Projet Vision for Change

Sustainable cocoa communities in Côte d’Ivoire

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Landscape approaches to sustainable supply chain management: the role of agribusinesses

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Highlights

- Sustainable supply chain programmes for food and other agricultural products are on the rise.
- Whenever the sourcing area’s quality and sustainability are priorities focus goes beyond the level of individual production units and takes a landscape approach.
- Multiple tools and strategies are available to incorporate landscape sustainability into supply chains.
- Efforts to incorporate sustainability parameters (e.g., reduce water, climate and community risks, losses and waste) and build sustainable supply chains require long-term investment and commitment among supply chain actors at all levels.

1. The need for sustainability in agriculture supply chains

The world population is on the rise, and as a result, mankind faces the challenge of producing food and other raw materials to meet increasing demand. In order to achieve these targets, agricultural production must increase by 70 percent to meet the needs of the projected population of 9 billion by the year 2050 (Kissinger et al., 2013). Furthermore, available land and water have decreased proportionately resulting in major challenges for food security, poverty, climate change, and ecosystem degradation (Kissinger et al., 2013). These challenges are of increasing concern not only to governments, development organizations and research institutions, but also to the private sector, mainly agribusinesses.

The private sector refers to the part of the economy that is not state controlled, and is run by individuals and companies for profit. Agribusinesses may include supply chain actors such as food and beverage businesses, small, medium and large scale farms (producers), processing firms, input suppliers and service providers (Da Silva et al., 2009). They are increasingly engaged in the quest for sustainability in their supply chains in response to global challenges of water and land scarcity as well as consumer demand for products that have been produced sustainably. Addressing these challenges will therefore require...
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better natural resource management to maximize productivity, improve livelihoods, reduce negative impacts on the environment and thus, support the multifunctional role of the landscape. Furthermore, Gale (2000) has argued that there are tensions between economic specialization by firms leading to biodiversity degradation on the one hand, and the diversification principles by the ecosystem approach on the other hand, indicating the need for agribusinesses to take into account the multifunctional use of the landscapes in production of, and sourcing for, their inputs. Despite its importance, the involvement of agribusinesses in enhancing sustainability in food production and marketing has focused mainly on improving the ecological and social performance of some production processes such as farms, forests, and post-harvest operations, and has not taken an integrated view of the entire landscape. This traditional approach contrasts with ecological or landscape approach principles which require a holistic and integrated approach that goes beyond the level of individual production units and takes into account multiple stakeholders from the public, private, and civil society sectors. To date, many agribusinesses have not been widely engaged as partners in landscape management initiatives although interest is on the rise.

This chapter explores how agribusinesses can contribute and be engaged to adopt sustainable landscape approaches in their production and sourcing strategies. The chapter argues that the multifunctional goals of the landscape approach can be made compatible with the profit maximization principle of agribusinesses, which drives specialization in supply chains despite the apparent tension between the two. In particular, the chapter addresses the following questions:

- What is the rationale for landscape approaches in supply chain management?
- How can the private sector create a sustainable supply chain by applying a landscape approaches?
- What criteria and tools exist for integrating landscapes into supply chain management?

2. Defining value/supply chains

Before we begin to explore the role of agribusinesses in ensuring sustainable supply chains, we must have a common understanding of what a supply chain is and what it is not, including what may be considered as critical dimensions of supply chains. While the original definition of a value chain coined by Kaplinsky and Morris (2002) has undergone many modifications, there is a general consensus that a value chain/supply chain entails a vertical sequence of events that lead to the delivery, consumption and maintenance of goods and services. Some authors attempt to make distinctions between value chains and supply chains. For instance, Sturgeon (2001) proposes that value chain be used to denote the entire range of activities required to bring a particular set of products to the market while the term supply chain can be confined to those activities that arise as a response to the impetus of lead firms. In this chapter, value chain and supply chain are used interchangeably as synonyms.

3. Sustainable supply chains - what is about?

With the new challenges faced by supply chain actors, the concept of supply chain has evolved to incorporate sustainability, which was previously thought to be a preserve of economists and environmentalists. For instance, Seuring (2012) contends that globalization has placed demand on supply chain management to go beyond pure economic issues and to incorporate fair labour conditions and environmentally friendly production. The concept
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of sustainable supply chain can be best understood from the definition of sustainable supply chain management, provided by Seuring and Müller (2008) which defines it as the management of material, information and capital flows as well as cooperation among companies while incorporating goals from all the three dimensions of sustainable development, i.e., economic, environmental and social, which are derived from customer and stakeholder requirements. Therefore, for a supply chain to be sustainable, the actors need to fulfil environmental and social criteria in addition to economic ones. Thus, a supply chain is said to be sustainable when it contributes to sustainable development by delivering simultaneously economic, social and environmental benefits (Hart & Milstein, 2003). While the concept of supply chain sustainability is anchored on the principle of intergenerational equity considerations, further elaboration of the three dimensions of sustainable supply chains will suffice to help in understanding how sustainable chains are created.

