan/Bulungan; Most farmers do not see the benefit of making a farmer group, they say they have to invest more time and it has no additional benefits for them. There is a farmers association, but these are often inactive. Informally there are groups of farmers who group their harvest in order to get a better price. The partners on one location are usually a close community, because the areas are remote and often unsafe. In many areas the partners have formed an informal group as a medium of communication between them. They discuss the pond managing and most conflicts are resolved within the group. There are almost hardly ever conflicts. Members of the informal groups are typically from one area e.g. Java and are located in the same pond area or island.

Aceh; In many villages the aquaculture production system is a major point of discussion since a large part of the community is depending on the incomes generated in the ponds. The WWF/NACA BMP project in Masjid Utue had amongst others the goal to promote the formation of farmer groups or clusters. The project started off successful but at the moment about one owner and a few workers is still part of the project. The farmers say they rather continue to work in the way they used to. They state that WWF should try to empower and support the already existing groups in the community instead of building a

new one, because it will overlap with the established institutions. In Ujung Pacu there are two pond owner/farmer organizations in the community, both manage about 35 ha of ponds. The farmers groups were started in the 1980s, because it helped the farmers to invest in larvae and to harvest together. But the main reason was because it is a way to access outside capital.

The local government gave subsidies in the past to groups of farmers to improve or open up ponds. Therefore many farmer groups have formed for this sole purpose. Sometimes these groups still function and its members help each other with e.g. investments. Most of these groups are not confined to one area or watershed but usually consist of members from one community. It seems to be very hard to make official farmer groups. Informally they exist, but usually not with the best design and site-ing. Grouping/cluster farmers is often mentioned as a solution but it should be done carefully matching social structure, older groups and watersheds, so flexible to the local context. The incentive for the farmers to join should be one of the main considerations in order to be successful. It will be very hard to make sustainable clusters, some people will join the capacity building projects for the money but will back out when the project stops and will therefore endanger the whole cluster. This is amplified by the fact that for some farmers' aquaculture is merely a side income.

Shrimp marketing and trading systems in the Tarakan region

Shrimp is one of the main export commodities of the town of Tarakan and one of the driving forces of the local economy. There are five shrimp exporting companies in Tarakan which all give about the same price to the producers. These prices are set about every two months and are published. In order to meet their orders the companies have a commission system in which they can offer an extra commission on the basic price in order to convince producers (farmers) to sell their shrimp to them. If the shrimp price drops the commissions drop as well. Conversely, if the price of shrimp increased, the commission does not increase or tend to be stable. The partner does not get a part of the commission; they get merely an e.g. 20 percent cut of net revenue using the receipt of the sale. Market access for the farmers seems to be no problem in Tarakan. If the quantities are low, there is a need for a collector or middleman who bundles multiple harvests. The middleman locations, locally called "*post*", are located in the delta between the producers and the processor. The price the farmer get for the low amounts of shrimp are lower than when he would sell directly to processor. Some of the bigger farmers sometimes also function as a middleman and group different harvest in order to create one big shipment.

The farmers have almost direct market access and have the option to sell to different companies, although those almost have the same prices. This direct relationship is positive for the farmers, and can make it easier to implement certification. On the other hand because the farmers already have direct market access, some bargaining power and a relative high price they have less incentive to join certification and meet the additional demands.

Shrimp Marketing System in Aceh

The marketing abilities and strategies of most shrimp farmers in Aceh are weak. Most marketing mechanisms still revolve around- and are dependent- on the middleman or collector. Farmers do not have direct access or buyer relationships to the shrimp exporting and processing companies. The farmers do not have a strong bargaining position in the shrimp marketing system in Aceh. Small scale farmers usually sell their shrimp to the "*toke*" the collector or middlemen. The small shrimps are sold on the local markets in Bireun, Lhokseumawe and Banda Aceh. The big shrimps are transported to Medan. The farmers have limited access to- and information about the price of shrimp in the local, regional, national and global markets. The *toke* is the financier that is providing most of the working capital for the farmers and often functions as the collector of the produced shrimp. The *toke* or financier does not impose an interest rate on the loan, but the farmer must sell their harvest to the *toke* in return. The price the farmer will get is lower than the actual price on the market. Most of the farmers are only aware of the shrimp price on the local and regional market. The main reason why farmers sell their shrimp to the *toke* (or middle man) is their lack of capital. Many farmers are dependent on the *toke* to get their supplies, like feed, fertilizer, and pesticides, because they do not have the capital themselves to buy it from the supplier. The farmers are therefore forced to sell the shrimp to the collector or middle man in order to pay back the debt.

Farmers can obtain medicines, fertilizers, and feed for the shrimp without paying in advance under the precondition that shrimps are at least two months old. The shrimps will become collateral. After harvest a part of the harvested shrimps has to be given to the middleman as repayment. The collector subsequently sells the collected shrimp to the middle man.

