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Production chains as configurations for development

Perspectives for innovation, market development and collaboration¹

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Seeing chains for agricultural and food products as a possible instrument for development processes in the South opens up an important discussion about the institutional architecture of agricultural development. One of the major reasons for introducing market-led development schemes has been the growing pressure for downsizing government and public institutions over the past few decades. As a result, supply chains, entrepreneurs and networks between public and private parties have become more and more actively involved in development processes. At the same time, we have seen the international food trade being subjected to increasingly stringent standards by both public legislation and private demands. The fear that these kinds of regulations could exclude large groups of producers has given rise to a debate about the real implications of trade relations and chain formation. It also raises the question of how producers in the South can equip themselves to be in a strong position to take part in international trade and in international chains. It therefore seems important to reflect on the question of what sort of configuration chains really are, and what the options are for reconfiguring them. This article outlines a number of considerations.

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The link between production in the South and consumption in the North has a long history. Trade in food products such as coffee and tea, or in natural products like rubber and jute, has been an important source of income for many countries. In general, trade in these products takes place through market transactions. Coffee traders take part in a continuous game of supply and demand, and source coffee from all over the world engaging in arm's length relationships. In the growing trade in non-traditional fresh produce, like green beans or mange-tout from Africa or exotic fruits like mangos and rambutans from Asia, chain management and cooperation figure more prominently. For fresh products, the most decisive market factors are quality and safety, so that buyers are inclined to form more committed and longer-term partnerships with their suppliers. Accordingly, trade in fresh products seems to include more coordination and harmonization.

The food trade makes stringent demands regarding the safety and quality of both product and process. The European retail trade's standards for good agricultural practice (EurepGAP) have been applied for years in developing countries. From January 2005, the European *General Food Law* will apply to trade in foodstuffs from the South. In particular, strict requirements will be in force in two areas: food safety, driven by recent food crises in Europe, and the traceability of the identity and origin of the product. The driving force behind the introduction of such norms and standards is the wish to control food safety risks. Some critics of the negotiations around the World Trade Organization see these norms and standards as technical barriers to market access, and thus as protectionist measures. But the relationship between hygienic or phyto-hygienic requirements and market access is not the subject of this article, which investigates the effects of new forms of regulation on the structure of commercial relations in international chains.

Standards are typically all about the allocation of risks, and are therefore primarily concerned with assigning legal responsibility and accountability. Moreover, standards tend to promote uniformity and to dictate standardized practices. This can make it tempting for buyers of fresh agricultural products to stick to a limited number of large-scale producers with the capacity to make the investments necessary for meeting the requirements. However, this tendency conflicts with the diversity in scale and in practices, in agriculture in the

South. Also internationally sourcing companies like Unilever and Nestlé are considering how to secure a continuous supply of agricultural materials by a diverse group of farmers. It seems inevitable that even large companies are going to need to find ways of maintaining relations with a diverse group of primary producers, since it is doubtful whether large-scale producers alone are capable of producing enough. But large companies will not be keen to take unnecessary risks by sourcing agricultural products from difficult areas and inaccessible producers, unless provides technical, organizational and financial support is provided.

Public involvement in private chains

Public-private partnerships in international cross-border chains have become more and more central to recent discussions about agricultural development in the South. In the follow-up to the Johannesburg conference on sustainable development (WSSD) in 2000, the Dutch Minister of Development Cooperation, Mrs. Van Ardenne, underlines the importance of a good business climate, trade and private investment to the achievement of the United Nations' millennium goals for development in the South. She does not think that Development Cooperation alone is enough to achieve the ambitious aim of combating poverty¹. In collaboration with the Dutch Minister of Agriculture, Nature Management and Food Quality, Mr. Veerman, she seeks to create partnerships between businesses in the North and those in the South with the aim to harmonize sustainable agricultural production with the conditions of international trade and to create room for entrepreneurs². In the light of this, the 'Doornbos' committee recently advised these Dutch Ministers to give priority to capacities and initiatives among rural producer organizations in policies and strategies for international partnerships³. As a result, a number of non-governmental organisations, research institutes, and development, advisory and financing organisations assembled in the network organisation Agri-ProFocus with the aim to strengthen the business capacities of farmers and the negotiating power of producer organizations in the chain.

