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# Exploring the integration of business and CSR perspectives in smallholder sourcing

## Black soybean in Indonesia and tomato in India

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### Abstract

**Purpose** – The purpose of this paper is to assess the impact of smallholder supply chains on sustainable sourcing to answer the question how food and agribusiness multinationals can best include smallholders in their sourcing strategies and take social responsibility for large-scale sustainable and more equitable supply. A sustainable smallholder sourcing model with a list of critical success factors (CSFs) has been applied on two best-practise cases. In this model, business and corporate social responsibility perspectives are integrated.

**Design/methodology/approach** – The primary data of the value chain analyses of the two smallholder supply chains of a food and agribusiness multinational have been applied. Both cases were of a joint research program commissioned by the multinational and a non-governmental organization using the same methods and research tools. Similarities, differences and interference between the cases have been determined and assessed in order to confirm, fine tune or adjust the CSFs.

**Findings** – Both cases could be conceptualized through the smallholder sourcing model. Most CSFs could be found in both cases, but differences were also found, which led to fine tuning of some CSFs: building of a partnership and effective producers organization, providing farm financing and the use of cross-functional teams in smallholder supplier development programs. It was also concluded that the smallholder sourcing model is applicable in different geographical areas.

**Research limitations/implications** – The findings of this study are based on just two cases. More best-practise cases are recommended in order to confirm or to adjust the developed sourcing model and the CSFs.

**Originality/value** – This paper/research fills the need in sustainable supply chain management literature to study supply chains that comply with the triple bottom line concept, rather than supply chains that are just more “green.”

**Keywords** Small- to medium-sized enterprises, Food products, Supply chain management, Developing countries, Business development, Food industry, Commodity markets

**Paper type** Research paper

### 1. Introduction

Leading food and agribusiness multinational enterprises (F&A MNEs), such as Unilever, Mars, Ferrero, Hershey, Nestlé, Cargill, Mondelez and Barry Callebaut, have committed themselves to enhancing their sourcing from small-scale farmers in a way that improves these farmers' livelihood/economic welfare. However, there are several barriers that need to be overcome to achieve this objective, because of the transactional and product-quality constraints of small-scale farmers in developing and emerging economies (London *et al.*, 2010; Wiggins *et al.*, 2010; Torero, 2011; Kabasa *et al.*, 2015). Examples are: dispersed production, low productivity, variable quality, high transaction costs, poor market institutions and an inaccessible rural financial system. Smallholder farming must be upgraded in order to achieve



its full potential in accessing high value-adding supply chains effectively (Humphrey and Schmitz, 2000, 2002; Gereffi and Fernandez-Stark, 2011). Furthermore, F&A MNEs traditionally mainly source commodities from selected large traders and exporters (intermediaries), rather than directly from farmers, because transaction costs are too high. Regarding corporate social responsibility, F&A MNEs applied private (voluntary) food standards, ethical codes and certification schemes as sourcing modes (e.g. Henson and Humphrey, 2009; Geibler, 2013). These conventional sourcing strategies aimed principally at complying with consumer concerns regarding food safety and environmental issues (e.g. Manning *et al.*, 2006; Trienekens *et al.*, 2012), rather than on improving farmers' livelihood. This raises the question how F&A MNEs can best include smallholders in their sourcing strategies in order to take social responsibility for a sustainable and more equitable supply from a business perspective. A sustainable smallholder sourcing model was developed with a list of critical success factors (CSFs) from the literature (Sjauw-Koen-Fa *et al.*, 2016). In this model, the business and corporate social responsibility perspectives are combined. This approach has not been studied extensively (cf. Perez-Aleman and Sandilands, 2008; Alvarez *et al.*, 2010; Vorley and Thorpe, 2014). It also differs from the concept of contract farming, which is defined as an contractual agreement between a focal firm and producers' organization or trader to obtain a supply of raw material product for processing or marketing (e.g. Gulati *et al.*, 2008; Mwambi *et al.*, 2014; Key and Runsten, 1999). The newly developed sustainable smallholder sourcing model with the list of CSFs differs from conventional ones in that it engages farmers in a long-term cooperative relationship with the focal firm. In addition, this model not only comprises environmental sustainability performance, but also aims to improve farmers' livelihood from a business perspective.

In this sourcing model, the business perspective (to secure sustainable supply) and corporate social responsibility perspective (to improve smallholders' livelihoods) are integrated. This model aimed at filling the need in sustainable supply chain management (SCM) literature to study supply chains that comply with the triple bottom line concept (economic, social and environment sustainability) Elkington (1998), rather than supply chains that are just more "green" (Pagell and Shevchenko, 2014; Kleindorfer *et al.*, 2005). It also contributes to the need to conceptually and empirically link the bottom-of-the-pyramid (BOP)/development approaches – referring to smallholder business model – with the SCM to address the social dimension of sustainability management (Seuring and Gold, 2013; Lüdeke-Freund *et al.*, 2016).

The key objective of the present study is to explore the applicability of the newly developed sourcing model with the list of CSFs in two smallholder supply chains of one F&A MNE, namely, the black soybean supply chain in Indonesia and the tomato supply chain in India. Both supply chains have been considered best-practice examples for the exploration of the applicability of the model, including an assessment of the proposed CSFs. Primary data of the value chain analysis of the two supply chains were used to determine similarities and differences, using the framework of the newly developed sustainable smallholder sourcing model with the CSFs as template. The aim is to determine similarities and differences between the cases.

This paper proceeds as follows. In the Materials and methods (Section 2), the developed sustainable smallholder sourcing model and the CSFs is introduced, followed by applied data sources and materials. Section 3 presents the findings of cross-case analysis of the two supply chains, and Section 4 is discussion and conclusions.

## 2. Materials and methods

### 2.1 Introduction to the sustainable smallholder sourcing model

2.1.1 *The conceptual elements of smallholder sourcing strategies.* The literature review was focused on articles that provide insights into smallholder inclusion in high value adding

supply chains from two contrasting perspectives: top-down (from the buyer-focal firm perspective); and bottom-up (from the seller-smallholder perspective). Key articles/sourcing elements were found in the categories of global value chains, SCM, international business management, development, and Business and Society/CSR research strands. In empirical literature for best practice case studies on smallholder inclusion in high value-adding supply chains by F&A MNEs were explored to learn about smallholder sourcing approaches, barriers and drivers, and corporate responsiveness to social issues. For the purpose of the present study best-practice cases is defined as ones that have proven to work well over a period of time and produce good results for buyers as well as sellers. The focus was on scaled sustainable smallholder supply chains that could provide enough data, rather than on pilot projects.

