

Full Length Research Paper

Interactions on sustainability requirements in the South African Table Grape industry: The position and challenges of actors on the supply side

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International supply chains have mainly been addressed in literature from a demand side perspective. This article addresses sustainable development issues from a supply side perspective. The paper is based on exploratory research done in the supply chain of Table Grapes in South Africa. The objective of this research is to get an understanding on the functionality of the chain as a whole by identifying the specific challenges with regards to sustainability as viewed by supply side participants in the chain. We address the need for research to understand sustainability from a business perspective within the supply chain as opposed to previous studies focussing on governance issues and external involvement to address this important issue. This necessitated a study into the processes, the actors involved and the various roles and activities of each actor. This exploratory study reports on workshops and in depth interviews conducted in four of the five-table grape producing regions in South Africa. The paper emphasises the weak position of growers at the first link of the supply chain, especially for smaller farms. Supply chain standards promoting sustainability appear not to cope with this weak position and add additional problems to isolated farmers in South Africa's developing agricultural sector.

Key words: Supply chain, sustainability, agriculture.

INTRODUCTION

International trade is strongly growing and is increasingly linked to the issue of sustainable development. This has resulted in businesses demanding corporate social responsibility and sustainable production practices from suppliers (Perl and Vorbach 2009). Such demands take the form of international business standards that require supplier compliance with sustainability criteria. It is essential that countries at the supply side of international value chains, often developing countries, commit to these business-to-business requirements to ensure economic growth and the creation of jobs. This relatively new phenomenon of promoting sustainable development

through market interaction, is quite remarkable (Perl and Vorbach 2009). Economic actors seem to take public interest in topics, such as environmental degradation and social injustice, traditionally dealt with by governments and civil society.

The system of supplying products to a given market is defined differently by various disciplines. This paper will interchangeably use the terms value chain (Dahlström and Ekins, 2007; Von Geibler et al., 2010) and supply chain (Seuring and Müller, 2008; Vermeulen and Seuring, 2009) as used by other authors in a sustainability context. The concept of sustainability has also been linked to

other definitions in this regard such as product chains (Boons and Wagner, 2009; Boons and Mendoza, 2010), commodity chains (Gereffi and Korzeniewicz, 1994; Kudi et al., 2007), and environmental life cycle analysis (Heijungs et al., 2010).

Simchi-Levi et al. (2004) state that in a typical supply chain, raw materials are procured and items are produced that are shipped to warehouses and then distributed to retailers and customers. Porter (1985, p. 319) states that 'every firm is nothing but a collection of activities that are performed to design, produce, market, deliver and support its product' and the value chain is 'the whole series of activities business firms undertake to convert the raw materials or input resources to the goods and services required by a customer'. The efficiency and effectiveness of supply chain performance is determined by the quality of goods and services as well as total cost to the company. This sounds like an easy, simplistic thing to do, but in practice supply chains often involve firms in various countries, with raw material inputs coming from developing countries.

The organisation of the sequence of activities and the control of the links in the chain is an important element of corporate strategy (Gereffi et al., 2005; Gereffi and Korzeniewicz, 1994). Understanding the dynamics in global supply chains and the role of business-to-business pressures, require insight into the interactions between the various economic actors (Lazzarini et al., 2001). These dynamics are complicated by pressures put on businesses by governments and non-governmental organisations from the different sides of the value chain. This has been labelled as a net chain analysis. Hardly any research has been done to analyse the nature of interactions on sustainable production requirements in global supply chains. Some initial studies show that the simplified image of economic actors engaged in a sequence of fair, open and free transactions is not a valid representation of reality (Ras et al., 2007). Therefore, this article aims to:

- (i) Conceptualise a global agricultural supply chain with its participants, activities, and relationships; and
- (ii) Define the challenges of farmers at the supply side.

As a case study, we examine the South African-European supply chain of table grapes. Firstly, we will illustrate the relevance of addressing sustainable development in global supply chains and explain our research approach. Secondly, we will give an overview of the organisation of the South African table grape supply chain. Thirdly, we will discuss the main problems experienced in the table grape supply chain. The article concludes with general discussions.

We address agricultural exports because agriculture is an important export market for South Africa, with established actors on both sides of the supply chain. Primary

agriculture accounts for about 3% of the gross domestic product and about 9% of formal employment (South Africa, 2008). The figure of seasonal employment is difficult to determine, but it is estimated at about 16%. If the strong linkage that exists in the economy is taken into consideration, the agricultural industry contributes to about 12% of GDP, which exponentially has a positive effect on employment. The table grape export chain was chosen as research topic. To secure revenue the industry relies predominantly on the export market and in particular the European market. This industry addresses the importance of sustainability and focuses on ongoing research to improve the positions of growers and other participants in the supply chain.

