# MARKET DYNAMICS AND GOVERNANCE IN GLOBAL AQUACULTURE VALUE CHAINS: CHAINING PRODUCERS?

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## ABSTRACT

The expansion of the aquaculture sector over the last two decades has coincided with the growth in importance of supermarkets in fish retailing in the EU. This paper presents a Value Chain analysis of selected species from their point of production in Bangladesh to the major consumer markets in Europe, and in particular through retail supply chains. The paper outlines the Global Value Chains (GVCs) for the selected aquatic products from the chosen country then provides a critical assessment of the market dynamics in the major consumer markets and the governance structures in place. The paper establishes the conditions of participation in GVCs, the barriers, and provides an initial analysis on possibilities for upgrading. It then concludes by examining the scope for further realisation of the values that might be added to aquaculture exports from such developing countries in an era of heightened green concerns, and potential effects.

**Keywords: Global Value Chains, Markets, Governance, Aquaculture, Livelihoods**

## INTRODUCTION

The past two decades have witnessed the globalisation of supply chains that transfer high-value food exports from developing countries to developed countries, alongside a proliferation of food quality and safety standards in developed country markets and an enforcement of these standards on developing country production systems.

Farmed seafood supply chains are one example where production is heavily dominated by the Asia Pacific region while major markets are the European Union (EU), Japan and the United States. Seafood imports to the European Union have nearly doubled in terms of volume since the early 1980s (Seafood Choices Alliance 2007). Such growth is partly due to successive enlargement of the EU alongside per capita rise in seafood consumption and a decline in indigenous fisheries resulting in increased reliance on imports.

Several, often contradictory trends have emerged over the last few decades in the development of seafood trade between Asia and Europe. The removal of trade barriers, decreasing transport costs and technological advances in food preservation have encouraged international standardisation, commoditisation and increased trade flows. At the same time, expanding legislative requirements along the chain including increasingly specific, demanding and differentiated product attributes relating to public health and safety as well as numerous production processes, applied to existing and new species, have developed in the industry. While the benefits of meeting public and private product demands include access to high value markets, higher incomes and technology, there is also a growing public policy and development concern regarding a marginalization of the poor in light of current and future product specifications (Swinnen 2007).

The aim of this paper is to examine the Bangladeshi shrimp value chain using the Global Value Chain (GVC) approach. The paper necessarily embraces product requirements in the European market and capacities in the producing country. Whilst the focus of this paper is Bangladesh, to enable a fuller analysis, attention is drawn to the implications for other countries in the region which are being studied as part of a larger EU research project SEAT (Sustaining Ethical Aquatic Trade) project (www.seatglobal.eu). This paper is part of its scoping phase based on a literature review and key informant interviews along seafood value chains from Asia to Europe. The SEAT project is a large-scale collaborative research initiative exploring the sustainability of trade in key aquaculture products from Asia to the EU. Four Asian countries have been selected for the study (Bangladesh, China, Thailand and

Vietnam) incorporating four major cultured aquatic commodities (Pangasius, Prawns, Shrimp and Tilapia). A key output of the project will be an Ethical Aquatic Food Index (EAFI) which is intended to commuicate a more accurate measure of the sustainability of products and is derived from analysis of the respective value chains. This should contribute to enhancement of sustainability throughout seafood supply chains.

## THE GLOBAL VALUE CHAIN APPROACH

The Global Commodity Chain approach, popularized by Gereffi and Korzeniewicz (1994) explores how production, distribution and consumption of products are globally interconnected along value chains. The underlying rationale of this conceptual framework is the assumption that integration in the global economy is the best option for developing countries if they wish to follow a similarly successful economic growth and development path as other export-oriented economies (Fold and Larsen 2008).