In the literature on global value chains, two key conceptual elements of sourcing strategies for smallholder inclusion have determined. The first one is “upgrading,” which is a key concept for the bottom-up global value chain approach. Gereffi *et al.* (2005, p. 13) defined economic upgrading as a move of firms to higher value added activities or interventions in production to improve technology, knowledge and skills, and to increase the benefits or profits deriving from participation in regional or global production networks. “Upgrading” interventions focus on strategies to effectively bridge the gap between capabilities required for the domestic market and those required for accessing export markets (Humphrey and Schmitz, 2000; Kaplinsky and Morris, 2001). However, there are different types and applications of the concept of upgrading for value chains: process, product, functional and inter-sectoral upgrading (Humphrey and Schmitz, 2002).

The second conceptual element of sourcing strategies for smallholder inclusion is “governance,” which is a top-down global value chain approach. This concept focuses mainly on lead firms and the organization of international industries. Global value chain approaches look at inter-firm collaboration within the supply chain as well as cooperation with non-traditional chain members such as non-governmental organizations (NGOs) (Webb *et al.*, 2010; Hahn and Gold, 2013; Rivera-Santos and Rufin, 2010) as a competitive advantage. Gereffi *et al.* (2005) distinguished five types of governance forms in global value chains and they also postulated a framework of three independent variables to determine (to choose) the governance structure in global value chains: the complexity of information and knowledge required to sustain a particular transaction, the extent to which this information, and the knowledge can be applied and the capabilities of the supply base (Gereffi *et al.*, 2005). We applied the characteristics of smallholder supply as defined by Riisgaard *et al.* (2010) to assess which type of Gereffi *et al.* (2005) governance structure can best coordinate smallholder supply chains lead by F&A MNEs. Humphrey (2004) reported on studies that highlight the role of captive relationships in product and process upgrading for development. The difference between captive and hierarchical (vertical integrations) type of governance of global value chains regarding the “lock-in” approach of suppliers is that in vertical integrations that the lead firm keeps full control of the entire chain for achieving short-term gains, such as lowering transaction costs. In captive governance type, the lead firm cooperates with the suppliers aimed at upgrading suppliers’ capabilities and achieving synergy, i.e. the focus is on long-term gains.

A third conceptual element for smallholder sourcing strategy found was from SCM literature. Hahn *et al.* (1990) introduced the concept of supplier development programs, which would help in upgrading suppliers in developing economies to produce goods – such as apparel and automobile and electronic parts – for MNEs situated in developed countries. They defined this concept as a long-term cooperative effort between a buying firm and its suppliers to upgrade the latter’s technical, quality, delivery and cost capabilities. The ultimate goal of supplier development programs is to form a mutually beneficial relationship

that will help the partners (“buyer and seller”) of the supply chain to compete in the market place (Watts *et al.*, 1992; Krause and Ellram, 1997). The lead firm (F&A MNE) keeps control and monitoring over the entire smallholder supply chain, but the focus is on long-term business perspectives and mutual benefits, rather than achieving quick wins.

The three concepts have been adjusted for smallholder inclusion in high value-adding supply chains and combined them into strategic sourcing concepts as the sustainable smallholder sourcing model (3S-model).

*2.1.2 The CSFs of smallholder inclusion in high value-adding supply chains.* CSFs for smallholder inclusion in high value-adding supply chains is defined as the limited number of areas of activities where “things must go right” to allow this inclusion to flourish (adapted from Rockart, 1979). These are areas/activities in which good performance is necessary to ensure that smallholder inclusion through the supplier development program will become a viable and sustainable business case. To explore CSFs of smallholder inclusion in the literature, we transformed the main sourcing question (“How F&A MNEs can best include smallholders in their sourcing strategies in order to take social responsibility for a sustainable and more equitable supply from a business perspective”) into six critical sub-questions. For the transformation of the main research question we explored SCM literature on the domains of sourcing/strategic purchasing and buyer–supplier relationships, and the literature on subsistence market and BOP on the domains of competitive and institutional environment, networks and farmer business models. The aim was to identify leverage points/synergistic connections between MNE (the buyer), sourcing strategies (top-down approach of the supply chain), and small-scale farmer business models (bottom-up approach of the supply chain). Enabling to define the six sub-questions based on the synergistic connections that were found. Key literature that provided a complete overview of the challenges and dimensions of SCM and the BOP that were explored to determine leverage points/synergistic linking smallholder inclusion in high value-adding supply chains with a business perspectives:

- The SCM domains: the research framework of classical SCM of Chen and Paulraj (2004), the sustainable SCM dimensions of Carter and Rogers (2008) and the elements of the supply-based continuity of Pagell *et al.* (2010).
- The BOP domains: the “BOP producers constraints frameworks” of London *et al.* (2010), the “TOP vs BOP networks and implications for MNEs” of Rivera-Santos and Rufin (2010).

The aim was to identify leverage points/synergistic connections between MNEs sourcing strategies and small-scale farmer business models. The determined critical sub-questions on the main research question (see above) and the related CSFs including the key literature on them were:

- (1) Sub question 1: What are the key characteristics of smallholders in developing regions that are suitable for inclusion from a viable business perspective? CSF (1): smallholders that can be included are commercially oriented and are willing and able to adapt to upgrading interventions (Christen and Anderson, 2013; Torero, 2011).
- (2) Sub question 2: How can smallholder productivity, product quality and delivery be reliably improved to meet the demands of high value-adding supply chains in a sustainable and competitive way? CSF (2): building partnerships for upgrading, i.e. entering into inter-organizational relationships and the capabilities needed to upgrade smallholders (e.g. Monczka *et al.*, 1998; Gold *et al.*, 2013).
- (3) Sub question 3: Which governance structures offer the best upgrading prospects for smallholder inclusion in high value chains? CSF (3): building a captive governance

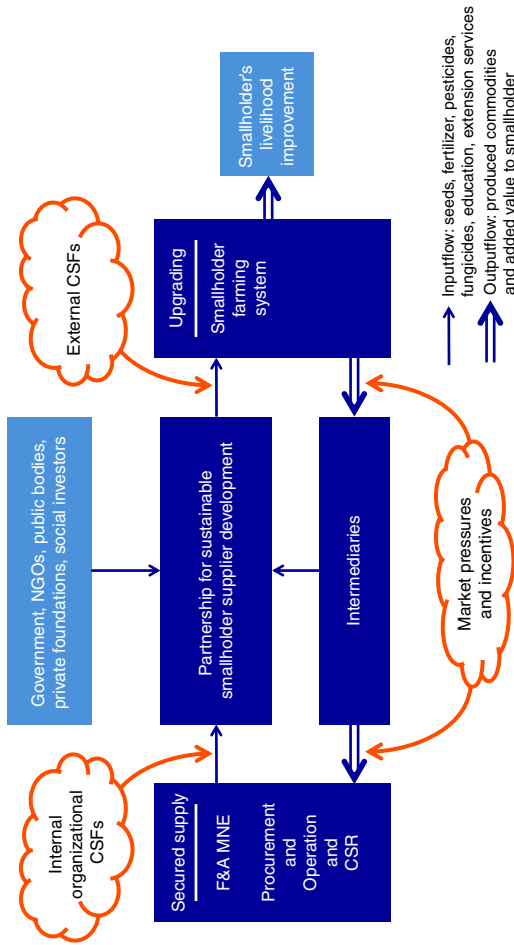
structure based on a cooperative “buyer-seller” relationship (Gereffi *et al.*, 2005; Landros and Monczka, 1989; Mohr and Spekman, 1994).