SUSTAINABLE DEVELOPMENT IN GLOBAL SUPPLY CHAINS

Sustainable development in global supply chains has received attention in recent years and case studies on the topic include the coffee chain (Bitzer et al., 2008), aquaculture (Islam, 2008), timber (Visseren-Hamakers and Glasbergen, 2007) and palm oil (Schouten and Glasbergen, 2011) to name but a few. These studies focussed on international trade between developed and developing countries, using case studies to identify sustainability issues and challenges.

The problems addressed by previous studies focus mainly on governance issues. This includes the addressing of social and environmental protection by developed countries' NGOs. It also includes an investigation into the imbalance of power and resources between consumer driven countries and production/exporting countries. Governance in terms of private regulation such as business initiatives, civil society initiatives, and public-private inter-sector partnerships is well described. However, an understanding of the entire export chain is lacking. Thus the potential for supply chain partnership to address these important issues may well be haltered. Therefore, research addressing all the functions and challenges of the supply chain fills a gap towards understanding how all the elements of sustainable practices from production to consumption can be interpreted and improved by all the parties of a specific supply chain.

A definition of the concept of sustainability was provided more than twenty years ago by the Brundtland Commission, stating that sustainability refers to 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987). This escalated in numerous academics, NGOs and scientists trying to turn a statement into a practical reality, contributing to various different definitions (Spangenberg et al., 2002). However, it is stated that 'the concept of sustainability is understood intuitively, but it remains difficult to express it in concrete,

operational terms' (Labuschagne et al., 2005 p. 376).

The discourse on sustainable development was for a long time mainly focused on preserving the environment. In the late 1990s, authors such as Elkington (1998) started to stress that Planet, People, Profit (PPP) and Corporate Social Responsibility (CSR) emerged as a strong business drive. Previous research expressed a clear deficit in supply chain management on social issues (Seuring and Muller, 2008). Especially in international product chains, the social dimension is very relevant. It addresses the issue of social responsibility for business, going beyond government rules. Traditionally, governments were expected to take up the sustainability challenge, however, in the World Business Council for Sustainable Development's 2006 Annual Review (WBCSD, 2007) it was clearly stated that '[today] the planet seems at least as unsustainable as in 1987...yet business has tried to do what most governments have not'. It thus seems that taking responsibility is not such a clear cut issue. Evidently, sustainable development rests not only on government intervention, but also on business contribution.

The issue of sustainable development has resulted in multiple reporting formats, for instance the Global Reporting Initiative (GRI, 2010), the World Business Council for Sustainable Development codes (WBCSD, 2007), as well as business standards such as Globalgap (Globalgap, 2010), SEDEX (SEDEX, 2010), Ethical Trade Initiative (ETI, 2010), Tesco's Nurture (Tesco, 2010) and Linking Environment and Waitrose's Farming (LEAF, 2010). These business standards are mainly voluntary and all of them go beyond regulation. Business standards are systems initiated by the demand side to engage the supply side in improved sustainability practices. These private standards are indirectly linked to supranational agreements by means of using formulations taken from multilateral government codes, such as the International Labour Organisation (ILO) and the Organisation for Economic Co-operation and Development (OECD) standards.

RESEARCH METHODOLOGY

This research forms part of a broader research project investigating sustainable development in global supply chains from a North-South supply chain perspective. During the initial desktop research it became evident from some previous research on the supply chain of the South African Table Grape industry which had been conducted. This left the researchers with a limited amount of knowledge about the phenomenon of to be researched. It was decided to do exploratory research as it is useful as a preliminary step in research that enables a more rigorous and conclusive study that will prevent the researchers to begin with an inadequate understanding of the nature of the phenomenon (Zikmund, 1997). The application of a focus group interview with the participants was initially used, the participants was later divided into smaller groups and this was done to provide synergy in an effort to obtain a wide

range of information, insights, and ideas about the phenomenon to be researched (Zikmund, 1997).

Firstly, a workshop with 32 participants representing members from farming communities, Non-governmental organisations (NGOs), local government, academics from African and European institutions and local business and agriculture, was held in order to explore general perceptions on agricultural supply chains. After presentations by experts on sustainable development and related topics on the first day of the workshop, the participants were divided into three focus groups, to generate open discussions on supply chain participants and sustainability challenges. Appointed moderators facilitated the discussions. Questions put to these participants were: What problems exist in supply chains? What needs to be done in order to solve existing problems? Who needs to do this? Who are the possible role players in the chains that have to be addressed? What should the contributions be from various scientific disciplines? The focus groups presented a general view on the research topic.