A large body of literature has developed since the first mentions of global commodity chain analysis in the mid-1980s and subsequent references to GVC analysis (Bair 2009). For the purposes of this paper, the approach taken by Gibbon and Ponte (2005) will be adopted in which 'value chain' is treated as a purely terminological shift from 'commodity chain'. Despite its popularity and usage by governments, particularly in development policy, there are no agreed definitions of value chains. For the purpose of this study, the value chain covers production inputs to the point of sale in retail, wholesale or food service establishments. Taking the value chain further, for example to points of consumption, and post-consumption incorporating waste and recycling, is an area worthy of further research and which is being given increased, though still limited, consideration in the literature (Brom et al. 2007).

GVC analysis was first developed to analyse globalising trends and in particular the increasing role of retailers and brand-name companies in creating global production, distribution and marketing networks (Kaplinsky 2004). Gereffi (1999) emphasises the importance of what he calls 'buyer-driven commodity chains', which remains a key concept for understanding current changes in the global economy. In buyer-driven chains, large retailers, marketers or branded name companies are called 'lead firms' as they play a pivotal role in product design, supplier selection and value-chain coordination, establishing and 'governing' geographically-dispersed production and distribution systems without necessarily owning any themselves.

Mapping the 'vertical' relationships between buyers and suppliers and the movement of a good or service from producer to consumer is a useful way of examining resource, finance, knowledge and information flows between buyers and suppliers, often located in different geographical areas. In general, increasing globalisation has led to research and development (R&D), design, marketing and branding (characterised by high barriers to entry and high returns) hosted by lead firms in developed countries while production aspects have relocated to developing countries. In this way, GVCs become the mechanisms through which developing countries engage in trade with developed countries (Keane 2008).

In contrast to common political economy perspectives that tend to focus on capitalist or systemic aspects of economic governance, GVC analysis as an analytical tool is particularly useful for looking at governance from the point of view of lead firms, by identifying their central role in organising activities within commodity chains (Werth 2008). Governance of GVCs is the process of organising activities with the purpose of achieving a certain functional division of labour and entry barriers along the chain, resulting in specific allocations of resources and distribution of gains. Governance is therefore about defining the terms of chain membership, incorporating/excluding other actors accordingly and allocating to them value-adding activities that lead agents do not wish to perform (Ponte and Gibbon 2005).

While GVC governance was originally understood as the manifestation of the economic power of a lead firm, it was later expanded to the notion of 'coordination' of buyer-seller relations (Werth 2008). Coordination examines how buyers and sellers exchange product and how they relate to one another. Consequently, there may be different forms of coordination both along and between actors in different

functional positions in value chains.

GVC analysis also takes into account the 'institutional framework' within which chains operate: external influences on chains that define the parameters of production processes (Humphrey and Memedovic 2006). The institutional framework is part of chain governance but by parties external to the chain. External actors shape important institutional and organisational features of value chains and the institutional framework for farmed seafood supply chains has involved interventions at multiple points along the value chain by a number of different actors. In other words, while lead firms establish a division of functions, there is increasing input from external agencies such as environmental groups and third-party certifiers who define aspects of governance including production, codification, certification and to some extent, management (Saidul Islam 2009).

One of the ways that developing economies can increase returns in global value chains is by taking on new activities. Examining what has been coined as 'the role of upgrading' within the chain is to identify and evaluate improvements in quality and product design that enable producers to gain higher-value or diversify product lines. As such, some form of participation in GVCs is considered a *sine qua non* for upgrading in developing countries and upgrading was incorporated into the GVC framework in the late 1990s. An analysis of the upgrading process includes an assessment of the profitability of actors within the chain as well as information on constraints that are currently present as participation in the global economy itself may not provide a path of sustainable economic growth or equitable distribution of returns (Kaplinsky 2004).

