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Full Length Research Paper

The Role of Collective Action in Overcoming the Challenges of European Food Safety Standards: The Case of Kenya's French Bean and Nile Perch Industries

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Abstract

The European Union (EU) is the leading importer of developing-country high value exports. EU countries have in the last two decades developed stringent food safety standards and imposed them on developing-country fresh vegetable and fish suppliers. These standards require investment in costly physical facilities and human skills. Developing-country suppliers often lack human and financial capital needed to invest in such facilities. Consequently, there have been concerns that these standards will exclude poor developing country exporters. This paper examines the role collective action has played in facilitating compliance with International Food Safety Standards (IFSS) by Kenyan suppliers of French beans and Nile perch to Europe. It finds that IFSS caused a drop in exports French beans and Nile perch. However, suppliers of both commodities used collective action to resolve idiosyncratic market failure, exploit economies of scale, and reduce buyers' transaction costs hence increase exports. The findings imply that developing countries can overcome the challenges of IFSS by mobilizing small suppliers into groups that then help small suppliers to meet the standards through joint investments in costly assets.

Key words: Food safety standards, compliance, smallscale suppliers, collective action, Kenya

Introduction

The European Union (EU) remains the primary destination of high value commodities (HVC) from Africa (World Bank, 2005). Following the food safety scandals of the 1980s and 1990s, EU governments enacted stringent food safety regulations relating to pesticide residue limits and hygiene in response to EU. Major EU retailers have responded to these regulations by adopting private protocols that encompass pesticide residue limits, packer hygiene and traceability. They enforce these protocols by subjecting their suppliers to close monitoring. Some require their suppliers to demonstrate compliance through third party certification (Hatanaka, et al., 2005).

Most HVC from developing countries are sourced from smallscale suppliers. Such suppliers often have poor or no access to capital and face missing markets credit (Key and Runsten, 1999). Yet in order to comply with these International Food Safety Standards (IFSS), suppliers need to change their production, storage and packing practices. Such changes include the establishment of quality management and traceability systems, which on the other hand require upgrading of old facilities and/or construction of new ones. The implied cost of meeting IFSS and the inherent credit market failure has implications for continued participation of small suppliers in the HVC (Maertens, 2006). Such suppliers are likely to exit the high value export industry after failing to make the investments needed to meet the standards. Such exit can result in drop in volume of exports in industries dominated by smallscale suppliers such as those in Africa. However, emerging empirical evidence suggests that some smallscale suppliers in developing countries have overcome the challenges of IFSS and even increased their production of HVC and hence exports (Maertens, 2006, Author 2005b).

In theory, small suppliers can overcome idiosyncratic capital market failure through formation of horizontal alliances that facilitate membersô access to capital (Poulton et al, 2006; Rehber, 1998). This paper examines how Kenya overcame the challenges of IFSS, maintained the participation of smallscale suppliers in high value markets, and even increased exports of two key HVC. It specifically examines the role collective action played in keeping smallscale HVC suppliers in export business.

The paper focuses on French beans and Nile perch exported to the EU. Kenya is one of the leading suppliers of Nile perch and French beans to EU (Jaffee, 2003). These industries predated the standards. Prior to standards, market requirements were limited to with physical attributes and consistency of supply. Enforcement of IFSS introduced stringent pesticide and hygiene standards. Despite facing these stringent standards, Kenya has increased exports of Nile perch and French beans. The paper finds that IFSS had initial adverse effects on exports on the two key high value commodities from Kenya. However, the standards evoked horizontal alliances through collective action that facilitated IFSS compliance and reversed the downward trend on exports.

Conceptual Framework

The literature identifies three kinds of attributes the consumer use to assess a commodity namely, physical, experience and credence (Codron, et al., 2003). Physical attributes (e.g, color, size, spotlessness, and shape) are easily assessed through visual inspection. Experience attributes (e.g., taste, succulence and tenderness) can only be assessed upon consumption of the commodity. Credence attributes (e.g., pesticide residue and pathogen contamination) cannot be assessed even upon consumption and require laboratory tests.

