

SHRIMP FARMING AND CONSERVATION NETWORKS: THE CASE OF EAST KALIMANTAN, INDONESIA

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ABSTRACT

In Indonesia, shrimp pond development and shrimp production expanded significantly. There are also signs that this expansion has caused an environmental damaged, especially on the existence on mangrove forest. This extensification or expansion process has been facilitated by the national government through various support programs. Another important factor affecting the shrimp production and trade is the rising demand in EU and US for sustainable marine products, especially shrimp production and related products. The rising environmental awareness in Europe and US about the environmental impact of shrimp ponds in producer countries likely to put pressure on shrimp producing countries such as Indonesia. The "idea" of green shrimp has arrived in the area, but it is not passively adopted and implemented. It is being "negotiated" and translated into local concepts according to local stakeholder goals and strategies. This paper aims to analyze actors goals and strategies and understand what the "reality" of green shrimp trade in the area is. These above processes are illustrated with case study material from Tarakan, East Kalimantan, Indonesia.

Keywords: governance, shrimp production, shrimp trade, commodity chain

Introduction

The rising awareness in Europe and US about the environmental impact of shrimp ponds in producer countries has created a new 'battlefield of quality' [1] at is placing increased pressure on producing countries such as Indonesia to demonstrate their sustainability [2]. The "idea of sustainable or green shrimp has been developed over recent years through several standards and certification targeting practices from the pond to processing level. But contrary to the apolitical, managerial language of sustainability standards [3, 4], certification processes are not passively adopted and implemented. Instead, they create what Anna Tsing [5] has labeled 'friction', a negotiated process whereby global norms, knowledge and policy goals are translated, and as such transformed, into local knowledge and practices according to local stakeholder goals and strategies. This paper provides an 'thick' analysis of the practices and strategies of various chain actors with the aim of understanding how global environmental governance goals, through the mechanism of standards and certification, are translated into local realities of shrimp trade and production. In particular, we focus on three related processes – government, NGO and artisanal trade as three distinct but interrelated regulatory networks.

The shrimp industry of Indonesia is representative of the attempts made to negotiate access to international markets by seeking quality assurance through standards and certification. with the decline of coastal shrimp fisheries, the culture of Penaeid shrimp has emerged as one of the most important export commodities in the country, providing a particularly important source of export

revenue and employment to isolated coastal regions of the archipelago [6, 7]. At the same time, coastal shrimp aquaculture has proven a high risk activity, with disease and the extensification of production leading to mangrove deforestation and declining returns for farmers [8, 9, 10]. Faced with increasing pressure from international civil society, consumers and retailers alike, the government and industry in Indonesia has responded by exploring market-based standards as a means of demonstrating improved production safety and quality – including sustainability [11]

The proliferation of state and non-state standards, has led to what Vandergeest labels environmental regulatory networks – a broad interrelated set of state, civil society, and market actors that have the common goal of “ ... reducing harmful environmental impacts, promoting economic growth, harmonizing certification standards for the purpose of facilitating trade, ensuring safe food, protecting domestic industries, and creating new food qualities that can be marketed to consumers” [2]. Our analysis distinguishes three intersecting regulatory networks in Tarakan, East Kalimantan: 1. WWF-private sector partnerships, 2. government legislation, and 3. what Bush and Oosterveer [12] label artisanal trade networks. Linking Tsing’s notion of friction to a critical commodity chain approach [see 13], we focus our attention on the ways in which actors in each of these three networks actively (resisted) translating quality standards into regulatory practices.