Value chain analysis is reasonably flexible and the value chain can be analysed from the point of view of any one of a large number of participants in the chain (Van den Berg et al. 2010). Over the past decade, an extended discourse has evolved on spatial and functional boundaries, driven by the incorporation of elements of other research traditions such as transaction costs economics, convention theory and regulation theory (Werth 2008). Adopting a broader outlook than the functional upgrading described above, is to look at the terms on which poor people participate in value chains (Bolwig et al. 2010). As previously introduced, agro-food value chains demonstrate asymmetric power relations with the terms of participation to a large extent dictated and controlled by downstream (near the point of consumption) actors. Examining 'horizontal' elements of value chains are critical when considering the impact of restructuring value chains on people's access to resource and assets upon which they rely for their livelihoods. Understanding the implications for poverty, integration or repositioning within value chains also requires an analysis of power in local systems and relationships within which chain actors and their communities are situated (Ponte 2007).

The paper next presents a schematic map of the shrimp value chain from Bangladesh to the EU. The limited literature available on certain aspects of this chain as well as the commercial nature of some processes results in constraints for the analysis at this stage, but also indicates areas requiring further research as part of the SEAT project. Chain coordination and governance will then be examined alongside the institutional framework and possibilities for upgrading. A brief market analysis will introduce the role of standards in the EU market and consequences for supply chain coordination and market access. Finally, development, standards and global value chains will be linked in a concluding discussion.

## DESCRIPTION OF SHRIMP VALUE CHAINS IN BANGLADESH

The People's Republic of Bangladesh is the seventh most populous country in the world with one of the highest densities of population and a high poverty rate. Bangladesh enjoys an advantageous natural setting for prawn and shrimp culture and seafood products are an important part of the economy. Shrimp is a 100% export-oriented activity in Bangladesh, generating substantial revenues and foreign exchange: over USD 530 million between July 2007 and June 2008, accounting for almost 8% of total exports (USAID Bangladesh 2006), or around 2.5% of the volume and value of total global shrimp exports (Nazmul Alam and Pokrant 2009).

Growing markets have resulted in the rapid expansion of shrimp cultivation and export in Bangladesh since the 1980s. Between 1983 and 2003 the volume of shrimp and prawn cultivated increased more than 14 times while over the same period the area of ponds dedicated to shrimp and prawn production more than tripled (USAID Bangladesh 2006). In 2003-4, the EU market captured 50% of Bangladeshi shrimp exports by value worth around USD 200 million (Nazmul Alam and Pokrant 2009).

**Mapping the Shrimp Value Chain**

There are approximately 150,000 farms producing shrimp and prawns in Bangladesh. Although some farms have adopted modified traditional farming techniques and a few use semi-intensive farming techniques, the majority employ traditional cultivation techniques and as a result, low levels of productivity typify shrimp production. Typically, Bangladesh yields 17 times less shrimp than Thailand per hectare (USAID Bangladesh 2006). There are vast differences in shrimp farm size in Bangladesh, ranging from small subsistence farms of 0.02 hectares to farms with more than 90 hectares of ponds (Gordon et al. 2008). Around 20% are managed by tenant farmers (USAID Bangladesh 2006). For shrimp farmers, seed and labour together represent on average almost 90% of total expenditure (Gordon et al. 2008). Around 600 000 workers are employed on farms and many of these workers are unremunerated family members while others are hired for temporary or seasonal work (USAID Bangladesh 2006). Almost 426,000 individuals were involved in fry catching during the 2005 peak season and it is estimated that around 90% of shrimp farmers buy shrimp fry from local villagers who have collected them from nearby rivers and creeks (USAID Bangladesh 2006).

At least three major groups (shrimp farmers, local depot owners and processing factories) buy from and/or sell to middlemen. These middlemen are called faria (the intermediary who buys and sells shrimp) and aratdar (the Commission agent or intermediary who buys and sells shrimp). There are over 30,000 intermediaries in the shrimp value chain that purchase fry and sell them to other intermediaries. The role they play is substantial: most shrimp farmers cannot buy shrimp larvae with their own money so borrow it from middlemen. Faria offer conditional loans to the farmer as well as other equipment and buy shrimp from them at a price they determine (USAID Bangladesh 2006). Faria fix the price based on grades of shrimp produced and the number per unit of weight. However, as there are few accurate measuring devices to assess size and weight, significant power rests with the Faria (USAID Bangladesh 2006). Consequently, these middlemen play a pivotal role in injecting credit into the chain and exerting control over sale prices and margins (Saidul Islam 2009). At the same time, middlemen may have to resort to loans themselves in lean times (USAID Bangladesh 2006).