- (4) Sub question 4: How can vertical coordination in smallholder supply chains be strengthened to effectively and efficiently upgrade interventions? CSF (4): building effective producer organizations to overcome barriers of dispersed production and high transaction costs (Onumah *et al.*, 2007; Chambo, 2009; Getnet and Anullo, 2012; Poole and Donovan, 2014).
- (5) Sub question 5: How can accessible and affordable rural financial systems be created to effectively ease smallholder demand for investment, working capital and savings? CSF (5): building an accessible and affordable rural financing system (Chalmers *et al.*, 2006; Miller and Jones, 2010; Sjauw-Koen-Fa, 2012).
- (6) Sub question 6: What are the commitments, attributes and procurements that organizations need to invest in so as to generate effective smallholder supplier development programs? CSF (6): presence of a proactive CSR strategy supported by a committed top-management (Trent and Monczka, 2002; Mohamad *et al.*, 2009; Tilburg *et al.*, 2012; Gold *et al.*, 2013). CSF (7): use of cross-functional teams within F&A MNEs to harmonize organizational values, routines and resources, and to interact effectively with supply chain counterparts (Trent and Monczka, 1994; Driedonks *et al.*, 2014; Olsen and Boxenbaum, 2009).

*2.1.3 Designing a framework for sustainable smallholder sourcing.* On the basis of the aforementioned three conceptual elements of smallholder sourcing with the list of CSFs (Paragraph 2.1 and 2.2) – combined with the procurement and operation organization from F&A MNEs – developed the framework for a sourcing model for sustainable smallholder supply (see Figure 1). In this newly developed model (further called the 3S-model), the sourcing perspective (i.e. securing a sustainable smallholder supply that complies with F&A MNE business requirements) and the CSR perspective (i.e. improving smallholder’s livelihoods) are integrated. The sourcing process to secure smallholder sustainable supply while improving smallholder livelihood consists of two activities and corresponding structures: the buying process through the supply chain (the axis “F&A MNE–intermediaries–smallholders”), and the upgrading process through the partnership consisting of the F&A MNE, intermediaries and public and private stakeholders. Both supply chain activities are led by the F&A MNE. Figure 1 represents the business transactions between supply chain actors. The single arrows are the input flow consisting of seeds, fertilizer, pesticides, extension services and training which were provided by the partnership to smallholders. The double arrows represent the output flow of products from the smallholders to intermediaries to F&A MNE, and added value/income resulted from the business transaction. Feedback loops of information were not included in the Figure.

The 3S-model consists of six building blocks representing two activities, the buying process through the supply chain (the axis F&A MNE–intermediaries–smallholders) and the upgrading process through the partnership of the F&A MNE (chain leader), intermediaries, and public and private stakeholders: including governments, NGOs, private foundations, social investors, public bodies and input suppliers.

The CSFs that should leverage external (outside the F&AMNE) and internal (within the MNE) organizational challenges of sustainable smallholder inclusion are located at the conjunction of the elements “Partnership–smallholder farming systems” and “partnership–F&A MNEs,” respectively. The business drivers of the output flow are the links to open markets located on the commodity supply chain “Smallholders–intermediaries–MNE.” The business drivers are the links in the sourcing model with the open market triggering the economic viability of the smallholder supply chain.



Source: Sjauw-Koen-Fa *et al.* (2016)

**Figure 1.**  
Sustainable  
smallholder  
sourcing  
model (3S-model)

## 2.2 Data sources and materials

2.2.1 *Case selection.* The cases selected to explore the applicability of the sustainable smallholder sourcing model were Unilever's black soybean supply chain in Java/Indonesia and its tomato supply chain in Maharashtra/India.

The black soybean supply chain was initiated by Unilever Indonesia in partnership with cooperatives of small-scale paddy farmers and the supplier of improved black soybean seeds in 2002/2003. The aim was to secure sustainable supply which is a key ingredient of the authentic black soybean sweet soy sauce brand of Unilever. Locally produced black soybeans, which were traditionally supplied by regional commodity traders, were limited. The aim was to help small-scale paddy farmers in Java to produce black soybeans. The research was focused on the scale-up phase between 2008 and 2013.

The tomato supply chain was initiated in 2011 in partnership with a local food processor. The aim was to produce tomatoes by local small-scale farmers in compliance with Unilever's sustainability codes set by a local food processor (Processor) in Maharashtra. These tomatoes were processed into paste for Unilever India, and used as key ingredient of their branded tomato ketchup. Until then, Unilever India was largely dependent on imports of paste from China, which has higher transaction costs and sustainability certification costs.

These two cases were selected because they were scaled up, and provided longitudinal data and opportunities to review the evolution of the supplier development program (Hahn *et al.*, 1990; Watts *et al.*, 1992), the upgrading program (Humphrey and Schmitz, 2002) and the governance structure (Gereffi *et al.*, 2005) over a period of time. They were part of a joint research program run by Unilever in partnership with an NGO (Oxfam) in the period 2010–2015 (see Tait, 2015). For the research design, they applied similar methods consisted of value chain analysis, data collection method and practical toolkits. They used the link methodology of Centro Internacional de Agricultura Tropical/International Center for Tropical Agriculture, i.e. the Business Model Canvas exercise and the New Business Model Principles (<https://cgspace.cgiar.org/handle/10568/49605>). Both were applied during the farmer workshops. The New Business Model Principles are a set of six business principles that can help evaluate current business practices in terms of their inclusiveness and can help spawn practical ideas on enhancing businesses' inclusiveness. This toolkit was applied to the multi-stakeholder workshop.

2.2.2 *Data sources of the cases.* Primary data for both cases was done by field research during November–December 2013 (see Table AI) consisting of:

- (1) Multi-stakeholder workshops with the main chain actors to explore the (trade) relationships and the flow of products, services and payments between stakeholders in order to design the supply chain map and the inclusiveness of the supplier development program.
- (2) Farmer workshops with groups of farmers with experience of upgrading programs to map the farmers' business model.
- (3) Semi-structured interviews with a number of representatives of all categories of supply chains: key managers (procurement, operation and CSR), farmers, intermediaries, input suppliers, local government servants, NGOs and field assistants.
- (4) Field observations, or secondary data were collected as well, such as those on Unilever sourcing and CSR strategy, local government food security and sector development policy, and statistical data from websites. Case data which were used for the exploration of the applicability of the model were the supply chain map and the farmers business model, and the found CSFs of each case. The results of the exploration are presented for the black soybean case in Paragraphs 4.1 and 4.2, and



for the tomato case in Paragraphs 4.3 and 4.4. In paragraph 4.5, the results are evaluated using the framework of the 3S-model with the CFSs as template, and similarities and differences between the two supply chains were outlined.