These conditions put farmers in a very disadvantaged position; because they sell their product to the toke they will get a less fair price. In some case this causes that the famer can not cover the production costs in case he has a less successful harvest. The current state of the shrimp production in Aceh is relatively far from optimal and can be considered bad. At the same time the production costs for the farmers continue to rise due to rising prices of feed, fry, fertilizers and pesticides as well as the increasing cost of daily life, food, education and others. In addition, there is no institution that serves as assistance to market the shrimps of farmers who can not sell their harvests directly to the exporters. The FAO and Worldfish Centre have been trying to improve this with the Aquaculture Livelihood Centers (ALC), but only a limited amount of small scale farmers has access to these. This is also influenced by the absence of initiatives like cooperation and farmer groups involved in marketing and improving the marketing system. In some cases/villages they exist but they do not include the marketing in their activities. So groups of farmers are no guarantee for sufficiently increased bargaining power to get around the collector or middle man. In the perception of the farmers the current shrimp marketing system is making the shrimp farmers very dependent on the toke and middle man and puts them in a weak position. The current system makes it hard to improve their financial position and bargainer position. The limited knowledge about the prices and the market by the government authorities and the low level of governance interference causes that the price is mostly determined by the middle man. The farmers' state that shrimp even tough being a valuable commodity and good food it is in many cases unable to provide a good livelihood for them. This lack of bargaining power, market access creates a good incentive to join certification capacity building or BMP projects. The very limited knowledge concerning the market and its demands and lack of organization make it unlikely that farmers become compliant or try to get certified on their own initiative. The farmers do not have much knowledge about the market and commodity chain.

Role of the Village leaders in Aceh

The village leaders in Aceh – the Keuchik - were in all cases involved in shrimp aquaculture. In most cases the daily management is executed by the partner. The village leader is the most powerful person in the village or community and since they are usually involved in aquaculture, the other community members do not express direct criticism about the aquaculture impacts. Every few years there is a new village leader elected from the influential men of the village. In most cases all influential people are involved in shrimp aquaculture. The village leader is a crucial factor in getting permission to do research and to start a project. In Tibang the village leader is extremely rich if compared to the other community members. He was living an enormous house, while the other people were living in prefab building constructed after the tsunami. So care should be taken how the project money gets divided when implementing capacity building projects. In many cases the village leaders expected a project or aid if came to the village and often asked for this. The large number of aid projects after the tsunami seems to have had significant impacts on the people of Aceh and seems to make them passive and dependent on aid.

Concerning their main needs the farmers in Ujung Pacu mention;

“our number one need is capital, because we want to invest to intensify the ponds, buy feed for shrimp, maintain the pond, buy fertilizer and pay labor”. Other needs are a lower price of feed and higher price of shrimp. The farmers mention that the costs to improve the production system are higher than the benefits. The farmers' state; *“We don't know who should help us to improve, but our main needs are higher price of shrimp and lower feed prices”*. The farmers' state; *“pesticides kill the worms, the feed for shrimp, and also the fish in the ponds and river so we remove the shellfish from the pond to reduce the need to use pesticides”*.

Gender issues

The small scale shrimp business and production is dominated by men. All farm owners in this study were men, all partners were men. In some cases there were female workers, although not in East Kalimantan. In Aceh female workers seem to be getting rarer since the production is going down and the farmers do more of the labor themselves. The activities of the women mainly revolve around the harvest – which is about maximum 3 dag in a cycle of at least 90 days- and during the sludge removal. Female workers are the main workforce in the processing plant in Tarakan, but these have not been covered in detail. In some small scale hatcheries in Aceh women are not allowed because people believe they will give bad luck for the shrimps and larvae. On the contrary, the hatchery Director of the brackish water Aquaculture Assessment Centre of Ujung Batee is female.

Smallholders' relationship with surrounding environment

The farmers' relationship with the surrounding environment is influenced by ghost stories, spirits and unexplained phenomena and is often negative because of "bad" or dangerous animals living in mangroves and marshes. Ecological services and biodiversity seem to be western discourses, the farmers do not think in such a way. Religion and god play an important role, god decides if it will rain or not and god will send fish to their nets or not. In other words, the community seems to be dependent on God's will, but they are not willing to protect the environment because of the God's supernatural power and they consider their actions to some extent insignificant in relation to environmental changes. The often negative or neutral relationship with the surrounding environment may be an explanation for pollution and destruction, limited environmental awareness and knowledge are additional reasons. The farmers often mention that the mangroves provide food, fish and crabs to the community and they often mention that they are positive about the mangroves. In practice, my observations show that most farmers cut the mangroves in the ponds and rivers even if those have been planted during a project. The farmers often do consider the planting of mangroves in the pond – like promoted by NGOs- as unpractical.