Alongside rapid growth in production has been the expansion of processing plants; 13 in the mid-1970s, 54 in the mid-1980s and around 130 today although only 65 are in operation of which 57 are approved by the EU (USAID Bangladesh 2006). The rest are either not operational or waiting for a quality inspection license. The license is dependent on the development of a HACCP manual *inter alia* and all plants are subject to quality control by the Department of Fisheries. The collective capacity of these plants is around 825 mt a day but processing plants are estimated to be operating at 20-30% of full capacity due to a discontinuous supply of shrimp (Ahmed et al. 2008).

Shrimp exported from Bangladesh is inspected in Singapore to ascertain whether it meets import standards before onward travel to the buyer. SGS (Switzerland) and Lloyds (UK) are the international agencies that perform pre-shipment inspection. Some in-country inspections also take place in Bangladesh by appointed quality inspectors for processors (Fish Inspection and Quality Control (FIQC) service) and exports, buyer-designated quality assurers and EU-delegated Government bodies (USAID Bangladesh 2006).

A gender analysis of the chain affords another means of examining the power of actors engaged in the sector as well as the terms and conditions of their engagement. Men and women are not distributed evenly across all sectors and occupations and women and children work throughout the chain but are located in segments where employment is more flexible and insecure such as fry catching, and casual

labour in farming and processing (USAID Bangladesh 2006).

**Coordination and Chain Governance**

In the shrimp value chain, buyers in the major markets specify import criteria which may include price, quality, freshness, reliability of delivery, speed of response, product and process design, product performance, specifications on colour, shape, grade size, temperature controls and packaging materials. These are translated into practical requirements through contracts specifying quality demands, assessments and standards although commercial confidentiality tends to promote a lack of transparency.

In terms of coordination, coercive lending and contracting relationships permeate the parts of the shrimp value chain located within Bangladesh (USAID Bangladesh 2006). While potential earnings may be high in peak season for many of the stakeholders, payments over the year are variable. The lack of an efficient and open credit market locks many fry catchers in particular into sub-optimal contracting arrangements where they borrow money from middlemen in advance of production and commit to selling the product at a price to a specific intermediary determined by the buyer. In light of poor communication, sparse information and inadequate transport facilities, dependency on the role of middlemen is high and widespread. Consequently, many workers spend years in cycles of dependency on credit and debt, enforced by strong social codes (USAID Bangladesh 2006).

The majority of enterprises use formal credit markets and have obtained government-backed loans to build their establishments. The Government of Bangladesh has developed an Entrepreneurs Equity Fund (EEF) that targets agri-based and other commodity companies. Some hatcheries and processors have obtained financing through this facility. All processors have potential access to a subsidy from the Government at 10% of the FOB value averaged over three years. However most financing offers from the Government are not well distributed and contribute to under-utilisation of capacity reported in the shrimp processing sector. No funds are available to farmers or other lower-level participants (USAID Bangladesh 2006).

**Institutional Context**

The Bangladeshi shrimp value chain operates within an institutional context that shapes the conditions within which value chain actors exercise coordination (at particular nodes) and governance (along the chain). The rules that constitute this regulatory framework are of critical importance to Bangladesh due to the high reliance on exported shrimp for GDP earnings.

The institutional framework for shrimp culture within Bangladesh itself is extensive due to the large number of ministries, institutions and directorates involved. According to Khatun (2004), the current regulatory framework for shrimp production is weak and biased towards the educated elite, meaning the capacity of the Department of Fisheries to oversee and coordinate shrimp sector development is limited. Certainly, the number of public administration organisations, private bodies and association standards regulating shrimp culture may increase organisational problems.