### 3. Results

#### 3.1 Design of the black soybean supply chain map and the farmers' business model

Figure 2 demonstrates an overview of the drafted black soybean smallholder supply chains from Unilever Indonesia in Java, based on the multi-stakeholder workshop and information given by the interviewees. There are two black soybean supply chains. One is Unilever Indonesia's own developed supply chain, which runs "Smallholders (members)–Cooperatives–Unilever Indonesia Procurement." The other is the traditional supply chain consisting of selected regional commodity traders running "Smallholders (from other areas than from the Cooperatives)–commodity traders–Unilever Indonesia Procurement." However, both supply chains were interrelated through the application of similar price, product quality and delivery conditions set by Unilever Indonesia. For the purposes of this paper, only results of the "own" black soybean supply chain developed by Unilever Indonesia are presented.

The developed black soybean supply chain (right side of Figure 2) consists of two activities. The first is the buying processes (the axis Unilever Indonesia – Cooperatives–Smallholders) led by Unilever procurement and the second is the upgrading processes (the axis Unilever Indonesia–Cooperatives and the seed supplier) led by Unilever CSR. In this case, the mission of Unilever CSR is to support corporate sustainable business development in Indonesia (Urip, 2010, pp. 99-122). A partnership consisting of the Unilever Indonesia Cooperatives and the seed supplier (represented by the yellow ellipse) was formed to organize and decide how much black soybean could be produced by the small-scale paddy farmers according an agreed supply program.

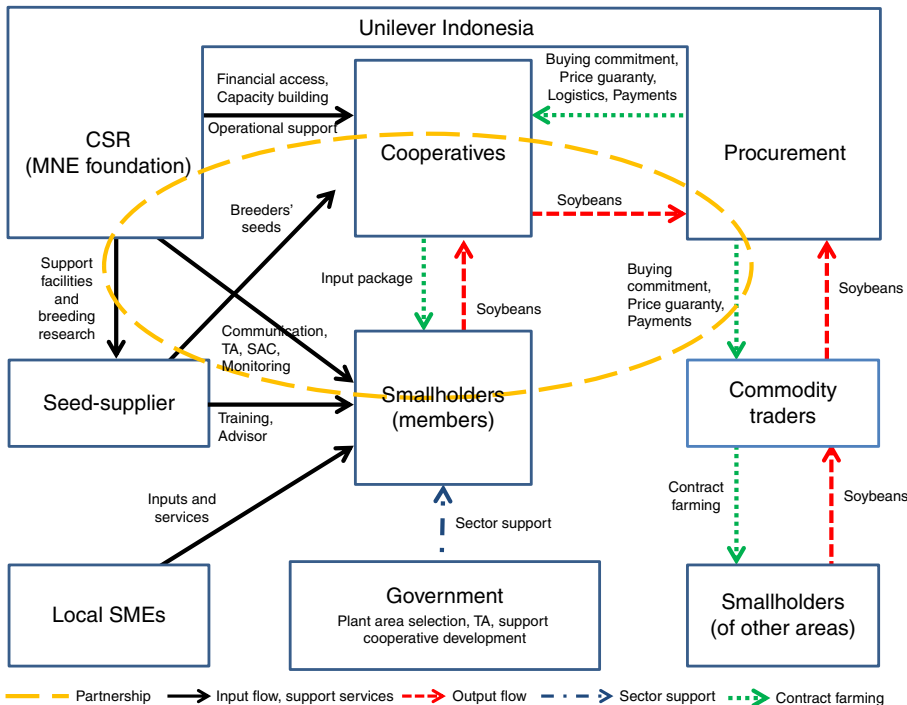


Figure 2. Black soybean supply chain map in Java/Indonesia

The different arrows on the map represent the flow of product, payments and upgrading support provided by supply chain stakeholders during the planting season (see legend of Figure 2). Within Unilever Indonesia, close coordination between Foundation and Procurement staff enables this program to run smoothly. Formal communication mechanisms (regular meetings) had been established from Unilever Indonesia to cooperatives and from cooperatives to smallholders groups. Informal and spontaneous communication seemed to be less fluid.

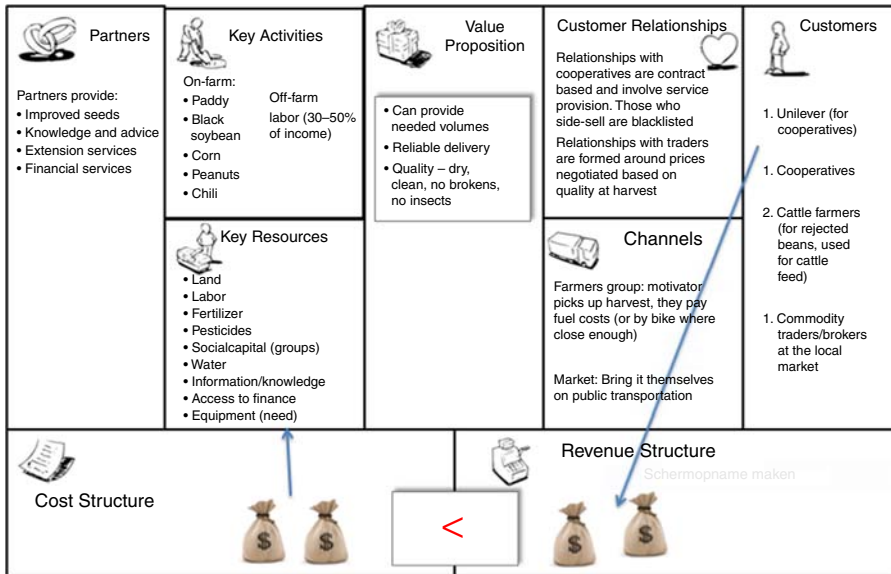
In this map the appliance of the concepts of upgrading (Humphrey and Schmitz, 2002), the supplier development program (Hahn *et al.*, 1990; Watts *et al.*, 1992) and the captive governance structure based on a long-term cooperative relationship with partners by Unilever Indonesia (Gereffi *et al.*, 2005) of the 3S-model have been found. The sourcing process of black soybeans to produce sweet soy sauce started with procurement calculating the required amount of soybeans for the next season to produce sweet soy sauce, including a prefixed farm gate price and product quality before planting and buying conditions. The price was set above the average domestic price and F&A MNE has committed itself to buy all produced soybeans. With this information Unilever CSR consulted the cooperatives and the partnership seed supplier to explore how many of the black soybeans could be produced by the small-scale paddy farmer/smallholders. The outcomes of the negotiations on buying conditions were written down in a memorandum of understanding co-signed by Unilever Indonesia, the Cooperatives, and the seed supplier. As this supply chain could not deliver all the beans Unilever Indonesia required, the remaining soybeans needed for the next season were contracted from selected regional commodity traders operating in other areas than those of the Cooperatives.