Conceptual Framing

Standards and certification have emerged as integral parts of the ‘risk society’, where consumer’s concerns over food quality require mechanisms for assurance across globally spatialized markets. Whereas quality was once limited to products, it has now been extended to process, including methods of production and their impact to (amongst other aspects) environmental quality [14]. Standards, and their verification through certification, have therefore transformed global agrifood systems by defining a moral economy which regulates “what/who is good and is bad and to disciplining those people and things that do not conform to the accepted definition of good and bad” [15: 274]. This moral dimension of standards and certification has meant that initiatives that were once seen as mechanisms to promote safe foods and socially equitable and sustainable production [16, 17], are increasingly seen as mechanisms of marginalization. As outlined by Hatanaka [11] based on work in Indonesia, there are multiple dimensions to this failure: the knowledge and practices of farmers are often ignored; there is an unequal division of labour and responsibility leading to producer distrust of northern consumers; and the third party relations that mediate consumers and producers often confound any mutual understanding or moral obligation.

How standards and certification regulation is transferred and translated leads us to a more considered analysis of moral or ethical dimensions of environmental governance and, in particular, the link to development and equity. Li [18] argues that because expert knowledge is transferred through the rationale of ‘improvement programs’, the will of communities to improve their practices is situated in the field of power related to the Foucault’s governmentality. If governance mechanisms such as standards cannot internalize “educating desires and configuring habits, aspiration and beliefs” [18, p. 5], regulatory networks will be limited to the conduct of conduct, rather than material change. The implementation of standards and the process of

certification is therefore likely to continue face the problems outlined by Hatanaka [11] if there is not a meaningful translation of standards into local practices.

A central question is therefore whether and how the translation of standards from the global to the local occurs. To unpack this process of translation we use Tsing's [5] concept of 'zones of awkward engagement' to understand how actors embedded in (environmental) regulatory networks over shrimp production interpret standards based on their own expectations and knowledge. Building on what she calls an ethnography of global connection, Tsing argues that instead of seeing local communities as powerless minorities who have simply accommodated themselves to global forces, she proposes it would be more challenging to see global forces as collections of dialectical local/global interactions. This local/global interaction produce 'friction' within global regulatory networks, which instead of ending in governing the conduct of conduct, leads to awkward, unequal, unstable, and creative interconnection across difference. By using this lens, we are able to move beyond conflict and examine *how* new arrangements of culture and power' emerge. In doing so we can search for innovations within environmental regulatory networks as new or hybrid knowledge and practices is created by those actors already enrolled in the networks, or perhaps even by those who are not.

The site of friction that we focus on in this paper is the shrimp commodity chain, extending both forwards and backwards from the point of production [19]. We use the concept of commodity chains as a heuristic to identify key sites of regulation that shape the practice of production and flows of inputs and outputs [20]. Vertical commodity flows are also supplemented by complex horizontal, or networked connections of interdependence rather than fixed, vertical and unidirectional relationship as promoted by commodity chain analysis [13], including in the form of regulation. In doing so we are able to identify a wider group of actors through the flow of shrimp as a commodity and information to those between a diverse set of actors such as research and development, non-governmental organization and consumer groups through multi-directional flows of information and materials [21]. Returning to Tsing, commodity chains and the regulatory networks that surround them, can therefore be seen as arenas of *friction*, and hence production of new knowledge and practices, as they bring together diverse cultural, economic and regulatory paradigms.

Our analysis draws together commodity chains analysis and Tsing's ethnography of global connections to examine three related but separate regulatory networks over shrimp production in East Kalimantan. The first two are characteristic of horizontal or networked forms of regulation. The first is a traditional form of government regulation targeting processing companies and producers. The second was set up by WWF in partnership with private processing company and the district government, also promoting regulation of shrimp production through Best Management Practice (BMP) standards. Third, we extend this horizontal analysis by returning to the commodity chain itself as a regulatory network. Following Bush and Oosterveer [12], we examine whether and how state and NGO networks interact with actors below processing companies and above producers. Constituting a black box of understanding, we explore whether and how these familial and communal actors and networks influence the translation of global and national environmental regulation in the local sites.

The shrimp chain in Tarakan

A description of the connectivity between the commodity chain and what we define as the three regulatory networks are outlined in Figure 1. The following provides a description of various sites along the chain where key contradictions occur around environmental quality and regulation are evident.