The IFSS requirements are essentially credence attributes. They require costly and time-consuming scientific tests that can cause delays. Such delays entail additional costs where the commodity is perishable since waiting for the results of laboratory tests can cause losses through spoilage. Hence the change in the way quality of HVC is defined has increased the costs of exchange. The costs of ascertaining quality of a produce has been referred to as transaction costs (North, 1990).

Transaction costs also tend to be high where i) one exchange partner (e.g., seller) has private information about the product that s/he can use for personal gain, ii) transaction requires investment in specific assets, iii) there is considerable uncertainty and iv) transactions are frequent (Williamson, 1985). Quality measurement problem is a major contributor to high transaction costs of exchange (North, 1990). High transaction costs can lead to market failure and limit exchange between trading partners (Kranton, 1996; Gabre-Madhin, 2001).

For the buyer of HVC, transaction costs can arise from, among others, the costs of: i) searching and identifying suppliers that are committed to meeting market requirements, ii) monitoring and/or supervising suppliers to ensure compliance with market requirements, and iii) adapting to environmental and market changes relating to standards. Geographical dispersion of suppliers and small volumes traded exacerbate buyersô transaction costs making small suppliers less attractive to trade with. For the supplier of HVC, meeting buyer requirements requires investing in physical, human, and other assets that are specific to transactions involved. The need to invest in such specific assets increases supplierôs transaction costs because of likelihood of hold-up.

One of the ways exchange partners can overcome IFSS-related high transaction costs is through collective action. Collective action is broadly defined as an action taken by a group of people/actors in pursuit of membersô perceived shared interest (Marshall, 1998). The most common form of collective action is supplier organization (e.g., supplier self help groups, community based organizations and/or supplier cooperatives). Supplier organizations (SOs) provide a number of benefits to members: i) give the members collective voice hence bargaining power (Rehber, 1998), ii) help members coordinate their marketing activities, and iiii) link members to capital sources (Key and Runsten, 1999). Linking small suppliers to capital sources is important in most developing countries because such farmers tend to have poor access to debt or venture capital due to market failure.

Supplier organizations can also reduce buyersô *ex ante* transaction costs by eliminating/reducing the costs of searching and screening of potential trading partners and negotiating contracts with individual exchange partners. They can also reduce the buyersô *ex post* transactions costs by reducing monitoring and contract mal-adaptation costs.

Data

This paper is based on information gathered from multiple sources through personal interviews. The French bean information was collected through interviews with smallscale growers, farmer groups, buyers, buyersô technical assistants pesticide dealers, government extension; EUREPGAP certifiers; Horticultural Crop Development Authority; Fresh Produce Exporters Association of Kenya. French beans growers interviewed supplied European retail markets that demand compliance with IFSS. Information for Nile perch was collected from similar sources in the Nile perch export industry (e.g., fisherfolk, fisherfolk associations, holding shed operators, processors, fish transporters, government officials, and researchers). The French bean information collected between August 2003 and June

2004 and in February 2006 while Nile perch information was gathered in September 2006 and March 2007. These interviews were supplemented with secondary information on both industries (e.g., reports, journals, local daily and international newspapers, and industry newsletters).

Compliance with IFSS in Kenyan French bean and Nile perch industries

Small-scale farmers and fisherfolk dominate the French bean and Nile perch industries in Kenya. More than 70% of the French beans are grow by smallscale farmers in Kenya while an estimated 90% of Nile perch harvesters are small operators (Kimenye, 1993; Jaffee and Morton, 1995; Mitullah, 1998). In both industries, the most operated individually prior to IFSS.

