



DIE ERDE

Journal of the  
Geographical Society  
of Berlin

Vol. 147, No. 3 · Research article

# The paradox of formalization and informalization in South-North value chains

Peter Dannenberg<sup>1</sup>, Boris Braun<sup>1</sup>, Elmar Kulke<sup>2</sup>

<sup>1</sup>Geographisches Institut der Universität zu Köln, Albertus-Magnus-Platz, 50923 Köln, Germany, [p.dannenberg@uni-koeln.de](mailto:p.dannenberg@uni-koeln.de), [boris.braun@uni-koeln.de](mailto:boris.braun@uni-koeln.de)

<sup>2</sup>Geography Department, Humboldt-Universität zu Berlin, Unter den Linden 6, 10099 Berlin, Germany, [elmar.kulke@geo.hu-berlin.de](mailto:elmar.kulke@geo.hu-berlin.de)

Manuscript submitted: 3 March 2016 / Accepted for publication: 3 July 2016 / Published online: 30 September 2016

## Abstract

*The internationalization of value chains and the broad proliferation of different public and private standards have led to a formalization and standardization of value chains, production systems and their constitutional actors and linkages in the Global South. Recent studies on the integration of Southern production systems in international value chains, however, show that this is only partly the case. These studies identify limits and insufficiencies of formal and standardized coordination and control systems as well as a neglect of regional peculiarities, individual aims and capabilities of the embedded stakeholders in the South by the coordinating lead firms from the North. As a result, informal actors and arrangements continue to be, and even continue to develop as, important parts of Southern production systems. With reference to the concept of informality, principal-agent theory and convention theory, this study aims to contribute to the recent conceptual debate on global value chains and global production networks in outlining the importance of informal arrangements and non-industrial conventions as well as the limits to upgrading in South-North relationships. The empirical base are case studies on export-oriented primary production systems in Kenya (horticulture), Bangladesh (shrimps) and India/Bangladesh (leather).*

## Zusammenfassung

Die Internationalisierung von Wertschöpfungsketten sowie die weiträumige Verbreitung unterschiedlicher öffentlicher und privater Standards haben mittlerweile auch im globalen Süden zu einer Formalisierung und Standardisierung verschiedener Wertschöpfungsketten und Produktionssysteme sowie der diese konstituierenden Akteure und Vernetzungen geführt. Aktuelle Studien über die Integration von Produktionssystemen aus dem globalen Süden in internationale Wertschöpfungsketten weisen allerdings darauf hin, dass diese Entwicklung tatsächlich nur teilweise voranschreitet; sie zeigen darüber hinaus verschiedene Limitationen und Mängel bei formalen und standardisierten Koordinierungs- und Kontrollmechanismen auf. Diese entstehen insbesondere, wenn solche Mechanismen von Firmen aus dem Globalen Norden eingeführt werden, die dabei aber nicht die Besonderheiten, die individuellen Zielsetzungen und die Fähigkeiten der betroffenen Akteure aus dem globalen Süden berücksichtigen. Dies führt dazu, dass informelle Akteure, Arrangements und Aktivitäten weiter als wichtige Teile südlicher Produktionssysteme fortbestehen und sich teilweise sogar neue informelle Strukturen und Interaktionen herausbilden. Die vorliegende Arbeit stellt auf der Grundlage von Ansätzen zu Informalität, Prinzipal-Agenten-Ansätzen und der Konventionstheorie die Bedeutung solcher informeller Akteure, Arrangements und Aktivitäten in Süd-Nord-Wertschöpfungsketten heraus und identifiziert hieraus resultierende Limitationen für das Upgrading. Damit trägt sie zur aktuellen konzeptionellen Debatte zu globalen Wertschöpfungsketten und globalen Produktionssystemen

Dannenberg, Peter, Boris Braun and Elmar Kulke 2016: The paradox of formalization and informalization in South-North value chains. – DIE ERDE 147 (3): 173-186



DOI: 10.12854/erde-147-13

bei. Die empirische Grundlage bilden Fallstudien zu exportorientierten Primärgüter-Produktionssystemen in Kenia (Gartenbau), Bangladesch (Shrimps) und Indien/Bangladesch (Leder).

**Keywords** Informality, value chains, Global South, principal-agent theory, convention theory

### 1. Introduction

Large parts of the economies (in particular but not exclusively) in developing countries of the Global South are characterized by informal or partly informal actors (e.g. informal subcontractors, informal intermediaries), arrangements (e.g. informal trade agreements) and activities (e.g. informal production processes). In the past, the majority of Southern businesses sold their products and services on domestic markets with few regulations. This fundamentally changed with globalization and the related global division of labour. Today, an ever-growing number of Southern producers sells directly or transmitted through global value chains to global and often Northern buyers (Henderson et al. 2002, Gereffi et al. 2005). However, products and services sold internationally need to be compliant with international regulations and especially with the national laws of the markets they are sold to. Furthermore, they have to be in line with the formalized product and process standards of the buying companies and the value chains they are produced for (Dannenberg 2011). This rather sophisticated regulatory framework demands much higher degrees of formalization and standardization of production processes and related services. While it could be expected that this would lead to the exclusion of informal actors and practices in South-North value chains, various examples and shocking events (such as the collapse of the Rana Plaza factory in Bangladesh in 2013 and the underlying violations of building standards, labour rights and health standards in the country's garment industry) show that this is not actually the case (Strasser et al. 2013).

This paper shows that coordination and control structures of today's international value chains and conventions of doing business in these chains on the one hand and capabilities and interests of actors and their embeddedness in Southern regions with their particular infrastructures, domestic conventions and socio-cultural settings on the other hand lead to production systems in which informal actors, arrangements and practices are not rare exceptions but common and even constitutive elements. Further, we show that such informal arrangements and structures are

hard to evaluate. They can, for instance, include positive aspects, such as the (further) integration of small-scale businesses, as well as serious limitations for the development and competitiveness of the value chains with regard to product or process upgrading. Against this background, we first briefly discuss the concepts of global value chains and global production networks as an analytical framework to understand the coordination and control mechanisms in international value chains. We aim to enrich this debate by linking it with reflections on standards, conventions and processes of upgrading (Section 2). We do this in outlining circumstances which lead to or at least support certain forms of informality and show how these forms of informality affect value chains (see *Table 1*). To do this, we use the examples of the Kenyan fresh fruit and vegetable production, the shrimp industry in coastal Bangladesh, and the Indian and Bangladeshi leather industries in order to illustrate and develop our conceptual arguments (Section 3). By building on these specific examples of value chains, we outline in how far the current approaches on value chains and production networks can be complemented by a better understanding of largely informal actors, arrangements and practices. The paper ends with a short conclusion summarizing our findings and discussing their relevance for the research in South-North value chains (Section 4).