The chain starts with the brood stock collector who are collecting from the shrimp fishers using mini trawls around Tarakan. Those fishers are not specialized in catching the brood stock, but are instead opportunistic, keeping and trading brood shrimp if they catch them alive. A brood stock collector then travels every day to meet the fishers. As we will see, the large spatial area at which these fishers and collectors operate place them largely out the scope of control by both NGO and state regulation, but well within marke networks of producers and traders. If there is any issue with the quality of the shrimp it is producers and traders that can influence where and how the shrimp are caught.

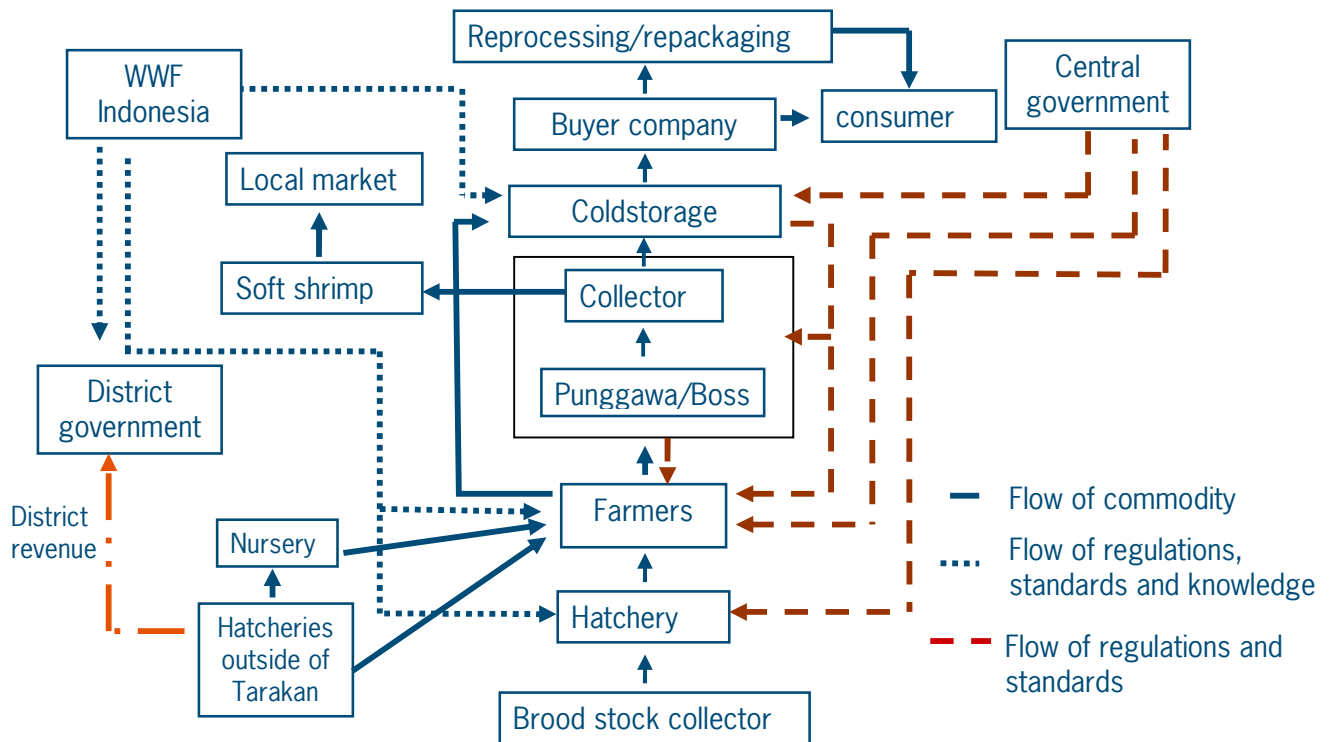


Figure 1. Flow of commodity, regulation, standards and knowledge

The key dilemma is that the use of trawlers is banned in Indonesia with the exception of the northern coastal area of East Kalimantan the use of mini trawls are permitted based on the MMAF regulation issued in 2008 by raising the issue of territoriality [22]. The numbers of this fishing gear has increased year by year, and by 2007 there were approximately 242 boats equipped with mini trawl [23]. This has marginalized the shrimp fishers using trammel nets and, according to one of the broodstock collectors in Tarakan ads to overexploitation of the wild