It was found that the government was arm length involved in the partnership for upgrading of the smallholders. The explanation is that the Indonesian Government was implementing liberal import policies regarding domestic soybean supply, favoring the import of cheaper (yellow) soybeans (Darantanto and Usman, 2011). The aim was to provide cheap food proteins based on soybeans (e.g. tahu, tempe and tauchou) to low-income households.

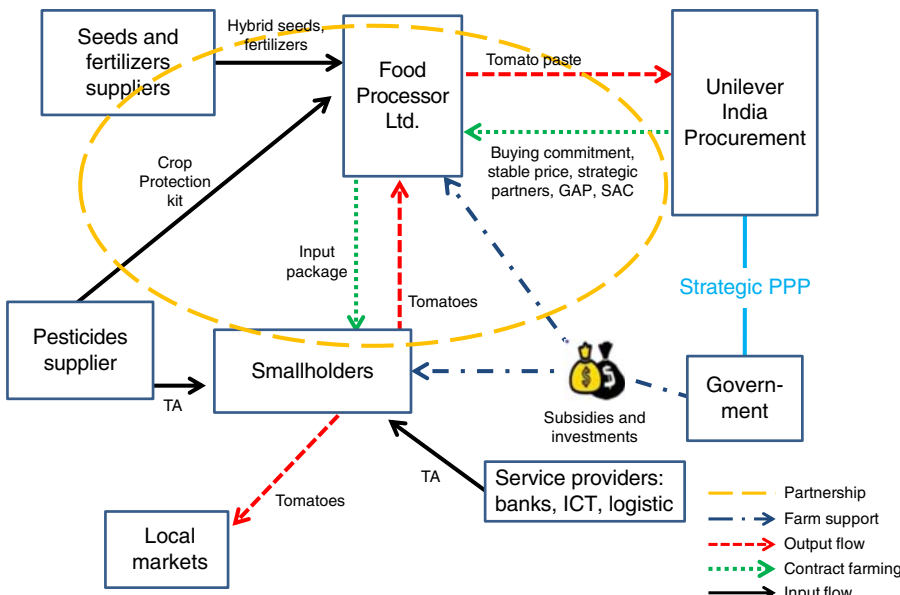
Critical performance indicators of the black soybean supply chain in the period 2007–2013 provided by Unilever Foundation show progressive results. The number of farmers participating in the black soybean program increased in the period from 5,000 to 8,300. The total planted area and the average yield rose from 1,033 to 2,560 hectare and 360 to 700 kg per hectare, respectively. The part of the own supply chain in the total demand of black soybeans of Unilever Indonesia increased from 20 to 60 percent in the same period.

The result of the farmer workshop is the farmers' business model (see Figure 3).

The starting point for reading Figure 4 is the building block "Partners" (Unilever Indonesia/intermediaries/input suppliers) where an upgrading program is offered to farmers for growing black soybeans/tomatoes under certain buying and price conditions. The customers for the products are the intermediaries (cooperatives/processor/local traders), Unilever Indonesia sources from these intermediaries. However, farmers can choose to grow different crops (Key activities) which require different inputs (Key resources) and costs of production per unit (Cost structure). The value proposition of growing black soybeans/tomatoes is that they must comply with Unilever Indonesia's requirements. Farmers must, therefore, enter into a contractual relationship (Customer relationship) with the intermediaries. Farmers sell their harvests to different customers (Channels) and get payment for their deliveries which is the farm gate price per unit (Revenue structure). To turn a profit, the total revenues per unit (R) must exceed the total costs of production per unit (C) at an expected yield per hectare. Therefore, the indicator Revenue/Cost (R/C) ratio is used. A ratio higher than 1 indicates the farmer is turning a profit, while a ratio lower than 1 indicates a loss. The pre-calculated R/C ratio was 1.8 (2013). The costs price of black soybean production was calculated by the University of Gaja Mada. The key parameters of the cost price were: costs (labor, inputs, land rent, tax and spraying); yield and revenues per unit



**Figure 3.** The black soybean farmers' business model in Java



**Figure 4.** The tomato supply chain map in Maharashtra/India

(farm gate price). A positive result (R/C ratio larger than one) of growing black soybeans was also confirmed by cross-checking during the semi-structured interviews with farmers and in the farmer workshop. This indicated that planting black soybean was profitable for farmers. The score card of the New Business Model Principles to examine the inclusiveness

of the black soybean supply program showed also positive results. It was also found that smallholders are free to join the supply program. They could choose to grow another crop, like corn, pepper and groundnut for the local market, which could be more attractive from the business perspective of the smallholder. Existence of some degree of free ridding of smallholders without penalties occurred, when price offered by traders were higher. Domestic soybean price depends on the import price, which is over the year relatively stable. In the period 2011–2014, the domestic price was on average 5 percent above the import price. The prefixed contract farm gate price of black soybeans was related to the domestic price, and was set 5–10 percent higher.

The overall conclusion is that the black soybean case can generally be conceptualized within the framework of the sustainable smallholder supply model, although a direct role of the government in the partnership for upgrading was not confirmed.

### 3.2 CSFs of the black soybean case

The CSFs related to the model that were found in the black soybean supply chain in Java were:

- CSF 1: the selected farmers cultivating black soybean are commercially/market oriented small-scale paddy farmers (0.3 hectares on average).
- CSF 2: A partnership was formed and a supplier development program was set up for upgrading small-scale paddy farmers. Unilever Indonesia procurement led the buying processes while CSR led the upgrading processes, because upgrading local small-scale paddy farmers is consistent with the mission of the Unilever CSR policy.
- CSF 3: the governance structure of the black soybean supply chain is of a captive type led by Unilever Indonesia and is based on a cooperative “buyer–seller” relationship for black soybean supplier development.
- CSF 4: Cooperatives were empowered by Unilever Indonesia in order to strengthen the vertical coordination of the black soybean supply chain. Farmers were clustered into groups in order to communicate effectively and lower the transactional costs.
- CSF 5: the guaranteed price for black soybean of a certain quality, the prepay system before harvest, and a buying commitment provided by Unilever Indonesia eased the credit demand of, and lowered the risks for, the black soybean farmers.
- CSF 6: presence of a proactive CSR strategy for developing a smallholder supply chain to secure a sustainable supply of black soybeans, supported by a commitment of the management at head-quarter as well as subsidiary level of Unilever.
- CSF 7: use of cross-functional teams of Unilever Indonesia procurement and CSR with a clear division of tasks, resources and incentives for effective black soybean supplier development, both focused on the same strategic sourcing goal.

The overall conclusion of the assessment regarding the CSFs of the black soybean supply chain is that they are generally in line with the CSFs identified in the sustainable smallholder supply model. A clear difference we found was that Unilever Indonesia did not extend credit and loans to farmers, as they are not a credit institution.