3.1 The economic dimension

This dimension has been the most explored by supply chain actors and the most researched of the three dimensions (Seuring & Muller, 2008; Seuring, 2012). It focuses on efforts directed by firms towards enhancing total value while reducing supply chain costs. In this case, chain actors strive to maximize profits without compromising the environmental and social/ethical dimensions of sustainability.

3.2 The environmental dimension

This dimension of sustainability draws from the broader definition of sustainability, which is based upon the Brundtland’s definition of “meeting the needs of the present without compromising the ability of the future generation to meet their own needs” (World Commission on Environment and Development, 1987). While organizations have been self-motivated in their attempt to achieve economic sustainability, environmental initiatives implemented in many organizations have been the response to imposed external regulations (Closs et al., 2011). Recently, however, the emerging challenges like the dwindling of the natural resource base, on which many supply chain activities are based, together with consumer demands, could be the driving force behind the quest for environmental sustainability initiatives being implemented by many organizations (Walker et al., 2008). However, organizational commitment to the environmental dimension is reported to vary across enterprises, although studies indicate that firms can increase profit by adopting environmentally sustainable practices (Siegel, 2009).

3.3 Social or ethical sustainability

Within the private sector context, the social dimension of sustainability often focuses on issues related to Corporate Social Responsibility (CSR). The most common definition of CSR is the “… social responsibility of business, which encompasses the economic, legal, ethical and discretionary expectations that a society has of organizations at a given point” (Carroll, 1979). Thus, managers achieve the ethical dimension of sustainability by making decisions that meet the society’s expectations. The societal expectations are not necessarily defined from a legal perspective, but from broader ethical principles that drive the culture and decision-making outcomes within the firm. For instance, agribusinesses may establish schools and hospitals and register for fair trade certification as part of CSR initiatives. The ethical dimension can be classified into employee relations, community involvement and business management practices (Closs et al., 2011).
4. Landscape approaches in supply chain management

Global challenges related to food security, poverty, climate change, and ecosystem degradation are of increasing concern. More and better managed agricultural land is needed to meet the increasing global demand for food, feed, fuel and fibre. At the same time, up to 5 million hectares of productive agricultural land are lost each year due to soil erosion and degradation worldwide, while up to 290 million additional hectares are at high risk of desertification (Eswaran et al., 2001). As a result, there is a push for agriculture to become increasingly ‘multifunctional’ by contributing to food production as well as environmental, social, and cultural benefits at multiple scales. Under conventional supply chain approaches, firms aim to maximize their profit by adopting strategies which will enable them to produce or source their inputs in the most efficient and effective manner. This means that firms will pursue their profit maximization objectives without taking into account the overall consequence on the other supply chain actors including the environment and overall impact on the communities within which they operate, as long as it does not affect their productivity directly. Thus, traditional supply chain management might aim at designing, planning, executing, controlling, and monitoring supply chain activities with the objective of creating net value, and synchronizing supply with demand. However, a ‘multifunctional’ or landscape approach is different in that it deals with large-scale processes in an integrated and multidisciplinary manner, combining natural resources management with environmental and livelihood considerations (FAO, 2012).

Landscape approaches, as defined by Kissinger et al. (2013), provide a framework to carry out an integrated range of activities beyond the farm level to support food production, ecosystem conservation and rural livelihood activities. The necessity of such an approach in market and supply chain management lies in its capacity to capture new markets, mitigate risk, create opportunities at a large scale and improve business governance. For this reason, some agribusinesses are now investing in landscape approaches in the process of securing their sources of raw materials with the aim to positively support the lives of suppliers and reduce potential negative impacts on ecosystems. While such approaches are good steps forward, the sustainability initiatives in agribusiness and the food industry should not only focus primarily on ensuring sustainable supply chains, but it must also include a wider range of factors such as government policies, and social and environmental conditions (LPFN, 2012). These landscape factors include, but are not limited to, watershed health, biodiversity conservation and habitat connectivity, and land and resource tenure.

5. Why firms use landscape approaches?

Agribusinesses may invest in landscape approaches for some or all of the following reasons.