shrimp populations. For the broodstock collector, he doesn't have any other choice than getting the mother shrimp from the mini-trawlers, even though he realize that the quality of mother shrimp caught by mini trawl is lower compare to mother shrimp caught by trammel net and that the use of the mini-trawl is not an environmental friendly way to caught the shrimp.

The collectors sell the broodstock to hatcheries in Tarakan. Beside facing the trawling problem, the brood stock also face the threat of sustainability. After laying the eggs, the common practices is that this shrimp will end up in the fry pan. Those two practices are very different to what prescribe by WWF in the better management practices standards and so, to fulfill the requirement of an environmentally friendly mother shrimp is almost impossible. Seeking full traceability of this part of the chain is also highly challenging given seed is sourced from as far away as East/Central Java and Sumatra. Limiting the import of seed may well enhance the exposure to disease and improve the quality if seed. However, such actions pose an internal conflict for the local government who draw considerable tax from this import trade.

The first *tambak* in Tarakan was opened around 1980's after which new ponds were opened up in Bulungan, Tana Tidung, and Nunukan districts. Most of the *tambak* were built by opening the mangrove forest in te large estuaries along the coast. The boom in opening up *tambak* took place between 1995-2005 with the total increase of *tambak* area reached 500%. In addition to the high global market demand on *P. Monodon*, the opening of *tambak* was also promoted through the implementation of Presidential decree No. 39/1980 which banned trawling, as well as the high incentive given by the central government to shrimp farming through *Intensifikasi Tambak* (Tambak intensification, INTAM) programme [24]. A third contributing factor to this expansion was the poor local government control over opening new areas for *tambak* expansion [25].

The scale of *tambak* in the Tarakan area is relatively unique in Indonesia. Production systems are extensive with pond areas ranging from 5 to 20 ha. The local of ponds in isolated delta environments coupled with the scale of ponds has given shrimp from Tarakan a reputation of being of a higher quality. However, following the trend of shrimp aquaculture in many other regions of Southeast Asia production has declined significantly in recent years. How farmers have dealt with the increased risk associated with production is directly linked with their access to financial capital from middlemen or *pongawa*, defined by Levang [26] as "patron[s] who provides his client [shrimp farmers] with capital. The capital is generally intended to buy a boat, an engine, fishing gear, to develop a *tambak* or to advance the operating costs for a *tambak*" [26, p. 21]. A farmer's relationship with middlemen and *pongawa* therefore go beyond a source credit, to determine whether, how and where they are able to sell their shrimp and for what price. In this way, the entire market system in the region is channeled through these individuals. As we go to argue, they therefore represent a regulatory system that constitutes a 'black box' [12] in terms of engaging with formal state and NGO environmental regulatory networks.

While most of the *tambak* are located in surrounding districts, only accessible by boat, Tarakan is the central location of processing companies with 13 our of 7 in East Kalimantan located there. A major reason that Tarakan developed as a major centre for processing companies is that it had adequate infrastructure for international trading [24] – largely as a result of the long standing oil industry on the island. The isolation of ponds in the surrounding districts means that owners live in located in Tarakan. This geography means that many of these 'farmers' hire someone (usually

come with their family) to guard and to manage their farms, removing them from day to day farming practices. This has emerged as a key governance issue - when this come to problem of how to govern and who has the responsibility to govern. The district of Tarakan could not implement their regulations on many farms owned by people in Tarakan because their farms are not under their jurisdiction. Because the other districts are more isolated in terms of distances to the ponds and they don't have the cold storages, and therefore not the same financial incentive as Tarakan, they have not invested in promoting or supporting regulation.