The second part of the study was a field study, involving in depth interviews of different supply chain participants over a three-month period. To ensure a good understanding of the chain from a supply perspective, five exporters, two NGOs active in the South African agricultural community, other stakeholders such as the sector organisation body, the South African Table Grape Industry (SATI), and table grape growers were interviewed.

The South African Table Grape Industry (SATI) provided a sample frame of table grape export growers. A convenience sample was used for interviews of 48 table grape growers (n=48) of the total population of 478 (N=478), covering all five table grape production regions in South Africa. Farm visits gave interviewers the opportunity to observe farming practices. Interviews with managers and farm workers verified data collected from owner managers of farms.

It was difficult to determine the total population of exporters, as exporters enter the market on an annual basis and leave after an undetermined time. The availability of growers was a limitation, as all five regions harvest on different times of the year and the study had to be concluded according to a specific time schedule. Mistrust and initial hostility and suspicion from actors and a consequent reluctance to initially participate in the study also had an impact on the time needed for individual interviews. To establish trust of actors participating is therefore essential to the success of a scientific research. Trust was built up slowly as the purpose of the study and the consequences for actors for their participation become clearer (Faugier and Sargeant, 1997). The participating actors were also reassured of the protection of the information they provided (Atkinson and Flint, 2001).

CONCEPTUALISING THE AGRICULTURAL SUPPLY CHAIN: FINDINGS FROM THE WORKSHOP

The workshop brought together representatives of different interest groups in the agricultural supply chains. In this way some perspective was gained on the issues of global supply chains from a supply perspective.

(i) The first group focussed on the importance of the social indicator of sustainability and consequently, community empowerment. The emphasis on a combined economic and social perspective in any form of product chain management was the main concern expressed by these participants.

(ii) The second group stated that the production (farming) phase should be divided into two distinct phases: pre-farming and farming phases. This reflects the specific South African political situation at this stage. Where in the pre-farming phase communities and farm workers have to deal with political issues such as land-redistribution, as well as entrance barriers such as lack of education and skills.

(iii) The third group took a more interdisciplinary approach and focused on the possible contributions of specialities such as marketing, finance, economics, development economics, logistics, system engineering, agriculture, policy and law, environmental studies, conservation and waste management.

Responses by all three groups showed perceived problem areas such as:

- (i) A general lack of knowledge of participants of supply chains;
- (ii) Lack of life skills (including a lack of education and general exposure to academic concepts);
- (iii) Poor living standards;
- (iv) Unemployment;
- (v) Poor infrastructure;
- (vi) Lack of local procurement and local economic development; and
- (vii) Health problems.

These are also problems identified by the various governments since 1994 and addressed by various government programmes. These workshops confirmed the perception that, according to the general South African individual, the emphasis should be on social issues. Solutions proposed by the participants were directed at:

- (i) Training and education interventions;
- (ii) Improved communication in supply chains;
- (iii) Advanced research and application of successful case studies; and
- (iv) Improved national policy and community empowerment programmes.

Figure 1 summarises different aspects addressed and participants' impressions of the supply chain. The importance and the added value of business and NGO involvement in academic research have been underlined in this workshop. In the first place, they play an important role in guiding research into a meaningful direction. Consequently, theories and solutions that are developed by the academics should be relevant to the development of sustainable practices. In the second place, strong partnerships between all society stakeholders will lead to better dissemination of knowledge, from academics to the ground-root level.

ACTORS, ACTIVITIES AND RELATIONSHIP IN THE TABLE GRAPE SUPPLY CHAIN: FINDINGS FROM INTERVIEWS WITH STAKEHOLDERS

In addition to the initial workshop, the field interviews produced more detailed problem descriptions. The South African table grape industry supplies the local and international market with a heterogeneous product. The total number of growers active in the industry at the time of fieldwork was 478, operating in five different geographical areas across South Africa. These areas are the Northern Region, Hex River Valley, Berg River Valley, Olifants River Valley and the Orange River Valley.

Table grape growing is an investment intensive industry. The functioning of such an agricultural chain therefore is different to other product chains. Growers carry a large risks factor as other actors in the supply chain do not take ownership of the produce until it is sold to the retailer. Establishment costs range from R180 000 to R200 000 per ha according to 2010 data, depending on construction of training poles and irrigation infrastructure (Interview with P. Bowens, SATI, October 2010). Harvesting takes place only after 3 years. Replacing grapes with another product would be a very expensive exercise and thus is hardly an option.

Each region's grape cultivar is ready for the market at different times of the year. The Northern region is first in the market followed by the Orange River. Being first in the market with a certain cultivar provides these growers with an advantage regarding price. During December the market is not yet flooded. This benefits the South African market as a whole, as a longer shelf lifetime is secured on shelves at European retailers.