The farmers mention that they have converted otherwise valueless lands or dangerous lands into productive lands by converting them into shrimp ponds. In general it can be concluded that most small scale shrimp farmers have a quite negative perception about mangroves and marshes. The people's main priority is to improve their livelihood to that respect the mangroves have less perceived value because in many cases they do not provide much primary services. The secondary services that are provided by the mangroves are often not recognized. To the perception of the farmers this indirect effect is hard to prove, there are so many other factors that can have provided these services. The knowledge about the ecosystems is very limited, so knowledge and effects that are perceived to be basic knowledge in the North are not present in the rural villages. This may be explained due to the low level of education of the farmers.

WWF-ID has one field facilitator stationed in Tarakan, Mr. Dhimas he works together with farmers to promote mangrove rehabilitation and silvo-fisheries. WWF is focusing on replanting (red) mangroves in the ponds to create some kind of silvo-fisheries system. According to WWF this will increase the productivity.

Solutions, needs and challenges to improve aquaculture – according to the farmers in Aceh-

Capital is the main limitation for the small scale shrimp farmers in their pond management. They state they have no money to invest in the management and maintenance of the shrimp ponds. The farmers especially lack capital in terms of land preparation and sludge removal, thus the results obtained and harvested shrimp amounts and quality are sometimes far from the expected results. According to the farmers this is caused by the high management costs that are required and the increasing labor costs. Most farmers do not want to invest their capital to switch to a more intensive system, because it is no guarantee that it will improve production and profits. The farmers rather save costs and switch to milkfish. They say their capital is running low because they already invest a lot and often break even, make a small profit or even lose money. Limited capital and high production costs often force the farmers to harvest quickly, to decrease the production cycle time and get quicker returns on their investments. The downside of decreasing the production cycle length is that the harvested shrimp will be

smaller and the shrimp are harvest even though they still have the potency to grow larger. This is done due to the necessities of capital for the livelihood of the household. One of the main reasons that the farmers have to harvest the shrimp quickly is because the farmers do not want to take the risk to loose the shrimp due to disease they harvest fast in order to be able to pay back their loans to the middleman. Sometimes the farmers have low yields or harvest with shrimp far below the size requirements for the export market, which causes lower prices. Many farmers start using feed when the shrimps are 2 months old to spur the growth, many farmers are unsure about this big investment, due to diseases there is no guarantee that the investment will be earned back with a good harvest.

There is a need for more aid or assistance programs facilitating the shrimp farm management, like the FAO BMP project in Tunong in Aceh, which has been in the village for 2 years. The use of fertilizers and predators/pest exterminators which are environmental friendly e.g. tea seed cake and organic fertilizer/compost has been growing, because of the FAO project. The FAO project has improved the shrimp production in the area and BMP are being practiced.

According to the farmers' public awareness and socialization about the function of mangroves, ecology of mangroves, the function of the river-(system), and wetlands ecosystem should be improved in order to stimulate its conservation and appreciation by all community members.

There is a strong need to continue building and improving the existing farmers group to an institution of shrimp farmers that accommodates, advocates and utilizes all interests and needs of farmers in managing the traditional ponds and can advocate and lobby for the interest for the farmers. The goal is to build a cooperative in order to be able to pass the middle man and sell their product directly to the processing and exporting companies and be able to get bargaining power in order to buy the required resources (fertilizer, feed, medicines) for a lower price directly at the retailer or factory.

Other farmer needs are practical knowledge about pond management, capital and help in order to implement this knowledge and improve the system. According to some respondent these needs should be provided by the government. There have been many projects in e.g. Matang Lada the area before but these had the main focus on providing capital and goods and were therefore unsuccessful.

In general it can be concluded that the main needs for the smallholders are higher shrimp price, prevention and cure for diseases and viruses, improved productivity, capital, BMP, production, environmental, market, certification and social knowledge, improved market access, direct buyer relationship and organization. In Tarakan the prevention of ponds getting robbed by pirates is an additional need for most farmers.

Certification perception and expectation of the pond owners and partners in East Kalimantan

In both cases it was very hard to discuss certification standards, like e.g. ASC or GlobalGAP; there are hardly any experiences at all with certification. In the perception of the small-scale farmers certification, literally translated into Indonesian (Bahasa Indonesia) "*sertifikasi*" it will mean something like land right certification, which is used to show the ownership of the land. If certification is explained the farmers are positive about certification. They are willing to change their practices and adopt BMP. In return the farmers expect to have more benefits than disadvantages from certification. Certification requirements like documentation, contracts and more are considered a big barrier because the farmers have no

Additional remark;

The data from the ON TOR of the community based shrimp certification research mentioned that 85% of the people of the village were dependent on aquaculture for their livelihood, as manager and worker and not as owner. This is very different from my findings. About 30% of the people are involved in aquaculture and almost none of them have it as their main source of livelihood.

experience with this. In Kalimantan some farmers have secondary information concerning Naturland certification and in Aceh there was only one village where farmers knew a very little bit about certification. Environmental issues are usually considered less relevant for farmers.