The biggest buyer for the shrimp produced in Tarakan is Japan. They prefer Japan because they perceive their requirements and standards on quality as lower.

Government regulation of the fish chain

The state has been active in regulating food safety and environmental quality through a combination of standards and regulations. However, as indicated in Figure 1, much of the attention of government regulation has been given to processing companies. Only recently the government has tried to regulate the producers through the certification of farm level national good aquaculture practices (CBIB). While the government has been effective as a producer of regulation, it has been less effective in enforcement. Regulating processing companies and producers also appears to have reified the limited regulation of the chain of custody, most notably those actors above producers and below processors.

The ability of the government to regulate different actors in the shrimp chain contrasts markedly. In an attempt to regulate producers, the Ministry of Marine Affairs and Fisheries (MMAF) has developed a national certification on good aquaculture practices and a National Residue Control Plan (NRCP) based on the demands of the EU. Even though those two programs are already operational they have not been yet extended to parts of Indonesia. The reasons behind this as stated by the MMAF officers (during the seminar program held by Wageningen UR and MMAF, Wageningen, 21 April 2010) are a lack of qualified laboratory tools, the technical inputs required to run this system are very expensive and the government lacks qualified operators. However, regulation of processors has proven more effective with processing feasibility certification, HACCP, and national health certificate, issued by the national level laboratories already a mandatory requirement of operation.

Only recently the central government started to see the opportunity to apply the national Good Aquaculture Practices certification in Tarakan. In January 2010 the central government sent their auditor to check the possibility of the shrimp farms to be certified in the region. The result of the audit was, despite high hopes for more sustainable shrimp production in Tarakan, most of the farms earmarked for certification were advised they require improvement. Three main issues for compliance posed by the auditor include the shape of *tambak*, mangrove around the pond and sanitation problems. However, it appears that standards are even open to interpretation by those who are involved in regulating them. During the meeting it was noted that the shape of *tambak* and the planting of mangroves are not stated directly in the guidance book of good aquaculture practices. Instead they were communicated through a pictorial demonstration of a BMP farm which illustrated ponds as being a maximum of 2 ha in area and square, just like the ponds in Java or Sulawesi.

In the national good aquaculture practices (CBIB) the layout and design of a ‘good’ pond is explained in detail. The main objective of these standards is to prevent the contamination caused by either disease or waste disposal. The government through the inspector teams have been asking farmers to reshape and resize their *tambak* to conform the standards. Most farmers are unable to accept these regulations because of cost. But perhaps more importantly, they don’t accept the standards because they fundamentally disagree with the methods they promote in the context of Tarakan. As one farmer outlined:

“We can not built a nice hut in the pond area. If needed, the farmers should act if they are poor to avoid the robber. But, the problem is that those people [representative of MMAF] do not understand the pond [system] in Tarakan. They question the shape of the *tambak* ... I explained to them that this is what we called traditional *tambak* in Tarakan. It’s extensive and needs a lot of area. But, this is more sustainable in production compare to intensive which is high in production but only for short term.” (Leader of informal shrimp farmer association, Tarakan, 2010)

The concerns of this one farmer are echoed by many others interviewed and reflect a fundamental difference in opinion about what is possible given the farming conditions in the Tarakan region. This is not to reify the notion that ‘farmers know best’. Instead it demonstrates how the marginalization of farmers knowledge in setting up standards leads to epistemological conflicts over what defines sustainability.