The role of shrimp as an export earner coupled with its highly publicised food safety failings and environmental impacts have resulted in an extensive role for NGOs in the institutional context. A network of diverse international environmental groups contribute towards the latter, such as the Aquaculture Certification Council (ACC), the Environmental Justice Foundation (EJF), the Global Aquaculture Alliance (GAA) and the WorldWide Fund for Nature (WWF) in addition to local environmental and labour rights NGOs such as the Coastal Development Partnership (CDP), the Centre for Policy Dialogue (CPD), the Bangladesh Shrimp and Fish Foundation (BSFF) and the Bangladesh Shrimp Farmers Association (BSFA). In addition, food safety has become a greater priority for both governments and the private sector in Europe. For the private sector, standards that go beyond regulation reflect the way in which food safety standards can be used as a competitive tool in commercial strategies (Nazmul Alam and Pokrant 2009).

**Upgrading and horizontal elements**

The expansion of standards and quality regulations may provide opportunities for upgrading in Bangladesh and supports one of the key arguments in defense of shrimp culture: this export industry can bbenefit rural development and help poverty alleviation. Opportunities for upgrading include investing in domestic production of shrimp feed, providing extension services along the chain, organising farmer associations, improving terms of trade and exchange, introducing greater labour rights and benefits, better data collection, access to market information and increased stakeholder dialogue within the chain (USAID Bangladesh 2006). Shrimp processors are adding a wider range of prepared shrimp to their products and this increased leverage with buyers and importers also increases returns (USAID Bangladesh 2006). From the literature available, it is difficult to ascertain further upgrading trajectories for Bangladesh. Such conclusions will rely on site-specific fieldwork, which will be undertaken in the coming year.

Nevertheless, there are certain peculiarities of value chains in Bangladesh that are likely to affect future upgrading developments. Environmental problems associated with shrimp farming are well documented. The destruction of mangroves and wetlands to create shrimp ponds has left coastal areas exposed to erosion, altered natural drainage patterns, increased salt intrusion and removed critical habitats for many species. This has an effect on the poorest and most vulnerable, particularly the landless who rely on government-owned land (khas) and access to common resources for their livelihoods. There has also been a conversion of large areas to ponds. Where ponds are built in coastal areas, these can block traditional users' access to coastal and estuarine resources leaving them marginalised in degraded environments. Saltwater intrusion and chemical pollution can also result in irreversible changes in soil composition and reduce the productivity of agricultural land. Flooding and crop declines have also led to reductions in both grazing land and animal fodder and salinisation and pollution of water have been associated with increased livestock mortality (EJF 2004). Rice is a staple food and while the promotion of integrated shrimp-rice systems could in many ways be regarded as a positive aspect of Bangladesh's shrimp farming industry, there are serious concerns over its practicalities as rice production may have reduced by as much as one-third in shrimp producing areas. Declines in rice production have meant that households are increasingly dependent on rice purchased from markets and other regions. In addition, most coastal people do not have the buying capacity to buy shrimps. This has created a feeling of food insecurity, represents an increase in household expenditure and is indicative of a net transfer of food production for domestic consumption to an export commodity (EJF 2004).

Environmental issues have directly led to increased social problems and conflict in some locations, characterised by violence, intimidation and serious human rights abuses (EJF 2004). Shrimp farming needs less labour than traditional activities and conversion has pushed nominal land values higher, leading to greater competition between and amongst communities and migration of men from rural areas (EJF 2004). Women and children in particular are left vulnerable to violence and the breakdown of social cohesion.

Over 600,000 people are estimated to earn at least part of their income from shrimp farming. However, 86% of all those employed in the shrimp sector are poor, unskilled and receive a disproportionately smaller proportion (61%) of total earnings to the sector. Even successful farmers lack the ability to negotiate on the price they receive for their shrimp. Although the trend in shrimp farming has been towards local ownership and reduced farm size, the major beneficiaries of shrimp farming still tend to be non-local entrepreneurs and large landholders who gain disproportionately large benefits. Other beneficiaries are absentee landlords, urban entrepreneurs, government officials and political elites (EJF 2004).