### 3.3 The tomato supply chain map

Figure 3 gives an overview of the drafted tomato supply chain map for producing tomato paste in the Indian state of Maharashtra. Unilever India is chain leader and buys the paste from a local qualified fruit and vegetable processor (Processor), for which smallholders

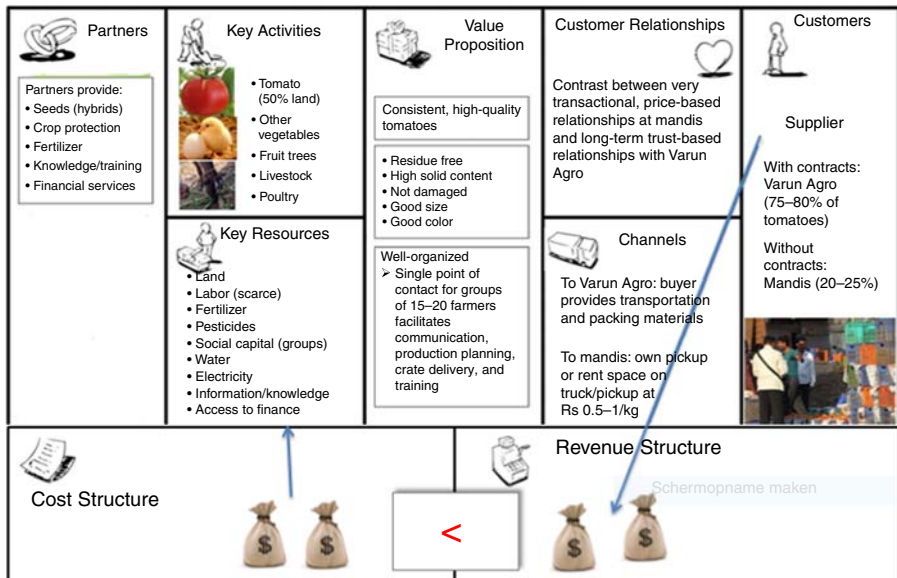
produce the tomatoes that meets Unilever sustainable codes. Therefore, they participate on a contract base in a upgrading program from the Food Processor.

The different arrows in Figure 4 represent the flow of farm inputs and of upgrading support services and of outputs (products and payments) between chain actors. The circle represents the partnership for upgrading support services, consisting of Unilever India, Processor and input suppliers.

The sourcing process of the tomatoes consists of two activities: the buying process of sustainable tomatoes to be processed into paste by Unilever India in the supply chain (the axis Unilever India–Processor (intermediary)–smallholders; and the upgrading process to improve smallholder farming in the supply chain (the partnership of Unilever India–Processor–input suppliers). The participation of the input suppliers as well as the state government of Maharashtra in the upgrading process of smallholder farming were based on a strategic partnership with Unilever India (represented by the yellow ellipse). As such, Unilever India is qualified as leader of the entire tomato (paste) supply chain. The direct involvement of the state government stems from the fact that the marketing system of fruits and vegetables, tomatoes included, in India has historically been strongly regulated by the government (e.g. Hegde and Madhuri, 2013). Therefore, Indian marketing regulations prescribe primary producers (farmers) of fruit and vegetables to sell their harvest in “mandis” (wholesale markets yards) which are governmentally regulated and monitored (e.g. Krishnamurthy and Witsoe, 2012). The drivers of the business case of the tomato supply chain in Maharashtra were the increasing domestic demand for ketchup and the wish to replace the more expensive imports of paste from China. The sourcing process of tomatoes starts with a guarantee by Unilever India to the Processor for minimum volume at a fixed price of the tomato paste supply. Based on this buying commitment, the Processor contracted smallholders for the cultivation of tomatoes that meet the high quality and sustainability standards of Unilever (Sustainable Agricultural Codes) at pre-fixed prices and with a short payment time. These also included a package consisting of training of smallholders, technical assistance and input materials. The Processor committed itself to buy up to 100 percent of the produce, but smallholders were allowed to sell a maximum of 25 percent of their produce on the open market, in case the market price was higher. Smallholders are free to participate in the supply program. They planted on average 50 percent of their land with tomatoes, the other half of the land they grow vegetables, fruit and livestock. Tomato market price is highly volatile because production depends highly on weather condition (production shocks) and lack of warehousing (perishables). Smallholders were organized in groups with a lead farmer as a single point of contact for keeping transactional costs low. Information flows freely through the chain in a variety of ways: training and information services provided by input suppliers and the Processor to smallholders groups, with visits once a week and by mobile phone. There was even interactions between Unilever India and smallholders through meetings and farm visits. In this supply chain map, the appliance of the concepts of upgrading (Humphrey and Schmitz, 2002), the supplier development program (Hahn *et al.*, 1990; Watts *et al.*, 1992) and the captive governance structure based on a cooperative relationship with chain partners by Unilever Indonesia (Gereffi *et al.*, 2005) of the 3S-model have been found.

Critical performance indicators of the tomato supply chain in the period 2011–2014 have shown progressive results. The number of farmers participating in the supply program increased from 650 to 2,500 and in the period. The average yield per hectare increased with 15–20 percent per year. The tomatoes supplied by contracted farmers increased from 60 to 85 percent of the total demand.

The results of drawing the farmers’ business model canvas derived from the farmer workshops and consists of nine interrelated building blocks. It describes the rationale of how farmers create, deliver and capture value (see Figure 5).



**Figure 5.** The tomato farmers' business model in Maharashtra

The found revenue/costs-ratio of tomato production, which was positive (much larger than 1). This information was based on data and information emerging in the interviews, and multi-stakeholder and farmers workshops.

This indicated that planting tomatoes was profitable for farmers. The score card of the New Business Model Principles to examine the inclusiveness of the tomatoes supply program showed also positive results.

### 3.4 CSFs of the tomato case

The following CSFs were found in the tomato case:

- CSF 1: tomato producers were commercially oriented smallholders (1.31 hectare on average).
- CSF 2: a partnership was set up to upgrade smallholder tomato farming, led by Unilever India and Processor, with input from suppliers and the state government.
- CSF 3: the governance structure of the supply chain was a captive type, led by Unilever India and based on a cooperative relationship.
- CSF 4: the existence of producers organization/cooperative was not detected, because the Processor (intermediary) in the tomato case is a private company.
- CSF 5: Unilever India provided buying commitment, price guarantees and short terms of payment to ease farmers' demand for credit and to lower their risks.
- CSF 6: a clear sustainable smallholder strategy by Unilever India was present.
- CSF 7: use of cross-functional teams by Unilever India was not found. The upgrading process was outsourced to Processor who cooperated with the input suppliers. Unilever India-CSR (companies foundation) was not involved in the upgrading process.

The overall conclusion is that most of the CSFs found in the tomato case are in line with the CSFs related to the sourcing model. Differences were found regarding CSFs 4, 5 and 7.