Standards have become a mechanism of the government to ‘conduct the conduct’ of farmers by educating and configuring desires, habits, aspirations and beliefs. In response, the farmers argue that the government is trying to intervene at so large a distance that, reflecting the finding of Li, they “are not necessarily aware of how their conduct is being conducted or why” [18, p. 4]. So far, government has seen shrimp farmers as a target of standard implementation rather than incorporating them directly in standard development, monitoring and enforcement [cf. 2; 11]. All the certification and standards adopt the market demands and are under central government authority and supervision. Beside having a role as regulator, the central government also plays the role as auditor which is sometimes not accompanied by an adequate technical assistance. It seems that the role of government is being supplemented by ‘environmental regulatory networks’, which, as described by Vandergeest, are “an approach to environmental governance and locates certification in relation to a broader approach to environmental governance” [2, p 1154].

Introduction of the Better Management Practices: the Emerging of Environmental Regulatory networks

In April 2008, WWF Indonesia, Mustika Minanusa Aurora (MMA-one of the biggest cold storage in Tarakan) and Environment and Natural Resources Agency of Tarakan signed an MoU on mangrove rehabilitation in Tarakan Area. Within 3 years, MMA assisted by WWF have a responsibility to plant 150 ha of mangrove in 5 years. WWF in turn has used the arrangement to introduce better management practices to the farmers attached to MMA. This initiative aims to develop better aquaculture practices in shrimp farming to minimize the negative impacts of shrimp farming on the environment, including the use of chemical substance, mangrove cutting, use of artificial feed, and the use of non-environmental-friendly-caught brood stock. WWF

advertise their BMP manual as having been developed through a multi-stakeholder dialogue, involving shrimp farmers, government, cold storage, shrimp collector, hatcheries and the university (personal communication WWF), and subsequent farm trials.

The BMPs stipulate that the location to build *tambak* should be based on the national planning and legal frameworks for environmentally suitable locations. One of the standards determines that the construction of *tambak* should not destroy or harvest vegetations inside 150 m “green-belt-zone”, but for farmers there is no clear definition of what this green belt constitutes. All of the farmers interviewed interpret this standards as “*tambak* should be built 150 meters from the river banks”. As one farmer states, this is problematic and does not match with current practices:

“I attended the meeting of WWF couple of time. We were discussing about which areas are allowed for building a *tambak* ... According to them, we have to build *tambak* at least 150 meters from the river banks. This does not make sense. It’s too far. Thirty meters from the river banks is already too far for us. That’s the maximum for us, *tambak* should be located 30 meters from the river banks” (Farmer, Pegat-Batumbuk village, 2010)

A major source of skepticism is derived from the fact that The BMP manual guidance that was presented during the Tarakan BMP meeting was from those WWF had already developed for Aceh. During the meeting, the facilitator continued to remind the participants at the time that that this manual was only an example, and that an adapted set of BMPs would be designed northern coast of East Kalimantan. However, most of the farmers continued to question the applicability of the standards which they believed would be the basis for regulation in Tarakan:

“If you show this standards to farmers, they will laugh at them. We never do this kind of thing. If you want us to practice these standards, you have to show us how to do it. Not just telling us what we should do and what we should not do. If you can show us that your way is better in increasing the production, or at least to make the production stable, I am sure that farmers here will follow you voluntarily” (Shrimp farmer, Tarakan, 2010)

Both WWF and central government, are trying to govern the farmers using what Li [18] refers to as “distinctive means”. As seen with government regulation, the WWF standards are very focused on getting farmers to comply with on farm regulation and trying to discipline farmers to practice in a certain way. So far, the process of implementation has not reflected farmer’s concerns, nor has so far failed in providing any substantive transfer of knowledge, especially in terms of technical assistance on how farmers should actually convert their ponds to ‘best practice’. This is not to say WWF has not tried. They did establish a two demonstration ponds in Tarakan and implemented mangrove planting around the ponds dike, building a water settlement pond, and using ‘organic’ in place of chemical antibiotics, such as Saponin. Unfortunately these ponds are bare little resemblance to the ponds in Tarakan, and are located in an area with poor water quality. Not only did the farmers remain skeptical that the measures were appropriate for their own farms, the demonstration ponds have returned only very low production, and in some cycles failed all together.