This policy direction raises the question how chains can be an instrument of development. It puts chain development in a

new perspective: the aim is to strengthen the primary link and to enable it to develop its own relationships with partners. Secondly, it indicates that the public sector seeks ways to play an active role in the dynamics of chains. The growing relationship between public and private players in the formation and leadership of cross-border chains provides an opportunity to pose questions about issues that go further than, for example, efficiency in the transactions between importers and inspectors, or measures guaranteeing food safety. If the commercial interests of a few individual companies no longer dominate the chain, and if there is a growing dependence on input from the public sector, then there is new scope for rethinking the structure of chains. A different foundation could lead to a different structure and to different consequences for players from the South: we could complement or balance the top-down approach, based on the imposition of norms and standards, with a bottom-up approach which takes the strategic interests of producers and traders from the South as its starting point⁴. The rest of this article discusses four considerations for reconfiguring supply chain from this perspective.

Consideration 1: Means or end?

If we reflect on the combination of supply chains and standards, the question arises of who decides the norms, and whose norm applies in cross-border supply chain configurations. In the European context, where large-scale, intensive food production has experienced several crises such as those concerning BSE and dioxins, stringent requirements are in force, reflecting the public health implications of certain ingredients or intensive forms of agricultural production. Advances in measurement and analysis techniques have led to a very strict food safety regime, primarily intended to exclude risks. There is also a tendency among developed countries and food industries to raise standards continuously, and to apply norms that are higher than those enshrined in the national law or in international agreements like the Codex Alimentarius. The above suggest a zero tolerance paradigm in food safety policy and in winning back consumer confidence in food products. It is to be expected that the question of guilt is central to this regime, and this is also reflected in international trade regulations. Although it would seem impossible to keep food production 100% risk-free, we can expect internationally operating food companies and large

buyers to impose more rigorous safety requirements on the production, processing and distribution of food products.

The steering committee on Technology Assessment of the Dutch Minister of Agriculture, Nature Management and Food Quality, points out the disadvantages of the tendency to make the requirements stricter than is necessary from the public health point of view⁵. The steering committee indicates that the strict health and environmental requirements have largely been translated into rules and regulations appropriate for large, centrally managed companies. Companies and producers in exporting countries are stimulated by this to concentrate on the methods promoted in the regulations, e.g. the use of certain quality control systems such as HACCP, or the application of certain methods of pest control, as a condition for gaining access to the enticing consumer market. Companies are obliged to invest in the prescribed practices, even though the consequences for both food safety and market access are uncertain. This leads to a decrease in the range of foods on the market, as only companies able to comply with the regulations have access to the market and can sell their produce to the supermarkets. These are mainly the big companies, which are in a position to fulfil the standards without getting a premium price to compensate for the costs of doing so. The imposition of rules therefore leaves little room for the diverse group of smaller enterprises and producers. Moreover, is the argument of the steering committee, it remains to be seen whether the means, central to the current food safety regimes, are capable of realising the end, namely the provision of healthy food.

This observation does not necessarily imply that big concessions should be made in the field of food safety, health and the environment, in the interests of development in the South. It does however raise the question of whether health and sustainability aims in food production can only be achieved by one route, or whether more than one road leads to a similar outcome. Openness to a diversity of practices would give small producers more chance of participating in international trade and cross-border chains while contributing to a shared aim: healthy and sustainable food production. It demands intensive interaction between members of the chain to establish which practices produce the desired results, as opposed to a blanket imposition of agricultural standards.

Consideration 2: Technology and innovation

If space is created within chains in this way, technological solutions will also have to be sought which are relevant and appropriate to specific agro-ecological and social conditions. With reference to the issue of food security, Bindraban and Rabbinge (2005)⁶ suggest that standard technology has little to offer, and plead for made-to-measure solutions instead of blueprints. In the case of African agriculture, they see more future in mixed farming than in a strategy based on monoculture. They also argue that technology designed for a specific situation gives a good *kick start* to economic and institutional change processes.

Bindraban and Rabbinge's ideas are very relevant to the current discussion about chain formation. We have already seen that the standards and rules currently in force easily lead to a technological uniformity that excludes made-to-measure solutions. An alternative to such a linear model would be one which promotes iterative and participatory technology development. The challenge here for members of the chain is to work out what sort of configuration will increase the innovatory capacity of the chain. Technological and institutional developments are therefore not consecutive phases, as Bindraban and Rabbinge seem to suggest, but, in the context of chains, are parallel and complementary processes.