### 2. Conceptual considerations

#### 2.1 Global value chains and global production networks

During the last decades, value chain approaches have become an important tool to describe and analyze the linkages between actors and the spatial patterns of economic activities. Classic value chain models describe the path of a product from the raw material through various stages of production to the final product and delivery to the consumer, while more recent approaches also focus on immaterial linkages and on power relationships between different actors in the chain (for an overview see e.g. Kulke 2007). The different forms of co-ordination between these actors are discussed by the Global Value Chain (GVC) approach. According to Gereffi et al. (2005), the specific form of

co-ordination is determined by the complexity of the knowledge transfer, the capability/competence of the actors involved and the level of codification of the information. Between the two most extreme forms of co-ordination, market (for highly standardized products and a limited need for information transfer) and hierarchy (with high complexity of knowledge and high transaction costs), intermediate forms of coordination such as “modular”, “relational” and “captive” relationships can be identified. GVC mainly focuses on the vertical coordination and organization within the chain. Alternative models such as the Global Production Network approach (GPN and its revised version GPN 2.0) also include horizontal and more network-like linkages (Henderson et al. 2002; Coe et al. 2004; Yeung and Coe 2015). Relationships between actors are considered in the dimensions of vertical and horizontal interdependencies which are marked by the dimensions of embeddedness, power and value (Henderson et al. 2002).

Even so there have been significant changes in the recent past, where Southern actors managed to upgrade their production processes and gain more sophisticated functions and powerful roles in the chains (e.g. in the electronics or diamond sector; Henn 2012; Fu et al. 2012); many actors in the Global South are still suppliers at the very end of the chain with limited capabilities, weak power resources and a low contribution to value creation (at least with regard to the share of revenues they receive). However, as we outline below, they are often embedded in a very specific informal institutional, cultural and social context and different non-industrial conventions. This can help them to become or stay integrated in the international value chains but also may limit their potentials of upgrading within the chain.

To analyze the organization of value chains between the Global North and the Global South, three aspects connected with the considerations of GVC and GPN are of special interest: the level of formality/informality (which is also conceptualized in convention theory), standardization as an important coordination and control mechanism (which will be linked with reflections on principal-agent problems between different actors in the chain), and the potential of upgrading production.

### 2.2 Informality and conventions

As outlined above, informal arrangements play an important role in business interactions in the Global

South (Strasser 2015). Informal arrangements are usually based on oral exchange, only slightly codified and flexibly enforced based on social relationships. In contrast, formal business interactions are strongly codified and based on written contracts with the background of abstract laws, regulations and formal institutions. However, there is not a simple binary distinction between formal and informal arrangements. Instead “informality may best be understood as a continuum of interrelated social processes and practices with different degrees and qualities of (in)formality” (Etzold et al. 2009: 4). Written contracts can – for example – be replaced by oral arrangements based on personal trust between the relevant actors. The degree of the formality or informality of different practices depends on the specific institutions and actors and the nature of social ties (Etzold et al. 2009, Strasser 2015).

A useful approach to conceptualize formal and informal practices in trade relations is convention theory (CT; for an overview from an economic perspective, see e.g. Wilkinson 1997). The CT concept has only recently begun to receive more attention from researchers studying global commodity and value chains (e.g. Ponte and Gibbon 2005, Rosin 2008, Ponte 2009, Sage and Goldberger 2012, Bernzen and Braun 2014). However, CT provides a useful framework to explore how uncertainties and risks (e.g. lacking product quality or delivery reliability, risk of opportunism) can be addressed in economic transactions, especially if these span borders, longer distances and different institutional contexts. What makes the CT approach particularly relevant to the analysis of transactions within value chains is its strong focus on different types of coordination between suppliers and buyers. Moreover, the concept sheds light on the ways trading partners deal with uncertainty by drawing on different conventions (or worlds of justification) with distinct modes of evaluation.

Several forms of conventions have been distinguished in the academic literature (see e.g. Boltanski and Thévenot 1999, Rosin 2007): most importantly “market” (short-term market relations evaluated by price, competitiveness), “industrial” (based on standardization, efficiency), “domestic” (based on reputation, trust, tradition), “civic” (based on collective interest), and “opinion” (public opinion, renown). Such different conventions can be contrary to each other (e.g. state regulations which are in conflict with social and cultural norms; Pauls and Franz 2013). Recent findings by Bernzen and Braun (2014) for international

organic food chains show that while industrial conventions such as standards and third-party certifications (industrial) have gained increasing significance in recent years; other ways to ensure quality for buyers and consumers can coexist and are still relevant. Less tangible forms of coordination such as mutual trust established through relationship management and the building up of reputation are still important factors for successful transactions and the reduction of uncertainty, especially if the partners of the transactions are institutionally, socially and culturally “distant” from each other (see also *Bernzen* 2014). These findings suggest that formal and informal institutions and conventions not only coexist within the same value chain, but that they can be closely entangled even within the same transaction.

### 2.3 Standards and principal-agent problems

Standards are important instruments to ensure high product and process quality and to achieve upgrading of products and processes. Standardization can be widely observed in international value chains all over the world (*Ponte and Gibbon* 2005). While a national production system is integrated into a homogeneous institutional framework (i.e. regarding laws and regulations), this is generally not the case for international value chains. Strong differences especially occur between the countries of the Global North and developing countries. So far, only very few international regulations exist to control global business relations and, even where regulations exist, their enforcement is often difficult (*Riisgaard* 2009). However, national laws of the final markets as well as customers and consumers demand compliance with different product (e.g. quality and safety) and process requirements (e.g. labour and environmental standards; *Nadvi and Wältring* 2002). As a result, there is an increasing demand for regulation and control on an international level to ensure that such requirements have been met before the products reach their final markets.

To fulfill this demand, the lead firms of international value chains are increasingly using international private business standards (*Nadvi* 2008). While product standards can usually be controlled ex-post, this is not possible for most processes. Therefore, frequent controls of the entire production process are necessary, but hard to achieve. This bears the possibility that standards are not met; e.g. if the producers or other actors in the value chain can gain advantages by not ful-

filling the standards' requirements or are not able to fulfill them (*Dannenberg and Nduru* 2013). In such cases, the objective of the lead firm would not be reached.

In developing countries, the introduction of private standards and other buyer requirements are often serious threats which can lead to the exclusion of large numbers of small producers who are not able to fulfill these requirements (*Riisgaard* 2009). This can have a serious impact on other actors of the regional industry whose turnovers and profits are dependent on the supply base provided by small-scale producers (e.g. middlemen and exporters). These downstream actors aim to keep their supply base even if this is in conflict with the objectives of their buyers. In such situations, it is likely that informal arrangements are developed in order to bypass the standards and related controls so that the suppliers can remain in the chain (*Dannenberg and Nduru* 2013).