In conclusion, degraded environmental resources can lead to social conflict, particularly where regulatory infrastructures are weak or unenforced, compromising the ability of the poor to take advantage of upgrading possibilities. In recent times, a body of literature has developed around the livelihood opportunities associated with opting out of global value chains for these reasons (Riisgaard et al. 2008, Ponte 2008).

## EUROPEAN MARKET DYNAMICS

Outlets for seafood products in the European Union are diverse but may be split into either retail or food service, each with their own myriad of channels and structures in the 27 member states. While the increasing prominence of large retailers in the global economy has resulted in a rise in academic interest surrounding supply chains, comparatively little is known about food service supply chains, even though seafood sales through the food service industries are equal in terms of value in some countries where such data exists (Seafish no date). This is a fruitful area for further research, although preliminary work has highlighted data deficiency challenges.

The growth of supermarkets within the retail sector has played a pivotal role in increasing the availability of seafood to consumers and there have been two trends in particular that have had profound impacts on retailer supply chains. The first is consolidation in response to the economic pressures of globalisation, particularly in European countries. Even at the start of the Millenium only five retail companies account for the majority of supermarket sales in Finland, France, Portugal and the United Kingdom (Guillotreau 2003). Not only has this trend of concentration in retailing since increased, it has been mirrored in a broader process of concentration at multiple stages within the global food industry (including the food processing sector).

The second trend of importance is the rise and proliferation in number and scope of standards in both the public and private sphere. Standards are essentially agreed criteria, or as Hawkins (1995) put it, 'external points of reference' by which a product or a service's performance, its technical and physical characteristics and/or the process and conditions under which it has been produced or delivered can be assessed. It is useful to distinguish between standards that relate to testable physical characteristics of products (i.e. product standards); and process standards which determine the characteristics and parameters of the production process e.g. technical specifications related to temperature control, bacterial loads, labour and environmental standards (Humphrey 2006).

In the public sphere in the European Union there has been a tightening of product standards, partly due to harmonisation and rationalisation of standards across public areas and countries, which tends to increase stringency (Humphrey 2006). A growing emphasis on process standards such as risk reduction methods and traceability in the supply chain represents a change in food safety philosophy at the European level. Process standards are now featuring in international public policy and trade discourses, showing the extent to which these standards have become international norms (Nadvi and Wältring 2004).

When considering the private sphere, gone are the days of Friedman's influential view in the 1970s that the social responsibility of business is to increase its profits (Fan 2005). There are at least four reasons for a rise in private process standards, particularly those relating to environmental and social issues. First, a popular approach often referred to in the literature is that with rising incomes and higher standards of living, consumers have developed more demanding and fragmented food choices, including production according to certain environmental and social standards. The emergence of codes of conduct and standards in the supply chain therefore assists retailers in product marketing and branding through the use of labels that identify the standard being used. Competitive advantage translates into sales and private standards have emerged as a way to differentiate products.

Second, consumers in markets such as the EU and US increasingly attach importance to how companies conduct their business. As the last link in the chain between the producer and the customer, retailers in these markets are increasingly held accountable for both local and global concerns. Standards and associated labels provide an opportunity for retailers to associate their brand name with 'ethical sourcing' and sustainability initiatives. By convincing the ethical shopper that they can use a particular retail outlet confident that the procurement policies are so robust that all choices they make in that store will be responsible ones without the need for further investigation, they increase customer loyalty and raise entry barriers by creating 'reputation capital' (Fan 2005, Mazé 2002). Retailers also use standards as a defensive strategy to protect themselves from potentially damaging publicity and can form part of their

risk management strategies. As retailers are at the consumer end of the value chain, they have the greatest incentives to implement standards in order to self-govern their commercial and reputational interests.