Prices are usually much higher in the beginning of the season. As more grapes move into the market, a surplus occurs and the price tends to decrease. Many growers supply a certain percentage of their produce to the local markets, which do not have the strict regulations of the European markets. The perception is that the local market is too small to consume all the grapes produced in South Africa. Furthermore, exports are essential to generate income. To enter the international market growers have to comply with different business standards. Business standards are sets of criteria that growers have to comply with in order to satisfy European retailers of baseline sustainability practices. Globalgap is a generic standard, while different European retailers also enforce their own systems, such as Tesco's Nurture, Marks and Spencer's Field-to-Fork and Waitrose's LEAF. Business standards are communicated from the demand side to the supply side of the chain. Compliance with business standards is a cost to the grower, as the production unit has to be audited by each compliance system to determine if the minimum requirements are met. The total costs to the grower include that of construct physical structures and systems, as well as paying auditing fees.

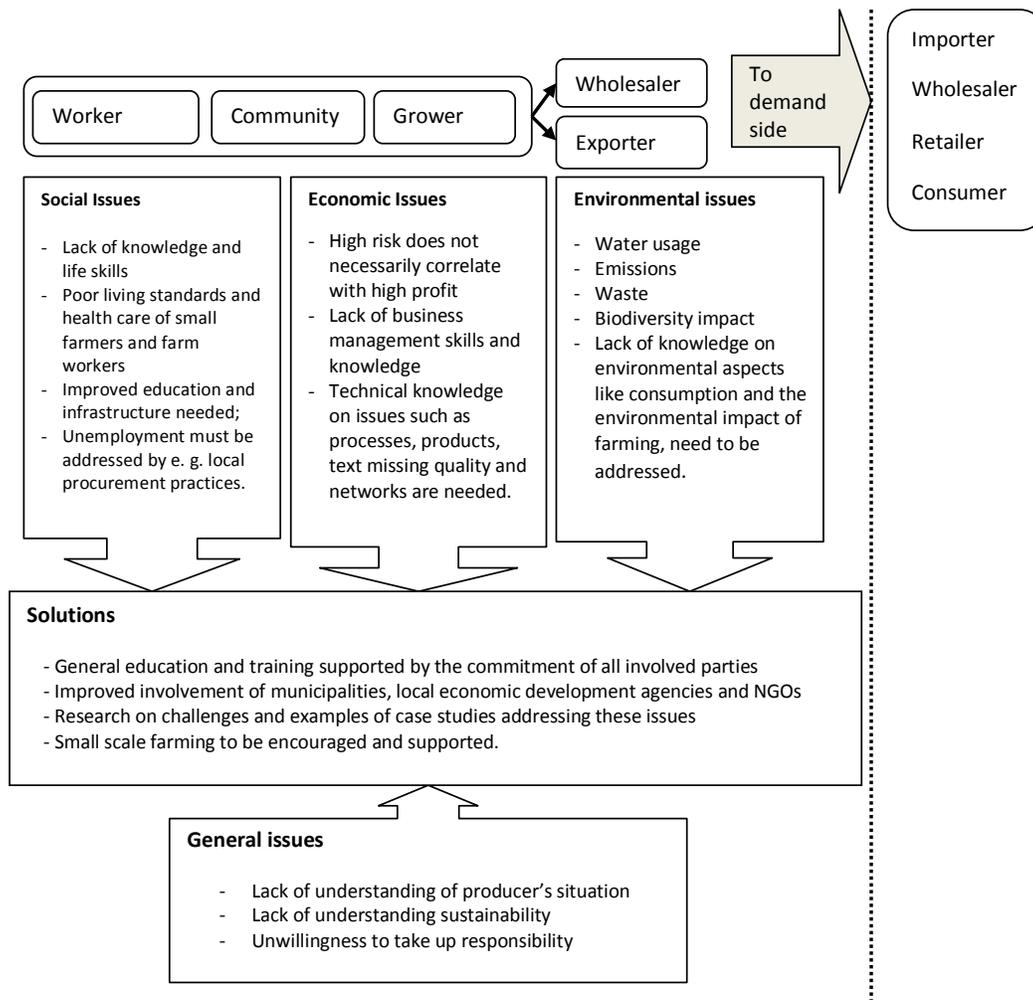


Figure 1. An agricultural supply chain with its challenges and solutions as depicted by workshop participants.

Figure 2 provides the sequence of activities in the supply chain. The first line (activities 1 to 6) indicates activities that mostly take place on the farm itself; the second line shows activities from farm to harbour (activities 7 to 8); the third line (activities 9 to 12) refers to activities when produce leaves the South African border.

The last time the grower has any control over the produce sold is when the exporter loads it at the storage facility in the distribution stage (activity 7), although the grower still retains ownership and risk. Should any of the produce not be sold or temperatures not be kept, or produce decay, the grower bears the cost. Thus, from the distribution stage the grower has to trust the other actors in the supply chain to take responsible care of the produce. This includes the payment of a profitable price after six to twelve weeks at the mercy of an agent or broker.