The problems of different actors with individual objectives are depicted in principal-agent models (P-A models; see e.g. *Grossman and Hart* 1983, *Hirschauer* 2004). P-A models are used to analyze the microeconomic situation of buyers (principals) and sellers/producers (agents) with different interests and with asymmetric information access. Typically, four problems can occur: hidden product characteristics, hidden information, hidden action and hidden intention. In international value chains where large numbers of contractors and subcontractors are involved, it is difficult to collect information on all the characteristics (e.g. capabilities, objectives) of the agents involved so that problems of hidden characteristics can occur and suboptimal contractors are chosen. While problems of hidden information (e.g. on the real quality of a product) can be reduced through product standards, process-oriented standards can barely be controlled ex-post so that hidden actions in processing can be expected. According to the power asymmetry between buyers and suppliers, hidden intention problems of the agents (e.g. the danger of a hold-up) are less likely but can occur vice-versa (e.g. if a producer is forced to sell perishable products under price).

### 2.4 Potentials of upgrading

Opportunities and the potential for upgrading economic activities are of central importance for economic development in the Global South (*Gereffi and Memedovic* 2003). Upgrading within value chains



can improve competitiveness, open up new economic pathways, reduce dependencies from Northern leading firms, and improve the overall social and environmental situation in production regions of the Global South. *Humphrey* and *Schmitz* (2002) distinguish four types of upgrading: (1) Process upgrading is defined as improvement in the production process based on investment in new technologies and operational procedures; this allows cost reductions but also improvement in the environmental performance of a firm or the implementation of higher health and safety standards for workers and consumers. (2) Product upgrading means improvement in the goods produced either by product diversification or by better product qualities; this opens up the possibility to increase the value added. With (3) functional upgrading, the firms are fulfilling additional responsibilities in product development (R&D), marketing or distribution. (4) Inter-sectoral upgrading is defined as inter-sectoral diversification, e.g. by tapping into new markets and product lines. All kinds of upgrading do not only have an economic dimension but can also affect social and environmental aspects. However, the realization of upgrading is strongly influenced by specific framework conditions and different realities in different value chains. Usually, a decisive role is attributed to the lead firms that govern and coordinate the respective value chains (e.g. the willingness of the lead firm for knowledge transfer, the ability of the lead firm to implement standards as well as effective forms of supervision and advice etc.; *Humphrey* and *Schmitz* 2002; *Giuliani* et al. 2005). Moreover, the abilities of upstream suppliers to realize innovations or the support of public institutions, business associations and NGOs also have a strong impact on the level and forms of upgrading that can be achieved (*Humphrey* and *Schmitz* 2002). However, in the following section we shall mainly focus on the interplay between formality and informality, the roles of process standards and conventions, and the impact on the structure of the value chains. As functional and inter-sectoral upgrading is hard to achieve for small primary producers, we shall focus our case studies on the possibilities and limitations of product and process upgrading.

### 3. Realities in different value chains

The empirical case studies of different primary production-based value chains will exemplarily highlight in how far the outlined processes and elements and their manifestations in specific environments in the

Global South can significantly shape the structures, interactions and dynamics of the value chains and the perspectives of businesses within these chains. The empirical case studies are all based on rich quantitative and qualitative data sets of extensive field studies conducted by the authors of this paper and their research teams. These include:

- a quantitative survey of 170 export-oriented fresh fruit and vegetable farmers in the Mt. Kenya region as well as additional interviews with experts and stakeholders along the international value chain (empirical analysis 2008-2010; see *Dannenberg* and *Nduru* 2013, *Dannenberg* 2012);
- an in-depth qualitative survey of more than 30 Bangladeshi shrimp farmers and several shrimp processing plants in and around Khulna and Chittagong as well as additional firm and stakeholder interviews along the international value chain (empirical analysis 2006-2010; see *Dietsche* and *Braun* 2008; *Dietsche* 2011);
- a quantitative analysis of 119 tanneries in Dhaka combined with semi-structured interviews with further producers, processors and traders along Bangladesh's leather industry and the international value chain as well as supporting expert interviews (empirical analysis 2011-2014; *Strasser* 2015, *Strasser* et al. 2013);
- a qualitative survey of around 40 leather producing, leather processing or leather trading companies in Kanpur (India) as well as additional expert interviews and a survey of 200 leather and leather good importers in Europe (empirical analysis 2006-2010; *Braun* and *Dietsche* 2008, *Dietsche* 2011).

#### 3.1 Informal arrangements in standardized chains – the case of the Kenyan fresh fruit and vegetable industry

The Kenyan fresh fruit and vegetable industry has been analyzed in various studies and has generally been considered a success story for the integration of Southern small-scale producers in international value chains (*Dijkstra* 1997, *Dolan* and *Humphrey* 2004, *Ouma* 2010, *Dannenberg* and *Kulke* 2014). Great attention has been paid to the introduction of the private process-oriented standard GlobalGAP as a quasi-mandatory requirement to supply European retailers