Chains provide opportunities to connect parties and knowledge systems, linking primary production with industrial processing. They also provide possibilities for increasing employment and added value. From a chain perspective, agriculture is seen in context and not as isolated from other economic activities, and this opens up the potential for interconnections between entrepreneurs. Agro-industrial businesses are still quite rare in Africa, although there are examples such as a buttermilk factory in Mauritania (not yet allowed access to the EU) and Nigerian factory producing starch from cassava, for use in textiles and paper.⁷ The processing of agricultural products has a much longer history in Asia, e.g. fruit-processing in Thailand, fish sauce production in Vietnam, or the production of countless *tofu* products.

The tandem of innovation and value addition introduces a new dimension to the issue of chain development in the South. Up to now, emphasis is often placed on the transfer of new or appropriate technological packages in primary production, for example for increasing harvests or for sustainable use of natural resources. From a chain perspective, however, the focus shifts to innovation for adding value, as part of a competitive strategy. Moreover, by making a link between the technology of production and that of processing, a middle level is created which links local capacity to knowledge and skills elsewhere in the world. A chain can then start functioning as a platform for innovation in which various technological options are weighed up and innovation becomes part and parcel of the behaviour of actors conceptualising chain strategies and reaching various markets.

Consideration 3: local or international?

A discussion of value-adding processing of food products has to be related to the question of which markets a chain wishes to supply. Most Southern businesses involved in food processing and product development orient themselves to the local market, if only because higher tariffs or strict quality requirements apply to international trade in processed products. There is a growing demand for local food products in the fast-growing cities and other population concentrations, something that international companies are also well aware of. Unilever has recently linked up with fish sauce producers in Vietnam: the locally famous fish sauce from the island of Phu Quoc is now marketed under the Knorr label⁸. The same strategy of local adaptation has been used by a company in developing an anti-acne cream based on the yellow dock root, used to treat acne by generations of Vietnamese.

All this suggests that chains can strengthen their position by developing a balanced portfolio of products for various markets. Contemporary thinking about international chains importantly builds on the assumptions that chains are primarily instrumental for the export of one product or product group, and that the sole aim is to gain access to the European, American or Japanese market, which is conditional on fulfilling strict standards and norms. From the point of view of Southern entrepreneurs, such dependence on one market

is not a good idea. Making major investments in order to comply with the stringent requirements of a selection of European supermarkets creates a level of dependence which may undermine their negotiating position. A healthy business climate is therefore well-served by the capability of supplying several markets and to respond pro-actively to demand from various sources. The options of processing their products or focusing on local markets also give producers the chance to retain a larger share of the profits. They do have to make the leap from being a supplier of raw materials to being an entrepreneur trying to find the right partners and exploring a variety of market channels, e.g. export, street sale, tourism schools, hospitals, local supermarkets. The question is whether current standards and norms allow for such entrepreneurial behaviour and encourage learning processes.

Consideration 4: blueprint or learning?

The stringent standards in force nowadays go together with a certain style of collaboration between the various parties in the chain. It seems that producers and businesses from the South have no other choice than to comply with the stream of regulations, inevitably making their style reactive rather than proactive. Consequently, their relationship with the buyers of agricultural products is essentially hierarchical. It is doubtful whether such a relationship is beneficial to the various parties in the chain, and yet it seems to be an obvious outcome of the current approach to arranging liability in the field of food safety.

If chain formation is to be more than a system for risk-allocation, it is essential to incorporate management styles which will facilitate the unfolding of learning processes and the development of joint strategies. In view of the current globalization of food supplies, it is very important to be specific about institutional issues affecting collaboration in international chains, and thus to include the perspectives and motives of all the various parties, both public and commercial. Preventing a blueprint, prescriptive approach is essential to ensuring that innovation and market development are carried by local actors. Chain development in different socio-cultural contexts therefore requires a precise and creative approach to management styles and learning processes, including local

social and cultural considerations. According to the South African / Zimbabwean management guru Lovemore Mgibi, the world can learn a lot from African management styles, especially for the management and motivation of groups.⁹ A mix of management styles could form the right foundation for a robust and responsive chain configuration, more able than a hierarchical and linear chain to answer questions about healthy food and sustainable natural resource management.¹⁰

Conclusion

In this article I have tried to widen the discussion about the contribution of chain formation to development processes in Southern countries. The driving force behind closer interaction and coordination throughout the chain is often the spreading of food safety risks and the avoidance of unnecessary costs. If we approach chain formation from the point of view of the interests of producers and business partners in the South, new considerations emerge. These considerations show that chain configurations are far from simple and that there are numerous choices to be made regarding the structuring of innovation processes, market development and collaboration.