It seems that many farmers do not see the benefits of the certification for them. They already receive a reasonable good price, usually have a direct buyer relation and therefore good market access. The farmers are willing to change some practices or plant mangrove if they get compensated for the extra effort they have to do. If this compensation is considered not worth it, it can be expected that the farmers will not cooperate. Or in other words if they will receive a premium price so compensate the loss of production or increased labor expenses which the farmers expect if they e.g. plant mangroves in their pond. The farmers are generally supportive of efforts to improve the aquaculture sector. Export based certification like ASC is unknown for most farmers; some have indirect experiences with the organic Naturland certified system.

The certification standards –based on the Naturland experiences- are considered too complex and too time consuming, mention the farmers. The farmers “complained” about some of the certification criteria like replanting the pond dike. They mentioned that it would be impossible to do this because the dikes are used as road on the island, to grow fruits and vegetables and to catch crabs during the night.

The farmers do not see the benefit of the certification for them, because they do not get additional money, they only have more work to do.

Some ponds are “certified” by a Japanese “standard”. The workers say “certified” but in practice it is not officially certified, but the pond is regularly checked and visited by the Japanese buyers. The farmers like the Japanese method better – auditing based on trust and with low requirements -, because it requires no additional work or demands from them. The farmers in Tarakan and Bulungan in this study and their partners do not keep any records or documents of the inputs. Production and prices are sometimes documented. In general the farmers do not see the need for certification, most shrimp from Tarakan is exported to Japan. The Japanese buyers value personal visits to the processing plants, storage and farms over certification. The farmers say that they will sell the shrimp anyway because there is a lot of demand at the processors. If I explained the farmers what export certification is they mention that they like the premium price and improved market access, those are priority number one. The farmers and workers like the Japanese informal auditing method (of MMA) better, because it is no additional effort for them. The farmers like the premium price although there is not much confidence in a premium price.

The farmers do hope that certifiers and NGO’s can support them to improve their farming system and prevent diseases if they change some of their impacts on the environment e.g. planting mangroves and stop using pesticide. Other points of attention will have lower priority, protecting the environment and surrounding natural areas is no priority according to the farmers, reducing social and off-farm impacts has an even lower priority. Making money is priority and the main concerns are price, trade regulations, diseases and how to increase the productivity.

There is not much confidence in the premium price. Farmers are more positive about certifying the quality of larvae in order to guarantee the quality. Often when I mentioned certification the certification of larvae was mentioned by the farmers. Reducing impacts is almost never mentioned by farmers and government, only concerning pesticides. The farmers mention that if someone comes up with a more sustainable system and/or demands that deliver the same or higher productivity the farmers will follow this initiative. The owner and workers are willing to make adaptations to the pond if it will increase productivity or net revenues. The farmers are all willing to meet the demands for mangrove planting if this is required for certification. They have only one demand; there should be a guarantee that their income and preferably also production will stay the same or increase.

Certification perception and expectation of the pond owners and partners in Aceh

Most of the result come from Tunong, because this was one of the few location were the farmers had sufficient knowledge about certification to discuss this topic:

In the perception of the small scale farmers certification being literally translated into Bahasa Indonesia “sertifikasi” it will mean land right certification, which is used to show the ownership of the land. Environmental and social certification for export is unknown by all Acehnese farmers in this study. The government certification program CBIB is also completely unknown to the farmers, since it has not been implemented in Aceh yet. There is a willingness from the farmers to meet the demands for export based certification such as GlobalGAP or ASC. Social standards are OK for the farmers if they do not get too demanding, according to them. Environmental impacts reductions are supported by the farmers, preservation of the environment, such as mangrove and Nypha vegetation, wetlands and sensitive areas, although many farmers on the contrary have a negative perception about the mangroves e.g. that they cause leaks in the dikes. Farmers are most supportive to (re)plant trees in an agro-forestry system with useful crops and fruit crops mixed with natural vegetation. There is a strong willingness to improve and change the management and ponds practices which are considered as (environmental) destructive behavior, according to the farmers. There is strong willingness to use certified fry that is free from all forms of viruses and diseases. The farmers only want to buy from companies where hatchery fry has been (PCR) tested negative for viruses and diseases and it is certified, but often lack the resources to do so. The farmers are willing to document all processes ranging from the pond preparation till the harvesting phase and all inputs in between. It is possible to do so if the farmer community will be trained beforehand is mentioned. There is a willingness to carry out food security requirements (and environmental) e.g. by reducing and eliminating the usage of chemical fertilizers and pesticides. The farmers want to adopt BMP and environmentally friendly practices in the pond management e.g. using organic fertilizers in order to operate the ponds in a more natural way. This is especially supported if it could reduce production costs compared to the benefits. Under-age workers are not common at all in small scale shrimp farming systems and the farmers are willing to continue the custom not to employ children or under-age workers. The farm owners mention they want to provide higher incomes for the partners and workers, but since their benefits are also low they cannot. This is also influenced by the profit sharing system. The farmers want to put effort in obtaining legal land-rights certification from the relevant institutions the National Land Agency - Badan Pertanahan Nasional. After the most important demands of certification had been explained, according to the farmers most of the principles of certification can be met by the shrimp farmers if the farmers get certainty to get a fair price for their shrimp and support to get compliant. According to the farmers certification requirements should also be check by “talking to the government” The farmer-group is continued after the FAO program stopped one month ago. It is good to group the farmers; it is a good way to share technical knowledge and pond management practices they say. There is