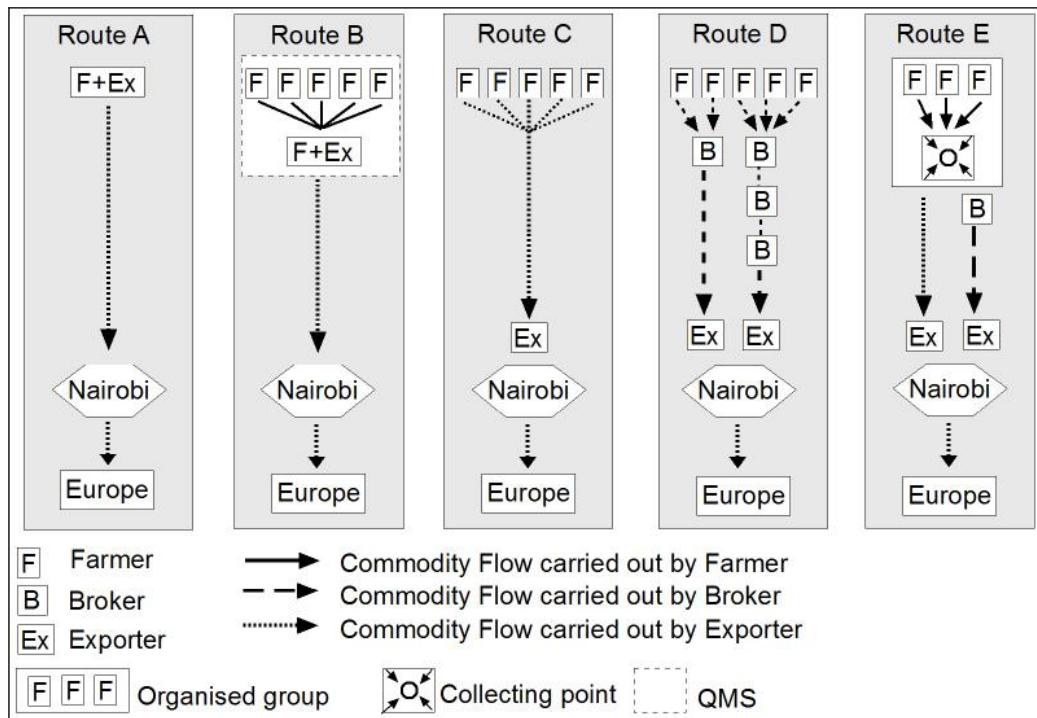


Fig. 1 Routes of Kenyan fresh fruits and vegetables exports from the farm gate through the value chain (Dannenberg and Nduru 2013: 48)

in the early 2000s (Dannenberg 2008, Ouma 2010, Dannenberg and Nduru 2013). Under the pressure of growing consumer awareness, GlobalGAP was developed by a consortium of the majority of large European food retailers as a risk management tool to prevent food scandals and guarantee transparency in the value chain (which can be regarded as a form of process upgrading). GlobalGAP was primarily oriented on the situation and capabilities of European producers which included good transport infrastructure, an advanced regulatory framework, strict enforcement laws and highly capable modern producers (Dannenberg 2012). Studies concluded that the majority of small-scale family farmers with limited capabilities were not able to fulfill the standard, which led to their exclusion (see e.g. Graffham et al. 2007).

While more recent studies underlined the insufficient capabilities of Kenyan small-scale farmers to formally fulfill the GlobalGAP standard (at least on their own), they revealed that both farmers and Kenyan traders (exporters and middlemen in the production region) developed different informal arrangements to keep farms without a GlobalGAP certificate included in the chain (Dannenberg 2008, Ouma 2010). Dannenberg and Nduru (2013) identified two different types of informal arrangements (with mixed types in between) which occurred in

different trading routes of the Kenyan fresh fruit and vegetable value chain (see Fig. 1):

1. Informal arrangements in integrated and internally controlled systems: In these arrangements, exporters, who are dependent on large domestic supply in order to achieve high turnovers, established support systems to integrate non-certified farmers into the value chain. Even so, many farmers in these systems do not possess a GlobalGAP certificate; they are strictly controlled through quality management systems (QMS) and are financially supported and technically guided by the exporters. Here, most GlobalGAP requirements are fulfilled, but production costs are lower as the costs of formal certification are saved (e.g. auditing costs). Dannenberg (2008), Ouma (2010) as well as Dannenberg and Nduru (2013) found clear evidence that these practices were often known by European buyers but unofficially accepted as a form of compromise based on reputation, trust and long-term relationship (domestic conventions; see Section 2). These arrangements of accepted compromise appear in route B and partly in route E in Figure 1.

2. Uncontrolled informal arrangements: In these cases, the buyer (an exporter, a middleman, or another farmer) buys non-certified and uncontrolled pro-

duce from a farmer and mixes it with products from certified farmers (if the buyer is a farmer, it can also be their own produce) to enlarge the total volumes (typical for route type D in *Fig. 1*). Keeping in mind the process-oriented character of the GlobalGAP standard, such practices are hard to detect ex-post. Such arrangements are usually short term and market-based relationships. For the retailers (and their objective of a functional risk management systems), the consumers (and their objective of process control) and those certified farmers who get their produce mixed with uncertified produce, these arrangements are unfavourable and are, therefore, hidden. However, through these arrangements farmers and middlemen can remain integrated in the chain without certification or the complex and relatively expensive internal control system (this especially occurred in type D of the analyzed value chain).

The Kenyan example demonstrates how informal arrangements and hidden action can flourish in highly standardized value chains. They are even a result of the standardization itself and create an informal-formal paradox. The case study shows the difficulties and limits of the introduction of a process standard to a developing country which has been developed in a Western institutional environment and is based on Western needs and objectives. As has been shown, such difficulties cannot only affect farmers in the Global South (e.g. through exclusion) but also the lead firms and the consumer end of the chain if the local conditions, capabilities and objectives of the principals are not taken into account.

### 3.2 Limits of standardization, traceability and upgrading: the case of the Bangladesh shrimp industry

Shrimp production is of pivotal importance for Bangladesh's economy. Next to the apparel industry, shrimps are the country's second most important export commodity. In 2012, Bangladesh produced 87,500 tons of shrimp, the vast majority of which were exported to countries in the Global North, about 50 per cent to the European Union alone (FAO 2014). Due to its location at the Bay of Bengal, the available areas of low-lying lands and the resulting abundant availability of water, the coastal areas of Bangladesh ideally meet the requirements of shrimp farming.

In contrast to other important producing countries, Bangladeshi shrimps are cultivated rather exten-

sively. The shrimps feed in a mostly natural way and the ponds carry a relatively small number of animals. Nevertheless, Bangladeshi shrimps suffer from a bad reputation on international markets. Sound food safety and non-polluting breeding methods are difficult to achieve in practice (*Dietsche and Braun 2008*).

Very few food commodities are as prone to ecological and hygienic risks as tropical shrimps. Health risks mainly stem from chemical or microbiological contamination. Microbiological deficits are primarily attributed to inappropriate handling of the shrimps after harvest. To prevent an increased bacterial load and the risk of coli bacteria or salmonella, an unbroken cold chain from harvest to processing is of particular importance. Chemical contamination can be caused predominantly by adding pesticides, animal pharmaceuticals and antibiotics for disease control (*Dietsche 2011*).

In addition to food safety problems, negative environmental effects of shrimp production in Bangladesh are widely recognized. Local non-governmental organizations (NGOs) and researchers repeatedly criticize the destruction of mangrove forests and the conversion of paddy fields into shrimp farms, both causing an increase of the soils' salt content and, thus, limiting the land's suitability for agricultural purposes (*Karim 2006*). Another criticism relates to the collection of shrimp larvae in their natural breeding grounds, which causes large amounts of by-catch and, thus, poses an immense threat to the populations of numerous fish species (PDO-ICZMP 2003). Consequently, farmers are obliged by law to obtain their larvae exclusively from professional hatcheries. However, the wild catch of shrimp larvae is still a common (informal) practice despite the ban.