The ‘black box’ – bringing *pongawa* and shrimp collectors in or leaving them out

This section will discuss the role of *pongawa* and the shrimp collectors who have been ignored by the government and global governance as the important actor in the process of knowledge transfer, not just an important actor in the process of commodity transfer. As stated by Levang [26] the link between cold storage companies to *pongawa* and shrimp farmers is incredibly efficient, based on a network with a strong cohesion because the links between the different levels of the network are not only commercial. Despite their importance in the functioning of the shrimp industry in Tarakan they remain poorly understood and outside of the control of state and non state regulators. In this way they constitute the ‘black box’ of artisanal trade networks identified by Bush and Oosterveer [12]. We argue this holds considerable implications for the governance of shrimp, especially governance related to market based standards and traceability.

Pongawa hold control over the activities of farmers as they direct the flow of knowledge and economic incentives for farming activities. As middlemen they buy shrimp from diverse sources, both ponds and capture fisheries. They determine the price of shrimp based on a mix of quasi-credit relations, or debt-tied pricing mechanisms rather than market prices. Given many have enough capital to work independently from processing companies they are free to steer shrimp to any of the processing companies. From the other side, they are also highly valuable associates of the processing companies given they take a distributive role as well as a large degree of risk in purchases – an especially important function given the large distances shrimp are traded across the Tarakan region. The precarious role of these *pongawa* was outlined by the director of a processing factory as follows:

“Agents [shrimp collector] are more respected by the farmers ... Different to us; we’re a company. [The fishermen, shrimp farmer] think that we’re rich so ... they think if they cheat, [the company] is still ok. So the agent maybe know very well how to communicate with the shrimp farmers, using this family relations. For example, if I am an agent I will know the father or the brother of the farmers connected to me ... but for the company, it’s difficult to do that”.
(Processing company director, 17 February 2009)

If the processing companies were to deal directly with the farmers they would have to provide credit for stocking. Based on experience, the companies see this as too high risk – often farmers do not pay money back and there is little recourse to demand payments. This is largely because their relation is purely business, with no social leverage as a guarantee to financial security. This In comparison, *Pongawa* are embedded within the familial and social relations of their client – the farmers – which provides substantial security to their business activities. As companies cannot, and it appears do not want to fill this role the role of the *pongawa* is not exploitative, but rather an important function in facilitating the shrimp chain.

Farmers relationships with the *pongawa* is also strategic. Most of shrimp farmers in Tarakan don’t have adequate financial capital for their activities and rely on *pongawa* to assist with financial and material capital. The assistance usually comes in supply of fry and financial credit for the production costs. In return the *pongawa* secures their supply of shrimp as, farmers are bound to sell their shrimp to the source of their credit or fry. Farmers also make use of this relationship if they are in need of any further emergency funding. The intricacies of the relationship were referred to by one *pongawa* as follows:

“I don’t have any ties with the farmers. The farmers have ties with me because I give them [material and financial] capital. From seed to money ... those shrimp farmers, they are smart. If they know that I got a benefit from the trade, they will come to me and ask for credit. If I don’t give them the money, they will sell their shrimps to other agent in the next harvesting time” (Shrimp collector, Tarakan 17 January 2010)

Coming back to Figure 1, we argue that important position of *pongawa* and shrimp collectors to both farmers and processing companies has been largely ignored by state and non state regulatory networks. Up to this point they have been largely untouched by national regulations and standards, and as such, any transfer of knowledge. This raises important questions. If the *pongawa* are so intrical to the shrimp system, and especially shrimp trade, should they be meaningfully included into the formal regulatory networks. If they control flows of information and incentives then their inclusion appears to be imperative. They are also imperative to any plans to create a coherent traceability system, but have so far been ignored by the government. They have also not been included in the WWF stakeholder discussions, even though informally, they acknowledge the important position of the *pongawa* and shrimp collector. This appears to particularly demonstrate the hard boundary that still exists between global and local, formal and informal networks, and as such any chance of a meaningful translation of knowledge between these scales.