The farmer group leader in Tunong perspective

Mr. Azah would very much like to be certified and certify the whole cluster he is leading. The cluster was build with help from the FAO. He is confident that certification will improve the price he will get for shrimp and improve the income of the farmers. He would like to replant mangroves if the certification system would require that, although not in the pond because that will make the water dirty. The replanting should be done in the rivers and canals. Certification and testing of larvae is very important according to him especially on quality and virus/disease (DNA test). He is also positive about the production of organic shrimp, which s much healthier according to him although it is hard to produce. Many farmers are pessimistic about the future but it seems that the group leader said he is more confident that the group can improve. He is very positive about the BMP training by FAO because it has given him knowledge. Mr. Azah realizes that the former management was not good and not environmental and that the environment was damaged. So he liked to improve it. BMP are a good tool. He likes the technical and ecological knowledge he has gained from the training and he would like to learn more about the shrimp production. Unfortunately the production of his pond is still the same as before the implementation of BMP and FAO program.

no fee for member to become member of the group. In order to improve their production and livelihood the farmers need the ALC (Aquaculture Livelihood Center) which are set up by different international and national institutions to aid the farmer groups.

Perception on certification of the Private sector in Tarakan PT Mustika Minanusa Aurora (MMA)

MMA is not involved in certification schemes. In 2006, MMA started a mangrove conservation initiative with the World Wildlife Fund in Indonesia (WWF-ID). MMA partners with WWF-ID to implement BMP. MMA is mainly working with informal auditing in which the buyers regularly check the farms, but this is based on trust and is “not on paper”. MMA’s European and U.S. buyers favor certification which is formal and documented. MMA feel that the farmers should benefit from certification. According to MMA traceability and uncertain land status are problems in Tarakan, organizing the farmers would be a part of the solution. Documentation is a challenge in Tarakan. The environmental impacts like pollution, water use and so are all minimal. The hard side is the tractability and documentation, which is very hard for the farmers. So it depends on the buyer what is more important to them. *“For intensive systems it is basically a documented system on how bad we threat the environment, but it is documented, so it is accepted. Here it is quite OK, but there is no documentation, so it is not accepted”* (for certification). Certification will be hard to implement it is too expensive for MMA and for the farmers. The farmers want a benefit but cost for the certifier are too high and make the price benefit negligible if the end consumer will not pay for the certification costs, it will not work.

Mr. Choo of MMA is unsure if it will be realistic to do one generic standard and not two standards, one for small scale and one for industrial scale shrimp farming. Mr. Choo feels that the ShAD draft standard is geared towards more intensive systems and written for large scale intensive industry. It is not directly applicable in Tarakan. Most of these certification schemes only benefit one party and that is the certification body.

MMAF Government perception on certification in Tarakan and Aceh

The Indonesian government has developed a certification scheme called *“Cara Budidaya Ikan yang Baik”* (CBIB) -or the good fish cultivation ways in English. CBIB does not include social standards, but is focused on low requirement BMP especially geared towards food safety. The program has not been implemented in Aceh yet, but farmers and processors in Tarakan and Bulungan have been certified.

The government is often mentioned as the one stakeholder that should “check” aquaculture practices and should be included into certification according to the smallholders and community. In general it can be stated that the government data is in many cases of low quality, inconsistent and contains errors. In Both Tarakan and Aceh there are still many ponds are being opened even though it is illegal. Government not seems in many cases not to be very effective and well coordinated. There have been many internal conflicts between government departments and government levels observed. For example Tarakan: Based on the land status it can be stated that all shrimp farms in the district Bulungan are officially illegal

The farmers in Tunong;

“We know that it is important that there is certification” and “We know we depend too much on external aid”, “Because of the external aid we have become passive”. Although in general the farmers seem positive about certification and its possible benefits they also say; “We are very pessimistic about the future now the FAO has left one month ago”. “We know that the European market does not allow pesticides”. “Traceability (did not used this exact word, but mend this) is hard, although we keep records. But shrimp from different farmers are mixed and sorted on size in order to create large quantities of big sized shrimp”.