Environmental effects of shrimp farming in Bangladesh and health risks emerging from shrimp consumption are increasingly being covered by media reports in Europe and in other importing countries such as the US and Japan. As a consequence, food safety and environmental problems lead to substantial corporate risks for importers that result e.g. from legal sanctions, civil society pressure or consumer boycotts. The significant probability of antibiotic contamination of shrimps from Bangladesh and numerous reports on environmental problems related to shrimp culture led to several importers discontinuing their orders and choosing safer supplier countries. For this reason, the high prevalence of contamination and the problematic environmental conditions pose an ongoing and serious threat for the Bangladeshi shrimp sector.

A promising option to strengthen the position of Bangladesh in the global shrimp market is product and process upgrading and, in particular, the production of organic shrimps which would achieve higher prices and make better use of the country's favourable natural conditions. To ensure high quality standards and to minimize negative environmental impacts, more and more European buyers are expanding their product range with certified organic shrimps. Bangladesh, however, has not been able to benefit from this global trend towards organic food (Dietsche and Braun 2008). The shrimp industry in Bangladesh has not yet been able to secure high product quality standards and to develop new forms of organization that meet changing consumer preferences and increasing environmental awareness in major export markets.

Although there have been several attempts to introduce reliable process standards or pilot projects of

organic shrimp farming, the fundamental problems of the Bangladeshi shrimp sector continue to exist. Neither European importers nor Bangladeshi exporting firms can guarantee consistently high product quality and compliance with fundamental environmental standards. A major reason for this is the highly segmented character of the value chain within Bangladesh (Fig. 2). Shrimps run through a multitude of production and intermediate trade stages (Dietsche 2011, Huq 2015). Especially the complex middleman system makes it very difficult for international lead firms to fulfill consumer demands for reliable environmental and health standards. As a result, the highly segmented organization of the sector is a considerable obstacle for the implementation of quality and ecological process standards. On the one hand, the farmers do not have enough capital and know-how to diversify their business towards more organic production methods. On the other hand, international buyers are often not able to acquire information on the true origin of the shrimps due to the highly segmented commodity chain. Reliable traceability of the produce is almost impossible under these circumstances.

The example of the Bangladeshi shrimp industry demonstrates that process and product upgrading is hard to achieve and stricter (environmental) process standards are hard to implement when (1) value chains are highly segmented and (2) informal practices dominate many transactions within the chain. In this situation, the ability of lead firms to organize and coordinate the chains can be rather limited, even though market demand and consumer preferences might be supportive of product and process upgrading.

### 3.3 Informality, niche markets and upgrading – the cases of the Bangladeshi and Indian leather industries

For our last industry example, we use the empirical findings of the formal and informal arrangements of leather production (Strasser et al. 2013, Strasser 2015) in Dhaka/Bangladesh. Insights from the leather and leather products' cluster of Kanpur in northern India confirm and complement these findings (Braun and Dietsche 2008). In both cases, a continuum of formal and informal activities and arrangements could be observed, and formal and informal activities are often present in parallel in the same step of the commodity chain. Especially in production, the level of formalization is strongly influenced by the size of and investment in economic activities.

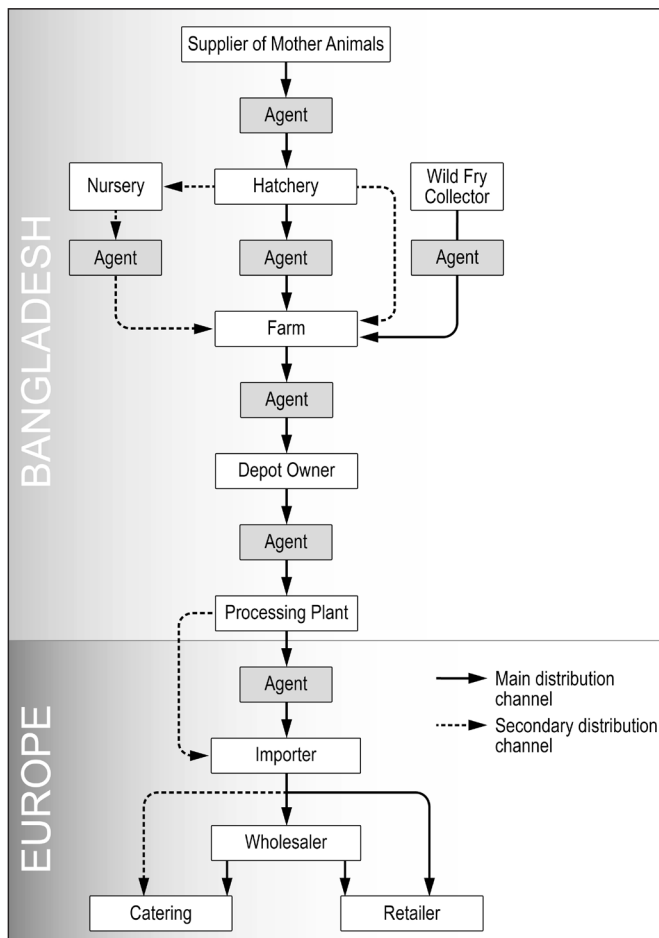


Fig. 2 The shrimps value chain between Bangladesh and Europe. Source: Dietsche and Braun 2008, slightly adapted



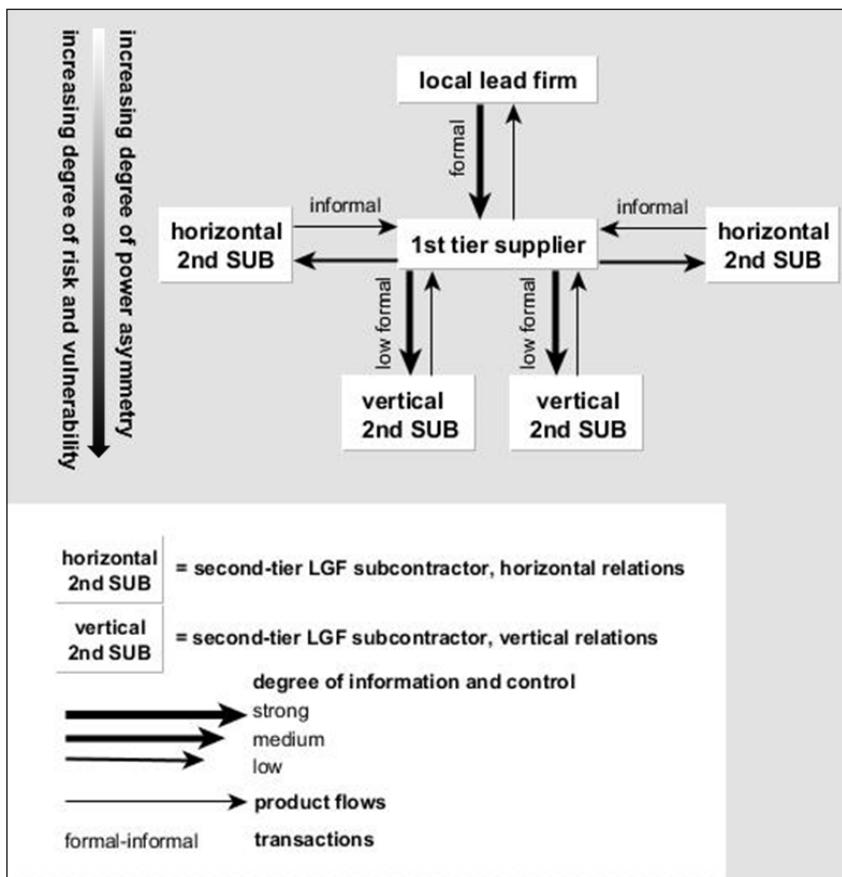


Fig. 3 Multi-tiered subcontracts in the Dhaka leather goods and footwear (LGF) industry. Source: Strasser 2015: 205