Third, standards in the supply chain are a method (albeit new) of coordinating supply chains to manage process and product attributes within a global sourcing strategy (Fulponi 2007). As a consequence, standards have not only proliferated horizontally (to incorporate new themes) but also vertically along supply chains (covering different processes). Private standards permit the creation, implementation, identification and preservation of product and process characteristics throughout the supply chain and can therefore assist with the effective coordination of supply chains. Standards may increase efficiency, reduce transaction costs and help ensure traceability. Essentially then, in business to business relationships, private standards serve as internal control while in business to consumer relationships, they also serve as marketing tools (Smith 2007).

And finally, a perceived lack of action by public bodies, or at least slow action, has created an incentive for retailers to push ahead and forge a 'standards landscape' that suits their interests. The development of global process standards within private ethical branding strategies by international or national firms is now widespread in many agro-food sectors (Mazé 2002). As private companies and retail businesses expand across the globe, incorporating local and global supply chains, the standards they introduce in their supply chains may be higher and more demanding than those enforced by national governments. These strategies are often considered in the literature as an alternative to state regulation (Mazé 2002) and raise questions surrounding the relationship between public and private standards in the modern food system (Smith 2006).

NGOs have also tapped into, and sometimes driven these concerns and have developed various strategies to wield influence over consumer purchasing decisions or the procurement policies of large firms(Washington 2008). Exposure to pressure from consumers and organised NGO campaigns has fuelled initiatives by private business to collaborate with NGOs in formulating effective and legitimate environmental and social standards. Such developments are particularly marked in seafood which is an environmental resource-intensive and labour-intensive food sector, marked by highly globalised production and where ethical norms are a core area of competition. In sharp contrast to most quality assurance standards, process standards are increasingly formulated in networks that include civil society, public and private actors. These coalitions can often lead to the development of new government regulations, mutual recognition and harmonization between standards as well as initiatives that essentially standardise the standards. In addition, recognising the legitimacy that acceptance by a retailer can bring to the actual standard, competition is increasing between standards 'owned' by different coalitions. Recent developments have also seen standards 'tightened up' with criteria becoming stricter over time. This process, observed as akin to a ratchet effect (Young et al. 1999) provides a further instrument to differentiate within the chain and creates a further barrier to entry. As a consequence, the lines between public and private standard development are growing increasingly blurred while at the same time standards are becoming more numerous and stringent (Humphrey 2006).

## LINKING GVCS, MARKETS AND DEVELOPMENT: CHAINING PRODUCERS?

For many of the world's population, the growing integration of the global economy has provided opportunities for substantial income growth. However, at the same time, there has also been a growing incidence in the absolute levels of poverty and an increasing tendency towards growing inequality, both within and between countries (Kaplinsky 2004).

Many contemporary development policy prescriptions place emphasis on poverty reduction through closer integration of poor people or areas with global markets (Bolwig et al. 2010). The common argument for entering GVCs is that this triggers a stronger upgrading effect (Werth 2008). However, some of the 'losers' of globalization include those who participate actively in the process of global integration through trade but have not experienced increasing economic returns.

The enormous quantity of literature on global standards in food and agriculture and the complexity of the institutions that define standards in different areas bear eloquent witness to the increasing importance of global standards in structuring the global economy (Humphrey 2006). Standards are increasingly important in coordinating exchange at key nodes of the value chain, shaping the governance of chains and facilitating or hindering participation by developing countries (Bolwig et al. 2010). The increasing importance of standards has led to a substantial reogranisation of agribusiness supply systems. Standards enhance business to business ties by improving coordination of global production and distribution, lowering risk and organising linkages (Nadvi and Wältring). Through standards retailers gain impetus to reconfigure roles, functions and tasks (Burt 2000).

The evolution of the role of quality standards in shaping access to GVCs needs to be better understood in relation to the changing features of consumption in the North that are changing the global agenda on trade. Retailers and large buyers organise supply chains in response to product development demands, branding, supplier selection and distribution. The overall trend to product differentiation and increasingly complex value chain linkages has been driven in part by trends in retailing but product differentiation is also a strategy of producers and intermediaries (producer associations, traders, NGOs etc) (FAO 2009).