It is important to mention that very often the produce is

not sold by the chain retailers (because of decay or lack of consumer demand). The costs of the products not sold are effectively moved back in the supply chain to the grower as he will not be compensated for produce not sold. Several of the interviewed farmers explained that this loss is carried by the grower, who actually has no remedy to claim any losses from any other chain partner. European retailers can dictate the conditions due to their strong position in the market.

In Figure 3 the various actors are linked to the twelve activities shown in Figure 2. What we see here, is that actors have a choice to take up various combinations of activities. Larger farms in many instances have more resources, and such growers have the capacity to partake in more than one activity. For example, established farmers do not only take responsibility for direct farming but also for the export of their own produce. This means they earn larger profits, as profits do not have to be

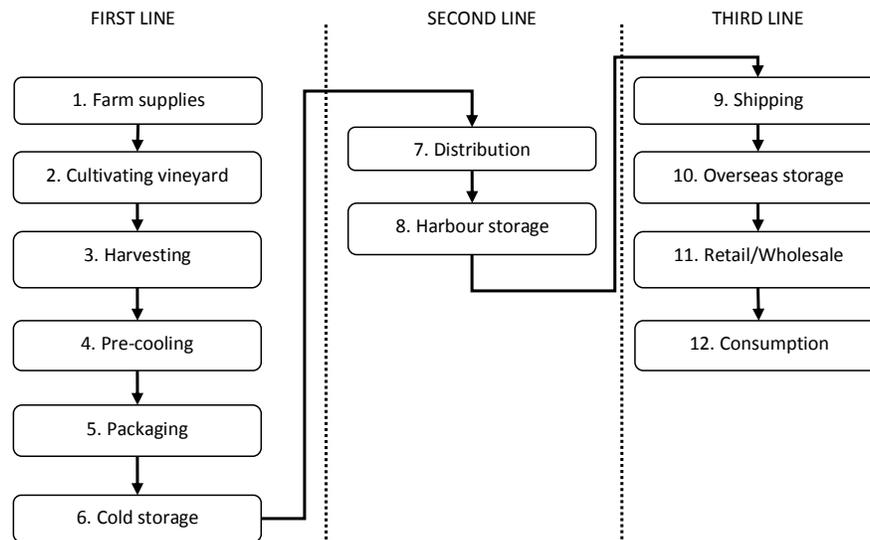


Figure 2. Activities in the supply chain.

shared. Small and medium sized farmers also seem to work together by sharing pack houses and cold storage facilities in some areas. However, this is limited to a small number of farmers.

Farm workers and surrounding communities are impacted by activities 1 to 7 in various forms. Firstly, by providing employment and ensuring economic activity. Secondly, social upliftment practices by many producers include the provision of benefits such as schools and clinics to the surrounding communities and in some cases even sport facilities. This is done without government intervention in the form of regulations.

Produce flows from the supply side to the demand side. Information is exchanged from activity 1 to 12 and back through the chain. Information flow also includes confirmation of sustainability requirements for retailers at the demand side of the chain. This relates, in most cases, to certification schemes and requirements. The South African government provides regulation in terms of social, health, environmental and export regulations (SA online, 2012).

CHALLENGES EXPERIENCED BY ACTORS IN THE CHAIN

The main problems identified by the interviews with table grape producers, related to all three dimensions of sustainability, are shown in Figure 4. An example is strict labour legislation that was identified as a challenge across two dimensions of sustainability. The message we received from the smaller farmers was that one of their main problems is the strict labour and social legislation. However, this was not found to be the case with the

larger farmers. One comment from a larger farm owner was that the smaller growers do not have the knowledge of labour legislation or the necessary human resources to address this issue. The smaller grower cannot afford the services of a competent consultant. They either battle along on their own, or settle for a consultant who could create even bigger problems, such as worker discontent or false expectations that could lead to labour conflict.

A common denominator seems to be the farmers' mistrust towards government. This mistrust relates to issues in the area of traditional *in natura* payment structures, the promotion of B-BBEE, as well as land reform and redistribution. At the same time other external actors are seen as invaders. Unions are often perceived as being equal to the state or even being the government's representatives. Small owners feel intimidated by these issues and often try to manage this by showing aggression. A consequence is that mistrust develops between grower and worker. The attitude is often that the grower will not meet more than the required terms.