Notes

- ¹ See e.g. 'Ondernemen tegen armoede: notitie over economie en ontwikkeling' ('Enterprise against poverty: memo on economics and development'), Ministry of Foreign Affairs/ Development cooperation and the Ministry of Economic Affairs (2002); and the DGIS policy paper (2003) 'Aan elkaar verplicht' ('Committed to each other').
- ² See memo on Beleidscoherentie in ontwikkelingssamenwerking (Policy coherence in development cooperation) – Ministry of Agriculture (2002)
- ³ Commissie Doornbos (2004), 'Plan van Aanpak Strategisch Samenwerkingsverband ter Versterking van roducentenorganisaties in het Zuiden. Accessed December 2005 at: <http://www.agri-profocus.nl/docs/CieDoornbos.pdf>.
- ⁴ The discussion of this question in the article builds on the workshop 'Global and local food chains in Africa: setting the agenda for research', organized on 18 November 2003 at the behest of the North South Centre of Wageningen UR. Thom Achterbosch (Agricultural Economics Research Institute, WUR), Peter Oosterveer (chair group Environmental policy, Wageningen University), Leo van Overbeek (Plant Research International, WUR), Sietze Vellema (Agricultural Economics Research Institute, WUR) and Paul van Zwieten (chair group Fish farming and Fisheries, Wageningen University) laid the foundations for this idea, which was discussed and worked out in a workshop with 50 researchers of Wageningen niversity and Research Centre. Needless to say, the author is responsible for the content of this article.
- ⁵ Advice given in 2003 in response to the conference: Voedselveiligheid tot (w)elke prijs? (What price food safety?). Accessed December 2005 at: http://www9.minlnv.nl/pls/portal30/docs/FOLDER/MINLNV/LNV/STAF/STAF_DV/DOSSIERS/MLV_GOIK/INNOVATIE/MLV_PUBLICATIES_KENNIS/BRIEFVEERMAN.PDF. For a report of the conference see: http://www9.minlnv.nl/pls/portal30/docs/FOLDER/MINLNV/LNV/STAF/STAF_DV/DOSSIERS/MLV_GOIK/INNOVATIE/MLV_PUBLICATIES_KENNIS/INFTK01.PDF (accessed December 2005).
- ⁶ Prem Bindraban and Rudy Rabbinge (2005) 'Development perspectives for agriculture in Africa – Technology on the shelf is inadequate'. North-South Discussion Papers, 2005-1. Accessed December 2005 at: www.wi.wur.nl/UK/resources/discussion+papers. A version in Dutch of this paper was published as: Bindraban, P.S. and R. Rabbinge, 2003. Ontwikkelingsmogelijkheden voor de landbouw in Afrika. Technologie op de plank biedt onvoldoende perspectief. SPIL 193-194; pp. 9-14.
- ⁷ Gerbert van der Aa, 'Afrikaans success: lokale industrieën deinzen niet terug voor slecht investeringsklimaat' (African success: local industries are not cowed by bad investment climate), International Samenwerking, November 2003.
- ⁸ NRC Handelsblad 14 februari 2003.
- ⁹ Interview by Roland Muskens, Internationale Samenwerking, November 2002. Love Mbigi: "The Western management system assumes that every reality can be quantified. If you can't measure it, it doesn't exist. That's a very limited vision. Its weakness is that it only draws from one source: science. If it's 'scientific' then it is good, according to a lot of influential people in the West. But management is not just scientific, it's also emotional, social, political and – yes – even spiritual ... I am profoundly convinced that if we just copy other people's strategies [...] we won't achieve development. Development has to build on the existing cultural tradition."
- ¹⁰ Sietze Vellema, 'Making contract farming work? Society and technology in Philippine transnational agribusiness' (Shaker publishing 2002)



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