### 3.5 Findings from the cross-case analysis of the black soybean and tomato supply chain

3.5.1 *Conceptualization of the two supply chains within the 3S-model.* In both supply chains, the concepts of upgrading to improve smallholder production (Humphrey and Schmitz, 2002); the supplier development program in which “buyer and seller” enter into a cooperative long-term partnership for upgrading (Hahn *et al.*, 1990; Watts *et al.*, 1992); and the captive governance structure in which the focal firm coordinates the entire smallholder supply chains (Gereffi *et al.*, 2005) have been found.

The cross-case analysis is concerned with determination of building blocks of the two supply chains using the frame work of the 3S-model as template (Table I).

All building blocks of the sustainable smallholder supply model were found in both supply chains, i.e. both cases can be conceptualized through the model. However, there were also differences between the two supply chain maps, namely:

- (1) the involvement in the upgrading process: in the black soybean case Unilever Indonesia was direct involvement in organizing of the upgrading program, while in the tomato case this was “outsourced” to the Processor (supplier).

Building blocks of the 3S-model	Black soybean supply chain map	Tomato supply chain map
<i>F&amp;A MNE</i>	<i>Unilever Indonesia</i>	<i>Unilever India</i>
Procurement and CSR	Procurement: buying black soybeans from cooperatives and traders CSR Indonesia (company’s foundation): leading upgrading processes of smallholders and supporting partnerships in close cooperation with Procurement and CSR formed cross-functional teams	Procurement: buying tomato paste from the local food processor on a supplier (forward) contract basis Upgrading process of smallholders is outsourced to the local food processor with field support from input suppliers CSR India (company’s foundation) was not involved in the case
Intermediary	Cooperatives: representing and facilitating member farmers producing black soybean on contracted base. Worked with farmers groups consisting of 15–20 farmers Unilever Indonesia supported capacity building of the cooperatives and community development	A local food processor (a private company) delivered tomato paste to Unilever India on supply contract basis. Processor organized smallholders to produce tomatoes on a contract farming base, and led the upgrading processes with support from input suppliers. Smallholders were grouped into 15–20 farmers
Smallholders	Commercial/market-oriented small-scale paddy farmers	Commercial/market-oriented smallholders
Partnership model	Partners: Unilever Indonesia, cooperatives and the seed supplier (a university) Government is involved at arm’s length	Partners: Unilever India, local food processor, pesticide and plan protection, and fertilizer suppliers (all were multinational companies) The State Government is directly involved through a strategic partnership with Unilever India
Other chain actors	Local SMEs (farm services providers) NGO (empowerment women farmers)	Local SMEs (farm services providers) No NGO involved
Contribution to smallholders’ livelihoods	Positive indication	Positive indication
Sourcing aim	To secure stable sustainable supply and accelerating the improvement of smallholders’ livelihoods	To replace import of tomato paste with local produce and accelerating the improvement of smallholders’ livelihoods

**Table I.**  
Cross-case analysis of the black soybean and tomato supply chain within the framework of the 3S-model

- (2) The pesticide and plant protection, and fertilizer suppliers were not involved in the black soybean case because smallholders purchased the inputs from local suppliers (SMEs) by themselves. Fertilizers and plant protection chemicals suppliers were in the tomato case involved in the Partnership, providing not only tailored (kits) fertilizers, fungicides and pesticides, but also expertise in the area of micronutrients and soil improvement to smallholders farmers through field-level technical staff. After all, the use of fertilizers and plant protection chemicals in the cultivation of tomatoes are more critical in terms of supply risks, food safety, environmental sustainability and costs of production than black soybean.
- (3) The involvement of the government in the upgrading program, in the black soybean case at arm's length, while in the tomato case they were direct involved.
- (4) The business form of the intermediaries: cooperatives in the black soybean case vs a private company in the tomato case. What learned from the cases is that business form of the intermediary is not a critical factor. More critical attributes were: the aggregation of smallholders in groups of 15–100 guided by a lead farmer (to lower transaction costs); open communication (transparency) regarding the price which is based on a standard cost price calculation; and buying commitments of the F&A MNE. We have added this point to the text.
- (5) The input suppliers: public organization in the black soybean case vs multinational companies in the tomato case.

These differences provide important lessons for (re)designing sustainable smallholder sourcing strategies. For this, we need to take the context into consideration, such as geographical and political differences, and the sourcing strategies of F&A MNEs.

Considerations are discussed below.

Unilever had different positions in the upgrading activity in each smallholder supply chain, but it kept its role as chain leader in both cases, thus, demonstrating to have a proactive CSR strategy (e.g. Tilburg *et al.*, 2012; Trent and Monczka, 2002; Gold *et al.*, 2013). This is the key characteristic of the captive governance structure (Gereffi *et al.*, 2005) and as such confirms CSF 3 in the sustainable smallholder sourcing model. There were similarities between both cases in attributes of the alliances found in the smallholder supply partnerships. For instance, there was a deep understanding of, and commitment to the sustainable sourcing strategy, both at Unilever Indonesia and Unilever India. There were similar capabilities too, including access to local networks to facilitate upgrading and interventions in the long term. In both cases, alliances between participants of the supply program were based on commitment, trust, transparency, two way communication and joint problem solving, i.e. all attributes of cooperative business relationship. The lesson learned from the two cases is that the attributes of alliances of intermediaries (suppliers) and commitment to sustainable and more equitable smallholder inclusion are more important than their business forms. However, the business form is important too, for instance a cooperative gives member farmers more influence on strategies and gives them a voice with which to create a power balance in the value chain. The role and involvement of the government in both supply chains was different. This was geographically determined, and depending on the marketing system. It was regulated in the tomato case and under a liberal market policy in the black soybean case. Nonetheless, government involvement in smallholder supplier development programs is a critical attribute because of its supportive character and its impact on local economic development (Helmsing, 2003).

The differences found in regard to the business forms of intermediaries (cooperatives vs private company), and input suppliers (public organization vs multinationals) confirmed that the business form of the intermediary is not a critical attribute of upgrading programs.



*3.5.2 Similarities and differences in CSFs between the two case.* Comparing the CSFs of both cases resulted in similarities with regard to CSFs 1, 3 and 6, and differences with regard to CSFs 2, 4, 5 and 7. The differences were: CSF 2: partnerships can be built on an operational level for upgrading (in both cases) but also on a strategic level (in the tomato case). CSF 4: this CSF was not found in the tomato case, because the Processor is a private company instead of a producer organization/cooperative. The assumption is that a cooperative representing (naturally) a large number of member smallholders have a better position to lower transaction costs. What learned from the cases is that business form of the intermediary is not a critical factor. More critical attributes were: the aggregation of smallholders in groups of 15–100 guided by a lead farmer (to lower transaction costs), open communication (transparency) regarding the price which is based on a standard cost price calculation and buying commitments of the F&A MNE. Therefore, this CSF has been adjusted into: building effective producer organizations including cooperatives and forming informal farmer groups. CSF 5: in both cases, Unilever eased smallholder financial burdens by providing buying commitments, price guarantees and down payments before planting and harvesting through the intermediaries (Cooperatives as well as Processor). These interventions lower costs and smallholder risks. Therefore, CSF 5 has been modified: reducing farmers' funding costs and risks by providing buying commitment and price guarantees. CSF 7: in the black soybean case, the members of the cross functional teams consisted of staff members of Procurement and CSR of F&A MNE, while in the tomato case the members were intercompany because the project management of the upgrading activity was outsourced to the Processor. Only Procurement of the F&A MNE was involved in the team. What we learned that this is not a weak point. Therefore, we have adjusted this CSF in: "The used of cross-function team within and outside a firm."