In the Dhaka leather production cluster, small informal units produce footwear for the local market, while formally registered large enterprises with modern machinery produce high-quality bags for the global market (see Fig. 3; Strasser 2015). A rather similar structure can be found in Kanpur's leather industry. Larger companies produce fashion and safety shoes for international markets, whereas smaller units either produce for downstream local buyers or exportable niche products such as horse-riding equipment (saddles, harnesses etc.).

There are temporary differences in formal and informal organization. This is particularly obvious in the Dhaka case. During Eid-ul-Azha, the important Muslim sacrifice festival, a huge number of animals are slaughtered and sacrificed within a short period of time (Strasser et al. 2013). This temporary oversupply of raw hides and skins enables additional informal middlemen to enter the supply chain. However, these temporary middlemen lack experience and competence and because of this influence quality and prices. Looking at the economic units, formal and informal arrangements are both constitutive

elements of their internal activities. The employment of workers for simple activities is informally organized while qualified technicians are employed based on written contracts, are registered and enjoy additional benefits. Investment based on credits is normally formalized. Relationships to supply are partly informal – e.g. between the tanneries and the temporary middlemen during Eid-ul-Azha – and partly formal – e.g. to the permanent buying houses/brokers for skins. This brief description of the results shows that formality and informality can be addressed as a continuum of different levels of arrangements that are parallel and temporary. This continuum forms a constitutive element of economic activities in the Dhaka and Kanpur leather industries alike.

Between formality and informality and the potential for upgrading, interdependencies can be observed. There seems to be the tendency that the formalization of arrangements forms a basis for mutual information exchange and, thus, opens up possibilities for upgrading. Upgrading potential exists both in the vertical dimension between production steps and in the horizontal dimension between actors in

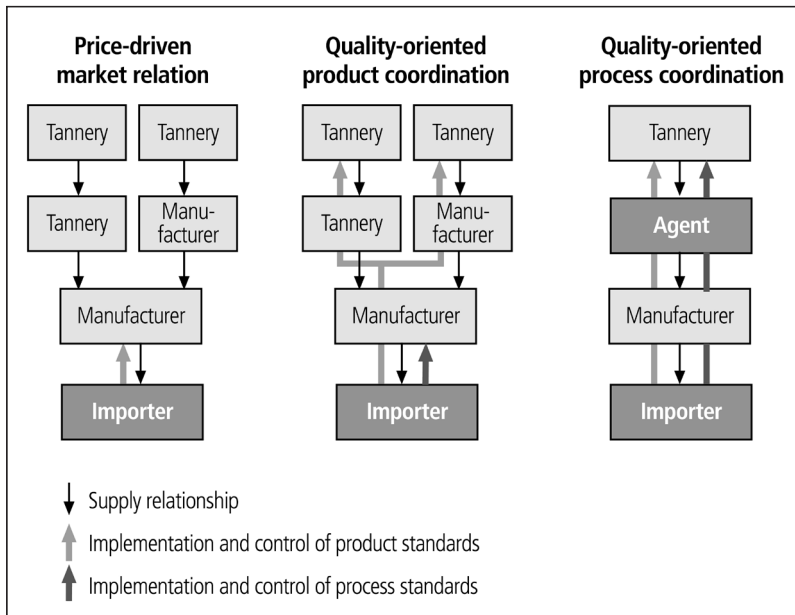


Fig. 4 Three types of chain coordination in the northern Indian leather industry. Source: Braun and Dietsche 2008, slightly adapted

the same step of production. In the leather industry, lead firms produce leather articles (e.g. shoes, bags) and establish permanent relationships with tanneries; they influence these tanneries to deliver better quality (Dietsche 2011, Strasser 2015). Information exchange concerning the specific defined quality standards enables tanneries to realize product and process upgrading. On the same step of production, relationships between lead firms and subcontractors are important for upgrading. Sometimes tanneries do not have the capacity to process all the hides/skins during periods of oversupply; they then employ subcontractors and transfer knowledge to produce comparable quality according to their own standards. This enables the subcontractors to upgrade their production. In many cases, however, these small subcontractors only perform the first and rather dirty steps of the tanning process and are, therefore, not able to fully benefit from the relationship with larger and more internationally exposed companies.

The upgrading of the Bangladeshi and northern Indian leather industries is mainly based on inter-firm relations. Implemented process standards only play an important role for higher priced fashion products or safety shoes (quality-oriented coordination in Fig. 4). Processes in small-scale tanneries and production units that focus on low-quality niche markets with dominant non-industrial conventions are much less formally controlled (price-driven market relationship in Fig. 4). Moreover, up to now, upgrad-

ing in the Bangladeshi and northern Indian leather industries – where it exists – is mainly oriented towards economic dimensions to improve the competitiveness of firms. The dimensions of environmental upgrading – e.g. by reducing the negative environmental effects of the production process – and of social upgrading – e.g. by improving the working conditions of the employees – are still widely neglected.

#### 4. Conclusions

Our case studies from Kenya, Bangladesh and India show that informal actors, arrangements and practices continue to be important elements of production systems in the Global South, even if they are closely linked by commercial value chains to the large and highly regulated consumer markets of the Global North. These findings confirm former studies that show that formal and informal institutions and different conventions do not only coexist within the same value chain but can be entangled even within the same transaction (Bernzen and Braun 2014).