Concerning certification the farmers in Ujung Pacu say; *“we do everything what they want e.g. mangrove planting, as long as it will improve our production and/or benefits”.* Although the farmers mention; *“it is hard to put things on paper or document it, we are not used to it, so what is the benefit?” and “many people cannot read and write, so how should be document things?”*

according to the forestry department. However, the farmers have obtained permission from local governments in the form SIUP (Surat Izin Usaha Perdagangan, the Fisheries Business License. The existence of these ponds in the context of the SIUP gives the ponds a legal status for the local government. Thus there is a conflict of interest between the ministries of forestry and of marine and fisheries. This uncertain land status makes it impossible to certify the farmers in this area, based on the first principle of the ShAD draft standard.

It seems that in both areas the MMAF departments have a lack of resources to implement BMP and support the farmers to improve their production. Enforcements of regulations and policy seems to be hampered as well by the lack of resources.

In Tarakan the local MMAF department is focusing on CBIB certification and promoting BMP. The focus is on food safety and production, then environmental issues and social and community impacts have least priority.

In Aceh the CBIB certification guidelines made by the national department are very hard to implement in the field for the province according to the provincial aquaculture head official. The guidelines may be too complicated for the small scale farmers. The same goes for the BMP guide by a consortium of ADB, WWF, FAO, government and others (ADB et al, 2007). The aquaculture head official is very pessimistic about possibilities for certification and the applicability of certification for small scale farmers. Until now there has not been any certification in Aceh. The officials mention they are very willing to provide help if it was required to implement a certification program. The MMAF department is focusing on BMP to stop the negative environmental effects of shrimp farming. There is no attention for social issues.

According to the officials the focus of certification should be on the production of the shrimps and less on the impacts on the environment and social are less relevant. If social aspect had to be included they would suggest a focus on labor issues, land ownership, worker welfare, livelihood, welfare impacts on community and impact on community these issues on community issues. They give the example that the education level of the children can be a good indicator for welfare.

How to approach the smallholders and communities

Like described by the story of the small scale farmer that went to the ShAD meeting it seems that inviting small scale farmers to that kind of meetings require a lot of money and time and may not deliver that much input. Therefore it would be better to have meeting with small scale farmers in the village itself or in the pond area. On this location the farmers are more comfortable and can directly show what they mean. To that respect it is important to use multiple methods e.g. FGD, individual interviews, questionnaire in order to be able to cross check the result. Hence I concluded that the results can differ very much depending on the used methodology and approach. If one wishes to get information on the community perception the same it applicable. Care should be taken when community members and farmers are mixed. Hence most farmers are influential people they will out-power the community members and dominate the group interview. The results of the Focus Group Discussions (FGD) were heavily influence by power relations, culture and profession/interests of participant. They are a valuable tool but should not be the only one. For example during one FGD the two leaders of the farmer groups are active in telling information, the other participants are very silent e.g. two others may sometimes add something to the “discussion”. The FGD can in most cases not be considered as a discussion but merely a few people providing the information and answers and the other participant confirm that information or remain silent. During the FGD it seemed that the respondents seem to speak as a group, no one speaks out and try to “copy” the other respondents’ answers. A FGD can deliver very interesting results and lots of information about the system, but the more sensitive issues will not be represented fairly.

During the study it became clear that the local stakeholders and farmers know how to adapt their framing of their needs to access aid. For example the farmers adapt their framing about the value of mangrove forests to access aid, but their practices differ from their framing (adapt agency to NGOs discourse).

It is very important to cross check and triangulate the result you get from the respondents, especially in interviewed in a group, chance of getting socially desired answers is very high. The research methodology should be in a way of an “investigation style” in which results are triangulated with result from other methods and stakeholders in order to get a realistic perspective. The respondent often repeat some of

the information that has been told to them by the consultant e.g. about the functioning of the mangroves and the advantages of the mangroves. In a way they adopt and frame their needs/knowledge to the result they expect or the consultants wanted to hear.

During the limited time available it was hard to get a real objective representation of the interests of the community. It seemed that some of the respondent did provide “*the expected/desired answers*” and were trying to represent their case in such a way that they would get funding to improve their system.

I have not included the community perception on good shrimp farming practices. The farmers in East Kalimantan are very positive about the traditional farming systems and see it as the system to the future. In Aceh this is different, some farmers tend to switch back to traditional farming because it is cheaper and it will reduce environmental impacts. Those farmers identify the need to reduce the environmental impacts. Other farmers do want to switch to more intensive farming systems but often lack the resources to do so. The farmers in Aceh do want to change their practices and reducing pesticide and chemical use is often mentioned, because farmers start to realize some of the negative impacts of its use. I have not included any aspect on how they farmers or communities perceive possible improvements in the existing standards.