Arrival and impact of IFSS on French bean exports

Until mid to late 1990s, French bean quality was based on physical attributes namely, size, shape, and spotlessness. Farmers used more pesticides (and sometimes toxic) pesticides than needed to meet these aesthetic attributes. The pesticides were improperly used, handled and stored thus posing health risks to farm families and workers. Grading of beans was done on the ground of poorly constructed grading sheds thus increasing the likelihood of contamination with pathogens (Jaffee and Morton, 1995). Beans were mainly traded via spot market transactions hence hard to trace back to source. Nor were exporters concerned about pathogen contamination from poor handling and hygiene conditions in the packing and holding areas.

The arrival of IFSS brought considerable changes to pre- and post-harvest handling of French beans. First, buyers supplying EU supermarkets shifted from spot market purchases to formal contracts. Second, farmers had to adopt a new and costly pre- and post-harvest including changing their usage, storage and disposal of pesticides and the way beans are handled and held prior to collection by buyers. Third, farmers needed to establish traceability system. The pesticide requirements entailed changing the type and dosage of pesticides, constructing a pesticide storage unit and using protective clothing. The hygiene standards required farmers to construct grading facilities with cement floor and washable tables, toilet, and charcoal coolers to prevent contamination of produce with pathogens and dirt. Lastly, the traceability system entailed keeping records of pesticide and produce stock movements by produce and plot.

The IFSS requirements posed a major challenge to smallscale French bean farmers and their buyers. For most smallscale farmers, the cost of investing in the facilities needed to comply with pesticide and hygiene standards was unaffordable. Also, majority of the farmers did not have the skills needed to meeting the traceability standards. Consequently, some farmers abandoned French bean production while others cut back production. At the same time buyers integrated backwards after finding smallscale sourcing unattractive.

Exporters integrated backwards mainly due to the high costs of enforcing IFSS among smallscale farmers. To enforce IFSS-compliance exporters needed to closely monitor smallscale growers. However, geographical dispersion of smallscale growers and their small holdings drove up transaction costs of monitoring and enforcing IFSS among such growers. For instance, in order to control pesticide usage by farmers and hygiene in the packing facility, the exporters needed to employ a team of supervisors and field technical assistants. The expenses associated with employing these technical assistants (in form of salaries and transport) and their supervision increased with the number of farmers supervised and the distances covered and in some cases constituted the largest share of the procurement costs.

The exit by some smallscale farmers from the French bean industry and the initial shift away from smallscale growers by large exporters led to a drop in the number of producers and consequently export volumes as shown in Figure 1. French bean exports fell between 1996 and 1998 coinciding with the arrival of implementation of IFSS in Kenya. Price did not play a role in this decline in exports because price paid by most exporters was constant at about Kshs 45/kg in the 1990s (Abila, 2003). The IFSS therefore largely precipitated the drop in French bean exports.

However French bean exports recovered but declined again in 2002/2003. This second wave of decline was caused by confusion in Kenyaôs horticulture industry over EUREPGAP certification (Steve New, personal communication). Some farmers abandoned production after being misinformed that they needed EUREPGAP certification to grow beans for export to EU. However, exports increased again after the confusion over EUREPGAP certification cleared.

Compliance with IFSS in French bean industry through collective action

How did the smallscale farmers overcome the challenges of IFSS compliance? Smallscale growers that continued producing for EU supermarkets had to adopt a new strategy. They formed horizontal alliances in form of farmer organizations or revived old ones. The most common type of such organizations was the farmer self-help groups. The old self-help groups were essentially marketing associations formed to organize the sale of French beans for members. However, the revived groups took on the role of helping farmers meet the IFSS-related demands of their buyers. Table 1 presents farmersô

Table 1. Rank of three primary reasons for joining self-help group (%)

	1st Rank	2nd Rank	3rd Rank
Market Access	61	19	7
Access to quality seed	13	24	30
Higher prices	13	21	20
Stable prices	4	17	9
Payment assurance	4	10	18
Access to new pesticides	2	4	5
Access to cash credit	2	1	5
Access to information	1	4	5
Total	100	100	100

Source: Author's survey, 2004; N=175

Table 2. Food safety restrictions on Kenyan Nile perch exports

Year of ban	Event/Restriction
1996	i) Import ban by Spain and Italy ii) Mandatory border testing for *Salmonella*
1997	i) Import ban by the EC ii) Mandatory testing for *Vibro Cholerae & Vibro parahaemoliticus*
1999	Import ban by EC over pesticide residues

Source: Adapted from Henson and Mitullah, 2004

ranking of the reasons why they joined the new and old self-help groups. Clearly, access to export market was the major reason why farmers joined such groups. However, to access the export markets, these farmers had to meet the IFSS.