Discussion

Our results indicate that the standardization of shrimp production is a highly negotiated process. As standards are developed through national and global networks distant cultures are imposed on local practices. Those standards are alien to the farmers since they are, most of the time, bringing a completely different understanding/scheme to the farmers daily practice. The friction comes as the attempt of the farmers to translate and negotiate those standards into and with their daily practice. Friction is clearly evident when farmers see don’t know advantage to comply with those standards.

The goal of the standards is to standardize the differences in the practices of farmers [15] and to improve, as stated by Li [18] “deficiencies that need to be rectified”. But, as Li continues to argue, there is a risk that the global experts who are prescribe improvements that exclude the structure of political-economic relation from their diagnosis and prescriptions are unlikely to be successful. These experts, in this case WWF in collaboration with the coldstorage company as the global governance and the central government exclude *pongawa* and shrimp collectors in their prescriptions. Whereas, in the chain of commodity, those two actors are also the important actors in the process of commodity transfer and that these two actors consider as the important one to the company and farmers. In order to achieve the goal in whatever the prescription is, this two actors should be considered as one of the ‘deficiency that need to be rectified’. We could not just kick them out and dispel them from the chain

This black box created by the flow of regulation, standard and transfer of knowledge also putting out the existence of the *pongawa* and shrimp collectors as the important actors to smoothing out the transfer of knowledge from above down to the farmers. Socially, they have a very strong position, both to the company and farmers. Company already use the existence of *pongawa* and

collectors as the informal quality control by translated the standards demand through the shrimp classification of 'export quality shrimp' and 'non-export quality shrimp'. To the farmers, these terms and condition are more effective than the standards introduced by the two other regulatory networks since those two actors who related directly with the farmers in the flow of commodity.

Conclusion

Our findings indicate that although standards could be a very effective way to conduct farmer's conduct, they are prepared without any involvement of the targeted group in Tarakan. Instead they are largely expert driven standards transferred from the international or national scale to Tarakan. This has meant that the requirements of the standard to be met by the farmers contrast to local conditions and practices. This does not mean that farmers know best, but rather questions whether and how processes of standardization should aspire to regulate uniformity. The unique nature of Tarakan makes this all the more pertinent. Our results demonstrate how standards developed in both national and international, state and non state regulatory networks, are not transliterated 'word for word', but instead are interpreted according to the knowledge and expectations of local actors. How this interpretation proceeds a major determinant of the acceptance or refutation of regulation.

The second proposition we address is that to make the implementation of those standards to be more effective and to make it become knowledgably to the farmers, governance arrangements could make use the existence of the *pongawa* and shrimp collector. The central position of these chain actors in the transfer of knowledge to the farmers makes them an essential node in what constitutes a poorly understood 'third' regulatory network. The relation between *pongawa* and shrimp collector and farmers are not just only a business matter. The *pongawa* and shrimp collector are the patron to the farmers [26]. Different to the relation of the company and farmers which is purely business. And that, to the farmers, the government is nowhere. Since the complicated situation of the who should be the 'governor', leave the farmers without any field assistance.

Instead of passively receiving regulation that are prescribed and imposed on them, farmers are active in translating and negotiating standards. The process of translation and negotiation occur at every stages of the chain by all actors creating a new 'culture' of regulation, compliance and environmental outcomes. This new 'culture' is also characterized by the interaction of the local actors in the chain. The strong social position of the *pongawa* and shrimp collector make them as the middlemen actor in the process of the translation and negotiation of the standards and certification from the above of the chain to the down of the chain.

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