We found extensive informality in all three different industries, even though they were characterized by different product characteristics, different institutional frameworks and different value chain structures (see Figs. 1-3). While e.g. many segments of the leather industry are marked by very limited industrial conventions and the fresh fruit and vegetables

Table 1 Characteristics, effects of and reasons for informality in different North-South value chains (own analysis)

	Case study: Fresh fruit and vegetables	Case study: Shrimps	Case studies: Leather
<b>Major characteristics of informality</b>	<ul style="list-style-type: none"> <li>• Informal actors (sub-suppliers)</li> <li>• Informal arrangements</li> <li>• Hidden actions at farm and trade levels</li> <li>• Informal production practices</li> </ul>	<ul style="list-style-type: none"> <li>• Informal actors (sub-suppliers at the very supply end and mostly informal middlemen)</li> <li>• Informal practices and arrangements</li> <li>• Hidden actions on farm and pre-farm levels</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal variation in the organization of supply chains continuum of formal and informal activities and arrangements</li> <li>• Informal actors (producers and processors; temporary middlemen as constitutive elements of international activities)</li> </ul>
<b>Important effects of informality</b>	<ul style="list-style-type: none"> <li>• Positive: integration of small businesses into the chain</li> <li>• Negative: loss of transparency, intended risk management of the standard GlobalGAP undermined</li> </ul>	<ul style="list-style-type: none"> <li>• Positive: integration of small businesses into the chain</li> <li>• Negative: no consistent quality control, traceability of produce almost impossible</li> <li>• As a result: upgrading difficult and reliable product and process standards hard to achieve</li> </ul>	<ul style="list-style-type: none"> <li>• Positive: integration of small businesses into the chain</li> <li>• Partly opens up possibilities for product upgrading</li> <li>• Negative: only few businesses benefit, very little upgrading in terms of environmental, health, and safety standards</li> </ul>
<b>Main reasons for the existence of informality in the chain</b>	<ul style="list-style-type: none"> <li>• Lack of capabilities of producers</li> <li>• P-A problems</li> <li>• Domestic conventions and strong industrial conventions which are hard to fulfil and force producers to develop informal activities</li> <li>• Reaction on quasi mandatory standards as a result of power asymmetries</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of capabilities of producers</li> <li>• Highly segmented character of the value chain makes formal standardization of processes almost impossible and industrial conventions ineffective</li> <li>• Undersupply of raw material and oversupply of processing capacities</li> <li>• Information deficits of international buyers</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of capabilities of small producers</li> <li>• Very limited industrial conventions and control in some sections of the industry</li> <li>• Temporary oversupply of raw material due to religious peculiarities</li> </ul>

chain is characterized by strong industrial conventions, informal actors, arrangements and production practices occurred in both cases. This strongly indicates that informality continues to be a broad and common feature of South-North value chains even in relatively standardized chains. However, as outlined in *Table 1*, our results show that the characteristics of informality, the effects of informality and the reasons for informality differ significantly.

Informal institutions exist in parallel or in combination with much more formal structures such as formal employment or international product and process standards. A clear empirical distinction be-

tween formal and informal activities is often impossible. This means that informality is not so much a distinct entity or sub-sector within otherwise formal economies and value chains, but rather a more general logic of doing things, getting things done, and keeping small production units included in globalizing value chains. Activities that take place in South-North value chains should, therefore, be seen within a formal-informal continuum.

Standardization of production processes does not necessarily lead to a weakening of informal arrangements. Quite to the contrary, as the Kenyan case study shows, the introduction of standards can even lead to

the emergence of new informal arrangements, actors, and practices, e.g. when formerly formal contractors are pushed into informality when they cannot fulfill sophisticated standards or afford expensive certification processes. This is particularly true in a business environment where the control of standards of the actual implementation of standard requirements is difficult (e.g. in countries with a weak institutional framework and/or few private control agencies) and in cases where the quality of products (e.g. for so-called credence goods) and/or the compliance with process requirements cannot be controlled ex-post. The need for rather flexible supply systems in volatile and cost-sensitive markets even makes complex combinations of formal and informal suppliers as well as formal and informal structures and arrangements more attractive and competitive than highly regulated and formalized value chains.

The complexity of informality in value chains, however, can fundamentally limit opportunities for product and process upgrading. The latter is the case in the Indian and Bangladeshi leather industries where the seasonal emergence of relatively inexperienced informal middlemen leads to a significant loss in product quality (as has been shown for the Dhaka case during Eid-ul-Azha). Furthermore, process upgrading seems to be more difficult in value chains for niche products due to limited pressure from lead firms and consumers. The case of the shrimp sector in Bangladesh clearly demonstrates that highly segmented value chains with a large number of (mostly informal) middlemen can make it very difficult to implement effective product and process standards because the complexity of the chain makes the traceability of produce along the chain almost impossible. Improvements in product quality and the environmental situation in the production areas are, thus, hard to achieve. Thus, the effectiveness of formal quality standards and the chances for product and especially process upgrading are limited. Instead of formal standards, informal arrangements and relationships as well as domestic and civic conventions are often the only effective way of “control” if buyers decide to source from a diffuse field of small subcontractors and/or highly segmented value chains.

### Literature

- Bernzen, A. 2014: Reassessing supplier reputation in international trade coordination: a German and Australian perspective of global organic food networks. – *DIE ERDE* **145** (3): 162-174
- Bernzen, A. and B. Braun 2014: Conventions in cross-border trade coordination: the case of organic food imports to Germany and Australia. – *Environment and Planning A* **46** (5): 1244-1262
- Boltanski, L. and L. Thévenot 1999: The sociology of critical capacity. – *European Journal of Social Theory* **2** (3): 359-377
- Braun, B. 2005: Building global institutions: the diffusion of management standards in the world economy – an institutional perspective. – In: *Alvstam, C.G. and E.W. Schamp* (eds.): *Linking industries across the world: processes of global networking*. – Aldershot: 61-71
- Braun, B. and C. Dietsche 2008: Indisches Leder für den Weltmarkt. Umweltprobleme und Standards in globalen Wertschöpfungsketten. – *Geographische Rundschau* **60** (9): 12-19
- Coe, N.M., M. Hess, H.W.-C. Yeung, P. Dicken and J. HENDERSON 2004: ‘Globalizing’ regional development: a global production networks perspective. – *Transactions of the Institute of British Geographers* **29** (4): 468-484
- Dannenberg, P. 2012: Standards in internationalen Wertschöpfungsketten.: Akteure, Ziele und Governance in der Obst- und Gemüse-Wertekette Kenia-EU. – *Münster*
- Dannenberg, P. 2011: Wege aus der Ausgrenzung – informeller Umgang mit dem Standard GlobalGAP im kenianischen Gartenbau [overcoming exclusion – informal dealing with the standard GlobalGAP in the Kenyan horticulture industry]. – *Geographische Zeitschrift* **99** (4): 237-255
- Dannenberg, P. 2008: Challenges for African food producer in the integration in international value chains – the example of the food standard Globalgap in the horticultural production region Mt. Kenya. – *Zentralblatt für Geologie und Paläontologie* **3** (1): 337-353
- Dannenberg, P. and E. Kulke 2014: Editorial: Dynamics in agricultural value chains. – *DIE ERDE* **145** (3): 121-126
- Dannenberg, P. and G.M. Nduru 2013: Practices in international value chains: the case of the Kenyan fruit and vegetable chain beyond the exclusion debate. – *Tijdschrift voor Economische en Sociale Geografie* **104** (1): 41-56
- Dietsche, C. 2011: Umweltgovernance in globalen Wertschöpfungsketten. Umweltschutz und Qualitätssicherung im Handel mit tropischen Garnelen und Ledererzeugnissen. – *Wirtschaftsgeographie* **48**. – Berlin, Münster
- Dietsche, C. and B. Braun 2008: Changing the chains: Bangladeshi shrimps, consumer preferences and environmental issues in international trade relations. – *The Journal of Geo-Environment* **8**: 1-13
- Dijkstra, T. 1997: Commercial horticulture by African smallholders: A success story from the highlands of Kenya. – *Scandinavian Journal of Development Alternatives and Area Studies* **16** (1): 49-74