The NGOs active in the field are difficult to identify. Even NGOs interviewed could not identify other NGOs involved on farms. One comment made by an NGO, was that in reality, NGOs in South Africa are different from NGOs in western or developed countries, as they are not recognised by other role players. This creates a problem that the grower evidently has to take sole responsibility for social matters on his farm, which is specifically difficult for small growers. The image of NGOs is also not perceived as positive. NGOs are perceived as another arm of government or a negative intervention on the smooth and successful running of the farm. NGOs are seen as a threat, rather than a partner to solve social and

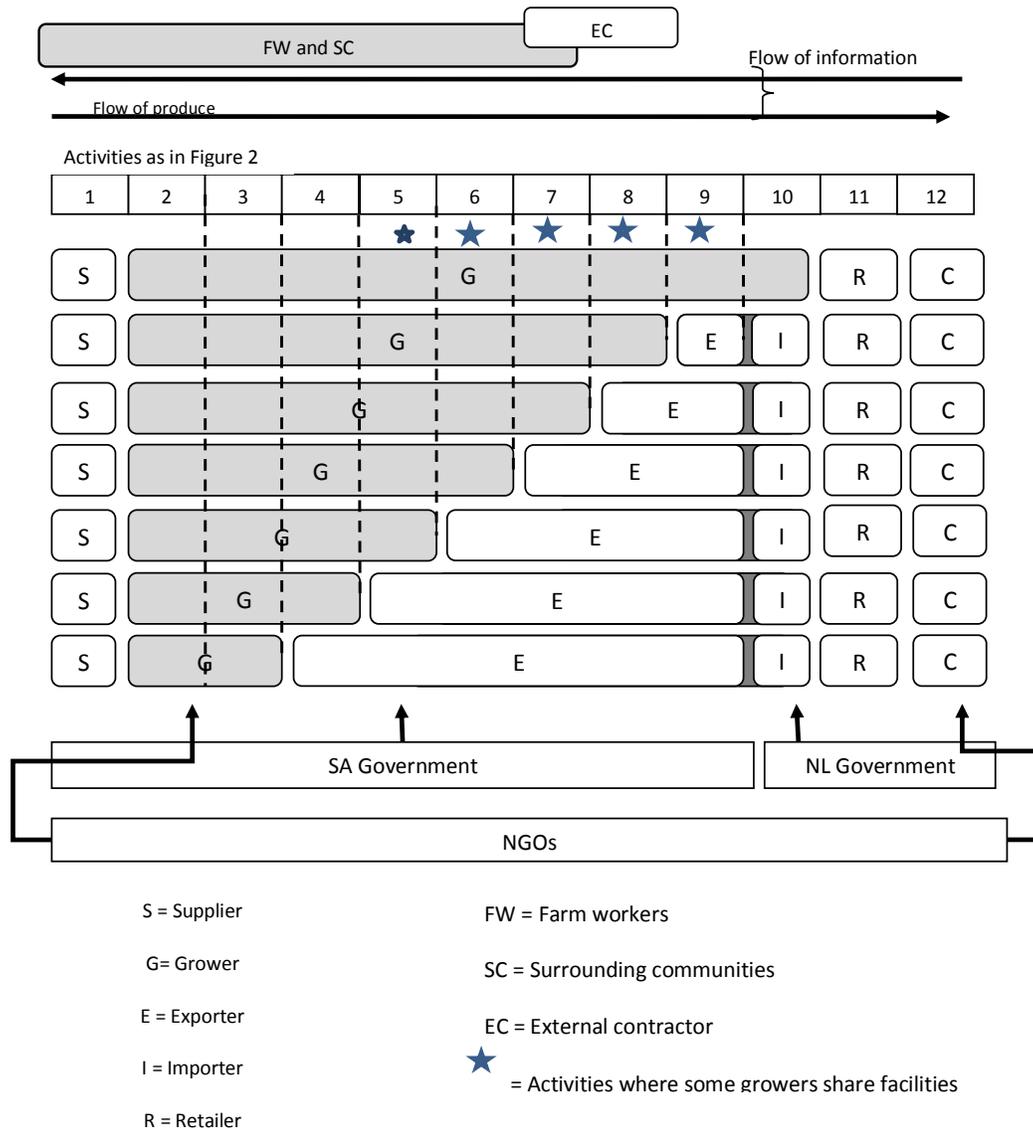


Figure 3. Diverse configurations of actors in the supply chain linked to activities.

environmental issues. This perception extends to the idea that government is an autocratic entity that uses power to threaten land ownership and make survival as difficult as possible.