BMP projects

Although this has not been studied in detail and can conclude some things from my data. In Aceh it seems that the aid projects –amongst which are BMP projects - often make the farmers dependent and passive, because resource were provided with no or low conditions/demands. It seems that investing in knowledge is more successful, but there should be an initiative to implement the new knowledge e.g. price or production otherwise the farmers will continue as usual. The effect of NGO projects is usually short term because it seems they are often not in the interest of the people or not suited to the needs and the production system. But for example the WWF/NACA BMP project had some positive result. Some farmers had very good shrimp and milkfish harvests when implementing the BMPs although many of them have stopped with it nowadays. Another effect is that most farmers have moved away from chemicals to kill fish and have switched to tea seed cake.

Certification perception and expectations conclusion

Certification is not known by most small scale farmers in this study, only in East Kalimantan there was some experience with Naturland certification. The smallholders are mainly interested in getting aid, better shrimp prices, cheaper resources and more production. In case the buyers or processor offers a higher price for environmental and social friendly practices farmers are willing

Position of small scale farmer concerning ShAD meeting Jakarta

The respondent from Tarakan and Bulungan is working with WWF on improving the farming systems and possibly replanting mangroves that is why he was invited by WWF to join the ShAD meeting in Jakarta. In his perception WWF cares about the mangroves and preventing pollution with pesticides and fertilizers. In a way he is neutral about this. He is willing to cooperate as long as he is compensated for the increased time, cost and efforts that come along with planting mangroves in the pond and around the pond. About his presence on the ShAD meeting he was quite negative. He liked the trip to Jakarta, but he did not really understand the issues of discussion at the meeting. First of all he could not understand the translation of the translator; these were very poor quality and did not translate the discussion but merely mentioned were it was about. The translated draft ShAD standard document was very badly translated, like one of the participants mentioned “*like it is done by a computer*”, this was not very stimulating. Because the discussions were in English he could not follow the discussion and did not make any contribution to the open discussion. During the sub-group discussion he joined the Indonesian speaking group, but he found the discussion too technical and too much focused on intensive systems. So the discussion was quite far from his reality. Principles about feed, input, biodiversity and topic like that he did not understand and did not see the relevance. Only points of discussion that are close to his reality he found interesting e.g. diseases. Therefore he often was just laughing about the bad translations and joking with his fellow small scale farmer, which was also invited by WWF and had the same opinions.

to meet the certification standards and demand on one simple condition they want to get compensated or make more money, they are entrepreneurs after all. Some important certification standard demand may conflict with (social and cultural) practices e.g. contracts, farmer groups, property rights and documentation. In general it can be stated that the small scale farmers in East Kalimantan have a high potential to get certified. They are not compliant yet, but can become compliant relative easily. This is based on the relative low environmental and social impacts, short supply chain, direct relationship with processors, and low influence of middle men in the commodity chain. But there are various challenges like, lack of contract, documentation, low mangrove abundance, traceability, food safety (hygiene during harvest) and the fact that the workers stay year-round at the pond site will be challenges that need to be overcome or dealt with. Like was also mentioned by many respondents; the small-scale farmers do not pollute that much, but they have nothing on paper to prove it. Concerning the social standards there are more aspects that are not compliant with certification demands. These issues have been summarized in table 1. Off-farm impacts can be considered minimal in East Kalimantan, in Aceh there are more off-farm impacts, mainly on fisherman and women that fish in the rivers and mangroves on fish and shellfish. Those conflicts are often not very visible, it is more often the case that there are inter community conflicts instead of intra-community conflicts.