The self-help groups helped members meet the IFSS by investing on the costly facilities that individual members could not afford namely, grading shed, potable water, toilets, and charcoal coolers. The groups also employed clerks that enforced personal hygiene within and around the grading shed and field technical assistants (FTAs) that performed pest scouting for members and advised on the type and dosage of pesticide remedies to be used. Some groups operated pesticide stores from which members obtain all the pesticides they used on French beans. The stores dispensed pesticides as needed and controlled the types, quantity and dosage of pesticides used by members. The stores alsokept records pesticide dispensed to individual farmers as part of the traceability system. The self-help groups therefore enabled smallscale farmers comply with the EU hygiene standards and remain in business. The exporters also chose to work with farmers in groups because it provided needed volumes of safe produce at lower transaction costs. The groups especially made it cheaper for exporters to monitor pesticide usage and hygiene practices. Indeed exporters used the same group approach to reduce the costs of certifying smallscale farmers. The assured access to export market enabled farmers to increase their volumes (Author, 2005b). Thus although IFSS posed a major challenge to smallscale farmers, they overcame the challenge and even increased their exports by working together in groups. Hence as Figure 1 indicates, the fall in French bean exports in 1998 and then 2002/03 was followed by a strong recovery, largely facilitated by collective action. Murimi (2004) for instance indicate that there were close to 1400 self-help groups involved in horticulture in 2004.

IFSS and the Nile perch industry

As in French beans food safety issues were not in the radar of importers of Kenyan Nile perch until mid 1990s. Consequently the level of hygiene in most landing beaches and holding facilities was quite low. Such facilities lacked of working benches, potable water, toilet, and cold storage facilities, and walls.

Arrival and impact of IFSS on Nile perch exports

The first signs of a stormy future for the perch industry came in mid 1990s with a warning from EC about hygiene conditions in the landing beaches and holding facilities (). The EC specified changes that the fisherfolk needed to make to meet EU standards. As French beans the changes included improvement of hygiene conditions in the landing and holding facilities and establishment of a system of traceback. To be compliant, these facilities