Another challenge relates to the lack of cooperation between all stakeholders of the supply chain. An individualist tendency was observed, whereby the growers share a very real mistrust of each other. The possibility of working together, sharing costs or responsibilities, for example cooperatives to solve their problems, was definitively not perceived as an option. The only form of cooperation is the sharing of cooling rooms. Lack of initiative to work together could also be attributed to the absence of local leadership to harness strengths and

motivate farmers to collaborate, and move in one direction. Exporters are not trusted, importers are not known. A lack of transparency in the activities of the chain adds to the problem of uncertainty and insecurity for growers. From fieldwork interviews, a tendency of small farmers to make use of unknown fly-by-night exporters was also observed. This has led in many cases to small farmers not being paid; as such exporters disappear after selling the produce. This is mostly overcome by the fact that most growers make use of more than one exporter. It however contributes to the negative attitude towards exporters.

These issues instil a general negative attitude towards exporters. Due to low inflation rates in Europe, the prices

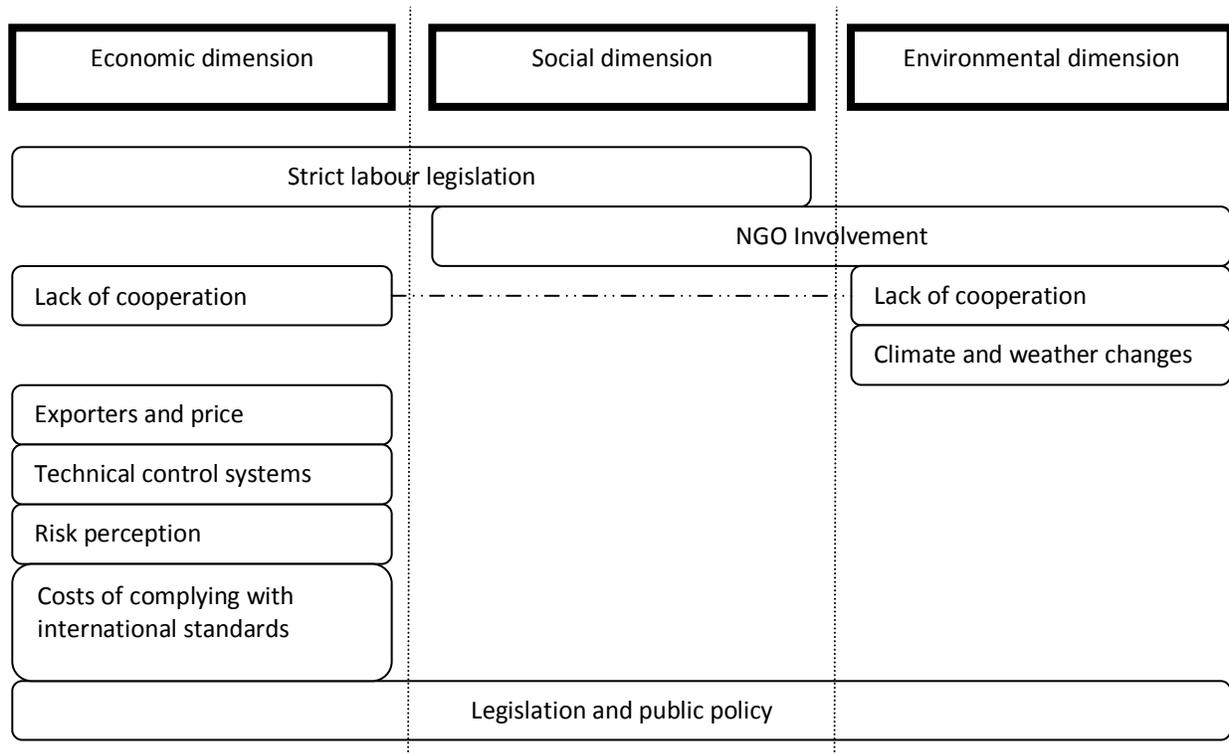


Figure 4. Challenges experienced by South African actors.

do not really differ from year to year. However, this is not the case in South Africa. South Africa's high inflation rate implies continuous rising costs. The fluctuation of the exchange rate means constant exposure to the risk of receiving lower prices in Rand. Profits are uncertain and planning is difficult. Input costs from growers are increasing at 17% per year (SATI, 2011), while more competitors enter the market. The importers in Europe want to pay the same price for South African quality grapes as for Brazilian or Chilean grapes of poorer quality. Exporters in South Africa over procure to ensure that they do not have shortages at the cost of the farmer. This leads to prices being forced down. In some markets such as Russia, grapes are sold at a lower price and exporters cross-subsidise this lower price in these markets by selling in other markets at a higher price. The focus of such exporters is thus volume irrespective of price.

Many exporters also provide additional services such as cooling and storage facilities to growers. This is an important source of income for exporters, but expenditure to growers. This again means that price can become only a secondary concern to exporters. Growers tend to take the best price offered, and no loyalty develops towards a specific exporter. Growers are also inclined to use more than one exporter, as they perceive this as distribution of risk. Hardly any partnerships exist between growers and

exporters.