#### 4. Discussion and conclusions

As viewed from the MNEs, the food supply challenge is that the global economy is entering a new phase in which a growing concentration of global value chains are driving transformations that are reshaping current governance structures (Gereffi, 2014). In addition, MNEs are increasingly driven by pressures and incentives to play a more proactive role in solving the pressing global problems at the "Bottom of the economic Pyramid" (e.g. Seuring and Müller, 2008; Kolk and Tulder, 2010; UN Sustainable Development Goals, 2015–2030 ([www.un.org/sustainabledevelopment/sustainable-development-goals](http://www.un.org/sustainabledevelopment/sustainable-development-goals))). MNEs are, therefore, urged to take responsibility for the upstream of supply chains as well, when sourcing from smallholders in developing and emerging economies, to pave the way to a sustainable and more equitable world. Leading F&A MNEs have (pro-actively) committed themselves to source increasingly more sustainable produced commodities from small-scale farmers to improve farmers' livelihood in the years to come. Current conventional smallholder sourcing strategies, such as certification schemes and green supplying, are not effective because they are principally focused on environmental sustainability. The newly developed sustainable smallholder sourcing model (Sjauw-Koen-Fa *et al.*, 2016) differs from conventional ones in that producers/farmers are locked in based on a cooperative relationship by the focal firm (MNE), and it includes a list of CSFs in a way to improve farmers' livelihood, rather than focusing on environmental sustainability performances.

The purpose of the present study is to explore the applicability of the developed model in two best-practice cases. The overall conclusion is that both cases could be conceptualized through the 3S-model and CSFs 2 and 4 have been fine-tuned, CSF 5 has been modified and CSF 7 has been adjusted: "Use of cross-functional teams within and outside the firm" (Chen and Paulraj, 2004).

This research project setting in which a multinational and a NGO are involved for value chain analysis has impacted the inclusive interpretation of the research questions, the applied methodology, tools and the used indicators. As such, it strengthened linking of the bottom-up as well the top-down perspectives of the smallholder supply chains. Second, the selected cases cover two smallholder supply chains in different geographical areas under one MNE. The advantage of this approach was that differences in corporate strategy, when comparing cases from different MNEs, could be mitigated in this case. Furthermore, the geographical impact, being the role of the government in the inclusion of smallholders in high value-adding supply chains, could be explored as a control variable of the 3S-model.

Based on the findings of this research, it was concluded that the 3S-model would be a suitable way to conceptualize the dynamics behind sustainable smallholder supply. However, it raises questions about the limitations of the present study. First, despite a positive indication of the contribution to the smallholders' livelihoods, the question remains whether smallholders actually get an equitable piece of the pie. In other words, do they get a fair price for their produce that covers all costs and risks? For several reasons it is hard to give a clear answer to this question. For instance, the business development and learning characteristics of supplier development programs, and agronomical conditions and soil quality can vary greatly between regions and farms. Moreover, smallholders in developing economies are mostly unfamiliar with cost price calculations and bookkeeping and their lack of price and market information often puts them at the mercy of middlemen (e.g. London *et al.*, 2010). Second, although this study illustrates that MNEs can involve smallholders in a sustainable and more equitable way in high value-adding supply chains from a business perspective. However, the overall effect of F&A MNEs in solving global food security and sustainable development challenges must not be overestimated. Among other things, they are constrained by their short-term commercial and business model orientation and their relatively small scale in the global food system compared to the magnitude of the economic development challenge of developing economies. They probably cannot do it alone (Seuring and Gold, 2013; WEF, 2011).

Third, a question that need a clear answer is how autonomy, democracy and mutual social and economic benefits are embedded in both cases, because the interaction between business partners are voluntary based? Autonomy, democracy and mutual benefits of the supplier and customer interaction can be demonstrated as follows: both smallholder supply chains were no vertical integrations that are characterized by managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates. But, it were captive value chains based on a long-term cooperative relationship aimed at upgrading of smallholders to supply high value-adding supply chains. The supply chain maps (Figures 2 and 4) demonstrate the network structure and role of each chain partners. The contracting process for supply started with a proposal from the F&A MNE. Based this proposal, intermediaries consulted smallholders for supply. The result of this consultation round is that proposed farm gate price and buying commitments from the F&A MNEs could be adjusted. The aim is to attack as much as smallholder to meet the required demand of black soybean and tomatoes. The critical performance indicators of both supply chain showed progressive results (see pp. 15 and 21). In both cases smallholders were free to participate in the supply program. They could choose whether to plant black soybeans/ tomatoes or another crop like corn, pepper or peanuts for the local markets. There was some degree of free ridding of black soybean smallholders without penalties when price offered by local traders are higher (we will add this point to the text (p. 20). In the tomato case, smallholders planted on average 50 percent of their land with tomatoes, the other half they grow vegetables, fruit and livestock. They were allowed to sell maximum 25 percent of the produced tomatoes to the Processor at a fixed price regardless of the whole sale market prices (see p. 20). Fourth, the findings of this study are based on just two cases. Food sectors,

geographical conditions, the political context and the sourcing strategies of F&A MNE's can vary significantly. More cases are recommended in order to further confirm or adjust the developed smallholder sourcing model with the list of CSFs, and to validate the CSFs by measuring their impact on the performance indicators of the sourcing model as a critical subject for further research.

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### Further reading

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**Appendix**

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Data	Activities
1. July–August 2013	Definition of the research questions and the priorities of the value chain analysis (methods, tools and related processes) in detail for finding answers to the research questions. Collecting secondary data from internet, etc. Contact with the field research facilitators through conference calls and e-mails
2. August–September	Preparing the field research: Multi-stakeholders and farmers workshop, semi-structured interviews including questionnaires Getting detailed information and data on the supply chains including design of a provisional supply chain map, key chain actors and trade relationships of the MNE as well as external sources (literature, and MNEs' and suppliers' websites)
3. September–October	Studying collected data, reflection on the case and report template Preparing the field research in cooperation with the facilitator: research area, work plan, participants for workshops and interviewees, facilities, location and logistics, etc. Preparing the scenarios for the workshops and semi-structured interviews, checking questionnaires
4. November–December	Field research conducted in Indonesia and India
5. December 2013–March 2014	Data analysis and writing of the report
6. April 2014	Final report to the clients

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**Table AI.**  
Analysis steps time  
schedule of the case  
of black soybean in  
Java/Indonesia and  
tomatoes in  
Maharashtra/India

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