5.1 Achieving Corporate Social Responsibility (CSR)

This goes beyond compliance and engages in activities that promote some social good, beyond the interests of the firm and legal regulations. CSR influences a company’s performance in non-financial areas, such as inclusion of social and environmental considerations in their operations, and embracing sustainability as a key business performance indicator (Kissinger et al., 2013).
5.2 Reducing reputational risk
Reputational risk is the risk that a company will lose potential business because its *modus operandi* has been questioned. For example, if it is revealed that a company has been cheating its suppliers for years or has been operating under extremely bad social and environmental conditions such as the use of child labour, it can negatively affect the businesses’ ‘social license’. Some agribusinesses might want to avoid this situation by adopting landscape approaches to their sourcing in order to strengthen the social and environmental sustainability in their supply chains.

5.3 Mitigating operational risk
This is vital when it is important to ensure the sustainability of the sourcing area. Agribusinesses which depend on specific commodities and inputs from sourcing regions, will seek resource security to maintain their supplies. In this case, the agribusiness may need to focus beyond the individual production unit, which is the farm, and make attempts to conserve the social, economic and environmental factors of production in its area of operation. For instance in the case study presented in Box 20.1, it can be found that Mars Incorporated is not only seeking to improve production and productivity, but is also trying to promote activities that will enhance the wellbeing of the cocoa farmers with the belief that it will ultimately lead to a more sustainable supply of cocoa.

5.4 Capturing markets
By adopting a landscape approach, agribusinesses are likely to build strong business cases for improving and demonstrating their CSR. Benefits might include better alignment with consumer concerns over environmental issues, working conditions and health of workers. In this way they may capture markets that pay premiums when particular concerns are being addressed.

5.5 Increasing partnership, sharing risk and reducing conflicts
Most agribusinesses operate in an environment characterized by multifaceted and complex problems that cannot be addressed by a single actor or company. To address such problems collective action and partnership between public and private actors are often recommended. Multi-stakeholder platforms are now considered as universal solutions to complex problems that businesses, governments, and communities cannot solve individually. By engaging in such participatory, multi-stakeholder platforms there is the opportunity for agribusinesses to share risk and improve the business governance by building collaborations and identifying integrated solutions (Raynard & Forstater, 2002; Kissinger et al., 2013; Ferris et al., 2014).

6. Tools for integrating landscapes into supply chain management
There are many criteria and tools that can be used to integrate the landscape approach into sustainable supply chains. The most important factors in developing more sustainable supply chains are the type of supply chain involved and the individual business’s attitude to extending responsibility for product quality into social and environmental performance within their own supply chains (Smith, 2008). The modes for investing in landscape approaches follow a pattern, largely based on the type of risk faced, the rationale for the business to invest, and the entry point. Most commonly observed criteria are regional
producer support programmes, multi-stakeholder dialogues and vertical and horizontal integrations (Kissinger et al., 2013).

6.1 Regional producer support programmes
Regional producer support programmes can also be used to enhance integration of landscape approaches into supply chain management. The producer support programme comprises several different support activities, including participatory risk assessments, information sharing and learning, technical support, systemic interventions and funding opportunities and mechanisms (FLO, 2011). These can be for a single commodity or for a combination of commodities, which in both cases often lead agribusinesses to define interventions beyond the farm-scale. To achieve a balance in tradeoffs at the landscape scale, the primary objective for such programmes should be integrated landscape management. For instance, Starbucks is integrating climate resilience into the coffee sector in many parts of the world where it sources its raw materials by addressing livelihood needs through higher prices paid for beans and supplemental income from carbon payments giving farmers incentives to not expand coffee growing areas into surrounding forests (Kissinger et al., 2013).

6.2 Multi-stakeholder dialogues
Multi-stakeholder dialogues refer to an interactive working communication process that involves various stakeholders in decision-making and implementation of efforts (Pederson, 2006). An example of the multi-stakeholder dialogues is the global sustainability initiatives such as the UN Global Compact, which is a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles1. This covers the broad areas of human rights, labour, environment and anti-corruption. This overall aim is to ensure that businesses, as a primary driver of globalization, operate such that markets, commerce, technology and finance advance in ways that benefit economies, societies and the environment everywhere. Another example is the Sustainable Agriculture Initiative (SAI) platform which is the main food and drink industry sustainability initiative supporting the development of sustainable agriculture worldwide. The SAI seeks involvement from all food chain stakeholders who are willing to play an active role in the development, recognition and implementation of sustainable practices for mainstream agriculture. Community-based Innovation Platforms (IPs) are another example of multi-stakeholder dialogues facilitated by support organizations to help increase awareness and recognition that commitment and communication are essential to help smallholders benefit from value chains. IPs are usually made up of groups of individuals (who often represent organizations) with different backgrounds and interests who come together to diagnose problems, identify opportunities, and find ways to achieve their goals. The IPs can bring stakeholders to work together (at micro-community, meso-landscape and macro-national and regional levels) for sustainable value chains development (Walters, 2013; van Paassen et al., 2013).