From the discussion so far, it is observed that growers take most of the risk and responsibility for the produce without receiving any guarantee of payment or price. Growers were asked why they do not shorten their supply chain by exporting their produce themselves, as a solution for reducing risk.

The following are the reasons for not shortening the chain:

1. The production process is too diverse, and many growers farm with various products;
2. They are too small to take the risk of other activities on board;
3. They will have to employ a marketing expert at additional cost;
4. They have no time to investigate markets; and
5. They have a lack of knowledge of exporting policies and procedures.

Reasons for not participating in group export schemes were:

1. Risk of the export division growing too fast and becoming a business on its own;
2. Risk of moving away from the original objectives;
3. Administrative problems; and

4. Profit sharing conflict.

Another risk growers need to deal with relates to unpredictable climate and weather changes. Growers have no control over these factors leading to surpluses or shortages. This in turn impacts on shelf space and prices in export markets. Growers report increasing irregular weather patterns (drought or abundant rain fall) in recent years, without linking this to climate change due to human activity.

Bringing perishable produce to distant foreign markets requires specific technical controls. This assures good quality control from the beginning to the end of the supply chain. Shipping sometimes leads to several fruits being transported together, which has the effect that average temperatures are set that is not ideal for grapes. Thus growers have no control over their produce once it leaves the farm. If the products are not sold and the shelf life has expired, in practice the responsibility trickles down the supply chain. Many growers claim not to be paid, while they are not in the position to control the quality in later links of the supply chain.

As already discussed, the costs of complying with international standards seem to be a common concern for all growers. Not only are growers responsible for capital expenditure to comply with business standards, but they also carry the cost of audits. One of the main complaints from growers was that the retailers on the demand side determine business standards without much consultation from the supply side. The industry body and exporters also voiced this concern. From a more local perspective, legislation and public policy (water, settlement, health, equity and empowerment) also creates tension. Frustration with some aspects of legislation was rife amongst growers. Legal topics like water rights were a common concern. Growers perceive a lack of an enabling environment created by government.

Conclusion

This exploratory study investigates the practices of the supply side in the global supply chain of table grapes, produced in South Africa and consumed in Europe. It is a study of a sequence of independent groups of economic actors. The main focus is on the interactions between growers and their exporting business partners in the first link and the European importers and retailers as the final link in the supply chain.

The main findings of this research are that there is a difference in the approaches and thinking of large and small producers in the chain. We can describe the position of (mainly smaller) farmers as fairly isolated in a competitive market environment, dependent on larger actors, who are able to aggressively control the conditions of supply. These large actors reduce their own risks

and increasingly demand additional assurances and requirements linked to sustainable development. Meanwhile these (smaller) growers are embedded in a societal context with increasing social tensions, such as land grab, high crime and an illiterate work force.

The three dimensions of sustainability are interrelated. While third parties experience 'social' issues as the main element of concern, farmers experience economic sustainability as their main challenge. If growers do not make a good profit, workers do not get wage increases and jobs are lost. Producers get far better prices on the international markets. However, the revenues are far lower than the prices of these products on the European retail shelves. A developing country's producers are supplying high quality grapes at relatively low prices and are simultaneously forced to bear all the risks.

The table grape grower in South Africa provides the market with a product that has a short shelf life. This creates tensions at the side of the grower. It is clear that strategies must be put in place to address the identified problems. These producers are not involved in defining what sustainability actually consists. Neither have they been able to pose comparable questions whether the demand side also contributes to sustainability.

Solutions suggested to the challenges for growers could be to attempt to shorten their supply chain and thereby gaining more control. Another solution to the effectiveness of providing sustainable products to foreign markets is improved communication and information flow in the chain from start to finish. This is identified as a topic that needs active research. Growers could investigate local demand and market mechanisms and agents/brokers should have a proven track record. It is important for producers to emphasise the need for research at the demand side in Europe and the UK to identify exact expectations.

It also is important to discuss the concept of shared responsibilities with all supply chain stakeholders concerning activities and social and environmental impacts in the total supply chain. Ultimately innovative market mechanisms should be prepared to ensure shared responsibility for enhanced sustainability to the supply chain as a whole.

In order to enable such improvements, further research is needed detailing the frequencies of such unequally distributed responsibilities. The determination of required capabilities of supply chain stakeholders for the improvement of economic, environmental and social performance needs to be answered. The presence of these capabilities should be measured in practice. Promoting more sustainable international trade does require detailed knowledge about the impact of sustainable supply chain governance approaches in the field of developing countries. The collaborative translation of such knowledge should be put into fair and successful modes of supply chain governance.

Future research that is recommended is on how the supply chain can be shortened and how can smaller producers form a co operative to gain power in the supply chain and improve their position.

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