As a result, firms in developing countries have come to realise that their capacity to compete internationally is often linked to their ability to comply with global standards. While these standards represent new challenges there remain fears that they are barriers to trade and will marginalise particular producers (Nadvi and Wältring, 2004). The vertically linked nature of the chain and the increasing consolidation of the food industry in developed countries mean that certain standards may influence access to specific segments of markets, to specific countries, as well as setting terms of participation, opportunities for upgrading, systemic competitiveness and returns for participation in global markets (Gibbon and Ponte 2005, Humphrey 2006).

Market and coordination power by lead firms exerts influence along the supply chain and transfers risk between agents. Standards that require compliance by farmers and producers may impose costs associated with investment in new equipment and systems; obtaining certification; developing capabilities required to meet new standards plus maintaining them; risks associated with changing supply and demand conditions (Humphrey 2006). The more that compliance has to be monitored by the buyer because of a lack of trust in the supplier, the more coordination costs rise. The critical determinant of coordination costs is the buyer's assessment of the level of supplier competence. New requirements create new forms of incompetences and new sources of risk for buyers. Certification requirements may actually increase the costs of organising small farmers by presenting one more area of potential compliance failure that exporters have to control for. While it does not exclude small farmers from supply chains, it does increase the cost of small farmer production relative to that of large farm or exporter-owned production (Humphrey 2005). Of critical concern is the bearer of such costs: in many cases they appear to be borne by the producer whilst elsewhere they may be transferred to the consumer. Whether the lead firms shoulder any such burden is more opaque.

There are specific circumstances where the private sector has direct business motives for investing resources in transferring knowledge and upgrading suppliers. Small farmers represent the vast majority of the potential supply base when dealing with shrimp from Bangladesh. Furthermore, threatening to switch to another supplier is only possible if production specifications can be easily transferred between suppliers (Burt 2000). However, even companies willing to invest in upgrading small farms generally have as a long-term strategy to upgrade part of their supply to larger, more efficient and fewer supplies (Swinnen 2007). Therefore, while lead firms may be hesitant to provide technical assistance if the product can be sourced effectively elsewhere without increasing coordination costs, pressures for firms to adopt a more CSR-focused stance in their business may increase the stake of powerful actors in the conditions of producers. Where support does come in the form of knowledge, information and skills transfer, it should also be pointed out that support is likely to follow and reinforce existing specialisations and relationships rather than new ones (Humphrey 2005). Therefore, while producers may be part of a global value chain,

they could still be highly marginalised (Bolwig et al 2010).

Private-led methods can be complemented by policies aimed at promoting value chain linkages so as to facilitate the access of small farmers to export markets. Examples include promoting cooperatives (coordination and pooling of production and acts as an effective conduit for technical assistance), promoting outgrower schemes linking small farmers and large buyers, and seeking new marketing channels for the output of small farmers e.g. Fairtrade (Humphrey 2005). Upgrading for small producers will require taking action to higher levels of decision-making (inside or outside the value chain) as local action will rarely suffice to promote significant change. Producer upgrading therefore requires the identification of 'action points' where political pressure or strategic action in relation to downstream actors is feasible. Intervening in an action point may require political leverage and financial and human resources beyond the capacity of small producers. Mobilising such resources from external sources is therefore central for development (Riisgaard 2010).

## CONCLUSION

This paper has examined the global value chain for shrimp from Bangladesh, the nature of insertion of different stakeholders into the value chains and commented upon the terms on which they do in light of trends in European seafood markets. The requirements of final consumers in high-income markets invariably require capabilities that are commonly outside the traditional practice of poor countries. In particular, the combination of a demand for products of high quality and safety standards and the problems which producers face in supplying such products to processors and traders has led to the growth of private contractual initiatives to overcome these obstacles. Future developments may yet see lead firms working to upgrade producers in lower income countries, and not only for export markets.

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