- Dolan, C. and J. Humphrey 2004: Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom. – *Environment and Planning A* **36** (3): 491-509
- Etzold, B., H.-G. Bohle, M. Keck and W.-P. Zingel 2009: Informality as agency – negotiating food security in Dhaka. – *DIE ERDE* **140** (1): 3-24
- FAO 2014: Globefish commodity update: shrimp. – Rome
- Fu, W., J. Revilla Diez and D. Schiller 2012: Regional innovation systems within a transitional context: evolutionary comparison of the electronics industry in Shenzhen and Dongguan since the opening of China. – *Journal of Economic Surveys* **26** (3): 534-550
- Gereffi, G. and O. Memedovic 2003: The global apparel value chain: what prospects for upgrading by developing countries. – United Nations Industrial Development Organization. – Vienna
- Gereffi, G., J. Humphrey and T. Sturgeon 2005: The governance of global value chains. – *Review of International Political Economy* **12** (1): 78-104
- Giuliani, E., C. Pietrobelli and R. Rabellotti 2005: Upgrading in global value chains: lessons from Latin American clusters. – *World Development* **33** (4): 549-573
- Graffham, A., E. Karehu and J. MacGregor 2007: Impact of EurepGAP on small-scale vegetable growers in Kenya. – *International Institute for Environment and Development. – Fresh Insights* **6**. – London
- Grossman, S.J. and O.D. Hart 1983: An analysis of the principal-agent problem. – *Econometrica* **51** (1): 7-45
- Henderson, J., P. Dicken, M. Hess, N. Coe and H. W.-C. Yeung 2002: Global production networks and the analysis of economic development. – *Review of International Political Economy* **9** (3): 436-464
- Henn, S. 2012: Transnational entrepreneurs, global pipelines and shifting production patterns: the example of the Palanpuris in the diamond sector. – *Geoforum* **43** (3): 497-506
- Hirschauer, N. 2004: A model-based approach to moral hazard in food chains: what contribution do principal-agent-models make to the understanding of food risks induced by opportunistic behaviour? – *Agrarwirtschaft* **53** (5): 192-205
- Humphrey, J. and H. Schmitz 2002: How does insertion in global value chains affect upgrading in industrial clusters? – *Regional Studies* **36** (9): 1017-1027
- Huq, H. 2015: Gender in aquaculture. Division of power and work. – Dhaka
- Karim, M.R. 2006: Brackish-water shrimp cultivation threatens permanent damage to coastal agriculture in Bangladesh. – In: Hoanh, C.T., T.P. Tuong, J.W. Gowing and B. Hardy (eds.): *Environment and livelihoods in tropical coastal zones: managing agriculture-fishery-aquaculture conflicts*. – Comprehensive Assessment of Water Management in Agriculture Series **2**. – Wallingford: 61-71
- Kulke, E. 2007: The commodity chain approach in economic geography. – *DIE ERDE* **138** (2): 117-126
- Nadvi, K. 2008: Global standards, global governance and the organization of global value chains. – *Journal of Economic Geography* **8** (3): 323-343
- Nadvi, K. and F. Wältring 2002: Making sense of global standards. – Institut für Entwicklung und Frieden der Gerhard-Mercator-Universität Duisburg, INEF Report **58**. – Duisburg
- Ouma, S. 2010: Global standards, local realities: private agrifood governance and the restructuring of the Kenyan horticulture industry. – *Economic Geography* **86** (2): 197-222
- Pauls, T. and M. Franz 2013: Trading in the dark: The medicinal plants production network in Uttarakhand. – *Singapore Journal of Tropical Geography* **34** (2): 229-243
- PDO-ICZMP 2003: A system analysis of shrimp production. – Ministry of Water Resources. – Program Development Office for Integrated Coastal Zone Management Plan, Working Paper **14**. – Dhaka
- Ponte, S. 2009: Governing through quality: conventions and supply relations in the value chain for South African wine. – *Sociologia Ruralis* **49** (3): 236-257
- Ponte, S. and P. Gibbon 2005: Quality standards, conventions and the governance of global value Chains. – *Economy and Society* **34** (1): 1-31
- Riisgaard, L. 2009: Global value chains, labor organization and private social standards: lessons from East African cut flower industries. – *World Development* **37** (2): 326-340
- Rosin, C. 2008: The conventions of agri-environmental practice in New Zealand: farmers, retail driven audit schemes and a new spirit of farming. – *Geojournal* **73** (1): 45-54
- Rosin, C. 2007: Justifying the 'alternative': renegotiating conventions in the yerba mate network in Brazil. – In: Maye, D., L. Holloway and M. Kneafsey (eds.): *Alternative food geographies: representation and practice*. – Amsterdam: 115-132
- Sage, J. L. and J.R. Goldberger 2012: Decisions to direct market: geographic influences on conventions in organic production. – *Applied Geography* **34**: 57-65
- Strasser, J. 2015: Bangladesh's leather industry: local production networks in the global economy. – Heidelberg et al.
- Strasser, J., P. Dannenberg and E. Kulke 2013: Temporary resource availability and quality constraints in the global leather value chain – the impact of the festival of sacrifice on the leather industry in Bangladesh. – *Applied Geography* **45**: 410-419
- Wilkinson, J. 1997: A new paradigm for economic analysis? Recent convergences in French social science and

## The paradox of formalization and informalization in South-North value chains

an exploration of the convention theory approach with a consideration of its application to the analysis of the agrofood system. – *Economy and Society* **26** (3): 335-339

*Yeung, H.W.-C. and N.M. Coe* 2015: Toward a dynamic theory of global production networks. – *Economic Geography* **91** (1): 29-58