If off-farm impacts and community impacts or possibly community based standards will be included in the final ASC standards the farmers will have to go into dialogues with surrounding communities on their social and off-farm impacts. The farmers are facing the challenge how to dialogue and whom to include. They possibly need facilitation and support to do this. The auditors need to check whether farmers do such dialogues seriously and with integrity. It is the "responsibility" of the farmers to find out about possible social impacts that are audited and not the impacts themselves it is their responsibility to solve the social and off farm impacts that surface from those dialogues, which will be audited. It could be the case that the farmers have to look at a very large area with many stakeholders in their have severe impacts. No matter how big the impacted area is, the audit job will be the same everywhere. The higher the scale of focus for certification the more stakeholders and the more complex and time consuming the dialogues for the farmers will get. In some areas it may be relative easy like in Tarakan were there are minimal off farm impacts, but in Aceh this will be much more complicated. Hence it will not only concern the village or community living next to the pond but also communities which have conflicts with each other and for example downstream villages who "suffer" the impacts. Therefore it could require a landscape approach, because the watershed boundaries may be more important than social and community boundaries for some impacts. By including all these additional stakeholders and a larger area there will also be more influence of external factors. There will many possible impacts, which is very complicated you will increase the area you have to assess. Examples like influence of factories, fisherman from another area and such will create difficult to assess situations were it will be hard to judge who/what influences who/what. For example in the Tibang case it is still very hard to distinguish between the impacts of the tsunami and the impact of the tambaks, even more because the tambak system is already established for a long time in the region. Social assessment in the Tibang community is hard the community suffered great losses during the tsunami and only about 1/3 of the pre-tsunami population is still alive. This had a severe impact on the community, its functioning and many people seem passive. Farm level BMP and certification may be not the right scale to look for solutions. Most small scale farmers are connected by water supply and outlet, workers, social and more. Hence it would make sense to audit and possibly certify and entire watershed due to the cumulative impact the small scale farmers have. A problem that was encountered on this matter in Aceh was that the rivers are often a border for the municipalities and districts or village/community border. This would also make it harder to check the legal document (criteria one). In my study I already found many differences in the field between different areas, production systems, culture, practices and more. Therefore certification should be flexible to fit the local context and auditing methods should be very flexible (especially social) to be able to adapt to local circumstances, culture, production systems and knowledge level, see table 1. I have not data on Social Environmental Impact Assessments.

Possible problematic issues and difference between the certification requirement and the “reality” in the field in East Kalimantan and Aceh

See table 1.

Possible problematic Issues	East Kalimantan	Aceh	ASC standard (draft) requirements
Production systems	Traditional extensive small scale Mainly shrimp and some milkfish Low production/ha, but total high production	Semi intensive small scale poly-culture Mainly milkfish and some shrimp Most areas very low production, some average production	Applicable for all systems 100% shrimp focus High production is more worth it
Documentation	None	None- hardly	(full) documentation required
Contracts	None, based on trust	None, based on trust	(labor) contracts required
Land status	Illegal Conflicts within government	Local; legal, higher level unknown Possible conflicts within government Leased ponds	Legal Which government layer to check???
Mangroves	Mangrove destruction (1990's till recent) Greenbelt insufficient Willing to plant if compensated not in pond Neutral to negative mangrove perception	Mangrove destruction (old ponds-recent ponds) Insufficient to none Willing to plant if compensated Neutral to negative mangrove perception (sometimes positive)	Destruction OK if before 1990?? Greenbelt xxx M required or silvo-fisheries Mangroves are important
Labor	No days off No safety equipment Profit cut payment Non-local workers No women workers	No safety equipment Profit cut payment Local workers Limited additional women workers	Days of required Safety equipment required At least minimum wage Local workers required Equal opportunities, no sex discrimination
Off-farm community impact	No off-farm negative impacts Positive welfare impact Possible impact on fisheries in Tarakan No conflict with community	Off –farm negative impacts Positive impacts decreasing Impact on fisheries Limited conflicts with community Farmers = community Community A VS community B conflicts Community accepts impacts	Positive relationship farm – community required Not too much negative impact on community
Environmental impacts	Low environmental impacts Erosion	Moderate impact with pesticides, chemicals, fertilizer Exotics species escape Erosion Hotter micro climate	Low impact ok, if documented No exotics species escape Not much erosion
Marketing and trading	Good market access, sometimes middleman Reasonable price Direct buyer relation Short supply chain Many processors Production mainly for export Limited market knowledge Farmers have average – strong position	Middleman is dominant, farmer depends on middleman for resources Low price No direct buyer relation Long supply chain Processor/cold storage far away Production also for local market Hardly any market knowledge Farmers have weak position	Market access is incentive for certification Premium price is incentive for certification Direct buyer relation is incentive Export focused
Institutions/farmer groups	Present and inactive Hardly interest to group Informal partner groups Low incentive	Sometimes present no focus on marketing Many villages no functional farmer group/cooperation Low interest to group Informal partner groups Present in community Low incentive	Group certification for smallholders Group should be official Grouping as incentive for improvement

Certification perception	Hardly known Low incentive Negative about certification rules, but willing to change Demand for compensation	Unknown High incentive Willing to change high Demand for compensation	Should be well known Should have incentive Should be willing to change Premium price and aid is compensation
Farmer knowledge	Low Non-technical Traditional Low ecological knowledge and awareness No measurements	Low Non-technical Traditional Low ecological knowledge and awareness No measurements Some farmers willing to learn more (on BMP)	Should increase Technical knowledge required All systems Need for ecological knowledge Awareness required Measurement required Should be willing to learn and change

Table 1; Possible problematic issues and difference between the certification requirement and the reality in the field in East Kalimantan and Aceh