6.3 Vertical and horizontal integration
Vertical and horizontal integrations can be used as tools to integrate landscape approaches into supply chain management. The vertical integration focuses on vertical relationships between buyers and suppliers, and the movement of goods or services from producers to consumers such as the flow of material resources, finance, knowledge and information between buyers and suppliers (Bolwig et al., 2010). For instance, out grower
Box 20.1

Case study: Vision for Change project between Mars Inc. and the World Agroforestry Centre (ICRAF)²

The Vision for Change (V4C) project financed by Mars Inc. and implemented by ICRAF aims to revitalize the cocoa sector in Côte d'Ivoire which has one of the lowest levels of productivity from around the globe. The project aims to achieve this by empowering farmers to produce cocoa on diversified farms with higher productivity, improved quality of beans and higher profitable returns in rural communities. Although the primary aim of the project is to create a sustainable supply of cocoa by addressing various bottlenecks in the cocoa supply chain (including the use of poor planting materials, non-efficient extension, etc.), it does so by taking other social and environmental concerns into consideration. For instance, the project has taken a landscape approach by promoting tree planting on cocoa farms as a means to enhance ecological and income diversification in the cocoa communities. Furthermore, the project has established Cocoa Village Centers (CVCs) where it trains rural entrepreneurs to produce quality tree germplasm and to provide extension information as well as farm rehabilitation services to farmers. The planting material produced comprises not only of cocoa, but also other native and exotic tree species which can be interplanted with cocoa to provide shade and create environmental benefits which is expected to increase resilience to climate change risks. Farmers have been trained to establish and manage their own nurseries which are providing additional/alternative sources of income. The project is also promoting the development of the value chains of other tree species such as Ricinodendron heudelotii (called akpi in local language) some timber species, mango, citrus and oil palm, which can be planted in and outside of cocoa farms thereby enhancing multi-product supply chain in the communities.

Figure 20.1 Vision for Change project. Photo credit: World Agroforestry Centre
schemes, also known as contract farming, can be used by many large agri-food firms to ensure sustainability in their supply chains (OECD, 2008). An outgrower scheme is a binding arrangement through which a firm ensures its supply of agricultural products by individuals or groups of farmers and aims to replace ad hoc trade arrangements with more coordinated commercial relationships (Felgenhauer & Wolter, 2008). They provide opportunities for firms to have more control over the production processes of smallholder farmers when the contract specifications include sustainability indicators in the production processes. For instance, the South Africa Brewery, SABmiller, initiated contracts with farmers in South Africa and India as a means to ensure implementation of quality standards (Felgenhauer & Wolter, 2008). The horizontal integration will occur when firms doing the same business within the supply chain merge to increase in size and enjoy economies of scale. An existing way of linking vertical and horizontal concerns in supply chain management has been through the examination of social, labour and environmental standards and certifications (Bolwig et al., 2010). Certification and product standards can also be used by agribusinesses while aiming for stable commodity sourcing and supply chain efficiencies. According to Ponte (2008), standards and certifications that protect workers, the environment and social conditions of production have ‘positive’ impact on the supposed beneficiaries in the supply chain. Such standards and certifications are used to ensure good working conditions, preventing the use of unethical production methods such as child labour, while making sure both livelihoods’ and environmental issues are taken into consideration.

7. Conclusion

Sustainability of supply chains is increasingly gaining momentum among agribusinesses although the overall level is still low. Adopting landscape approaches provides an opportunity for firms to introduce sustainable sourcing strategies into their operations by enabling them to achieve multiple and multifunctional objectives. This may include improving productivity whilst at the same time enhancing social and ethical standards (such as promoting quality education, providing proper health care services and other social amenities), and improving ecosystem services (such as protecting water bodies, protecting wildlife and conserving biodiversity) in the areas where they operate. The landscape approach in supply chain management goes beyond the individual production units and considers the overall development and wellbeing of the local producer communities.

From the social perspective, the project aims to invigorate the rural communities by improving the living standards of farmers in the cocoa communities, removing extreme forms of child labour and making cocoa production more attractive to younger farmers by increasing farmers’ incomes through diversification. The economic, environmental and social goals of the interventions are intended to demonstrate proof of application of the approach to catalyse replication in other locations throughout Côte d’Ivoire and West Africa. It is believed that in the future, sustainable intensification of production systems, taking into consideration social and environmental factors, will be the only means for accessing markets for cocoa. Farmers are expected to enjoy price premiums from certification bodies such as the Rainforest Alliance, UTZ and Fair Trade for using environmentally sustainable and socially acceptable production processes.
Endnotes
1 For detailed information about the UN Global Compact, refer to: https://www.unglobalcompact.org/
2 Based upon Vision for Change project proposal and personal interview with project manager, Dr. Christophe Kouame

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References