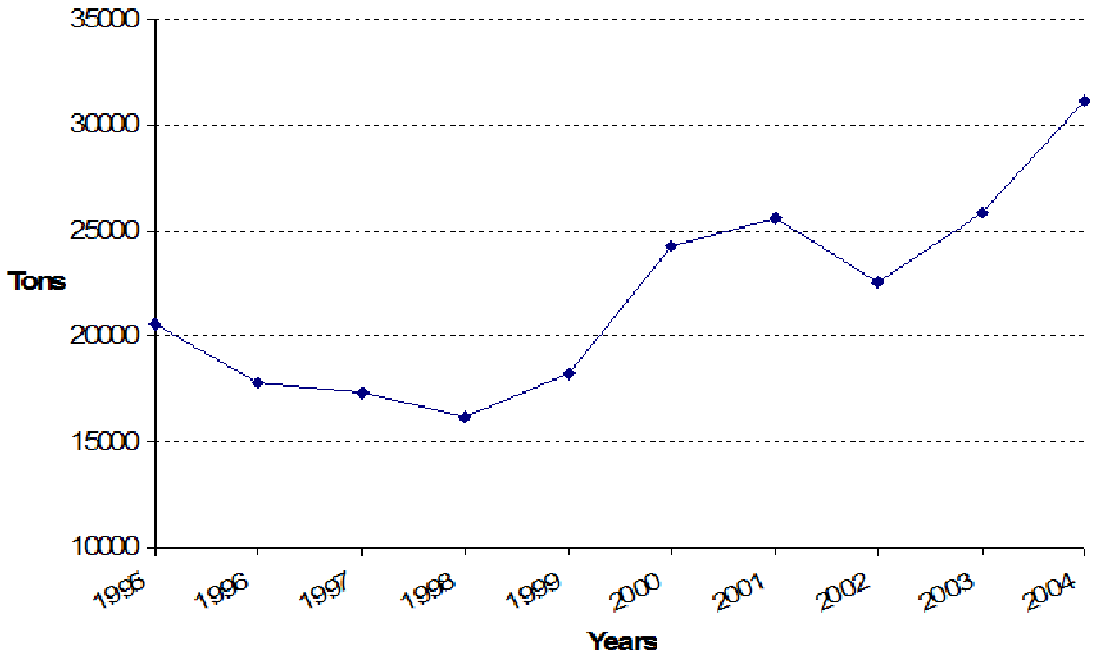

Figure 1.Trends in Exports of Kenyan French beans (Tons), 1995-2004.

needed to have potable water, washable tables, cooling facilities, toilets and perimeter fence. The holding facility is required to have a tin roof, walls, and cement floor. For majority of smallscale fisherfolk, making these investments was too costly. At the same time, there was no pressure on the fisherfolk from the buyers (exporters) to implement the standards. Hence, majority of the fisherfolk continued operating without the standards.

The poor state of hygiene at both landing sites and holding facilities resulted in a major food safety failure in 1996 when *Salmonella* was detected in Kenyan Nile perch by Spain. Spain and Italy responded by immediately banning Nile perch imports from Kenya (Mitullah, 1998). The ban by Spain and Italy on Kenyan perch prompted the EC to suspend imports of Nile perch from Kenya and at the same time introduced mandatory testing for *Salmonella* on all perch imports from Kenya.

This first ban was followed by two other bans, one in 1997 and the other in 1999. In the 1997 case, the ban was attributed to the outbreak of cholera in east Africa following the *El Nino* rains. The EC again imposed mandatory testing of Kenyan Nile perch for *Vibrio Cholarae* and *Vibrio parahaemoliticus* and reactivated mandatory testing for *Salmonella*. The 1997 ban remained in force until January 1998. The1999 ban was, on the other hand, caused by detection of pesticides residues on Nile perch from Uganda. Since some of the Ugandan fish were landed in Kenya, the EC banned imports of Kenyan perch and imposed mandatory testing for pesticide residues and monitoring of other environmental contaminants. The 1999 ban was also extended to Uganda and Tanzania and stayed in forced until the December 2000.

After 2000, interruptions in exports of Kenyan Nile perch have been minimal. However the EC in 2006 again raised strong concerns over the deterioration and/or lack of improvements in Nile perch landing beaches and laboratory facilities (*Daily Nation,* 2006*)*. However, the Commission did not take any action on Kenya even after sending unusually large team of inspectors.

As expected, the mid 1990 bans and restrictions in imports by the EU immediately resulted in a reduction in exports of Nile perch. Figure 2 captures the changes in exports before, during and after the bans. It shows that the series of bans led to a drop in Nile perch exports, with the downward pressure on export of 1996 and 1997 bans reinforcing each other. However, just as in the case of French beans, the decline in exports was not sustained over a long period. Indeed, the 1999 ban seems to have had little effect on perch exports. We explore the reasons for this resilience in the Kenyan Nile perch industry below.

Smallscale fisherfolk use collective action to comply with IFSS

Following the series of restrictions on exports to EU, the smallscale fisherfolk undertook measures aimed at complying with IFSS standards. The strategy they used to comply with the standards was largely similar to those used by smallscale growers in the French bean industry. They too formed new self-help groups and, in some

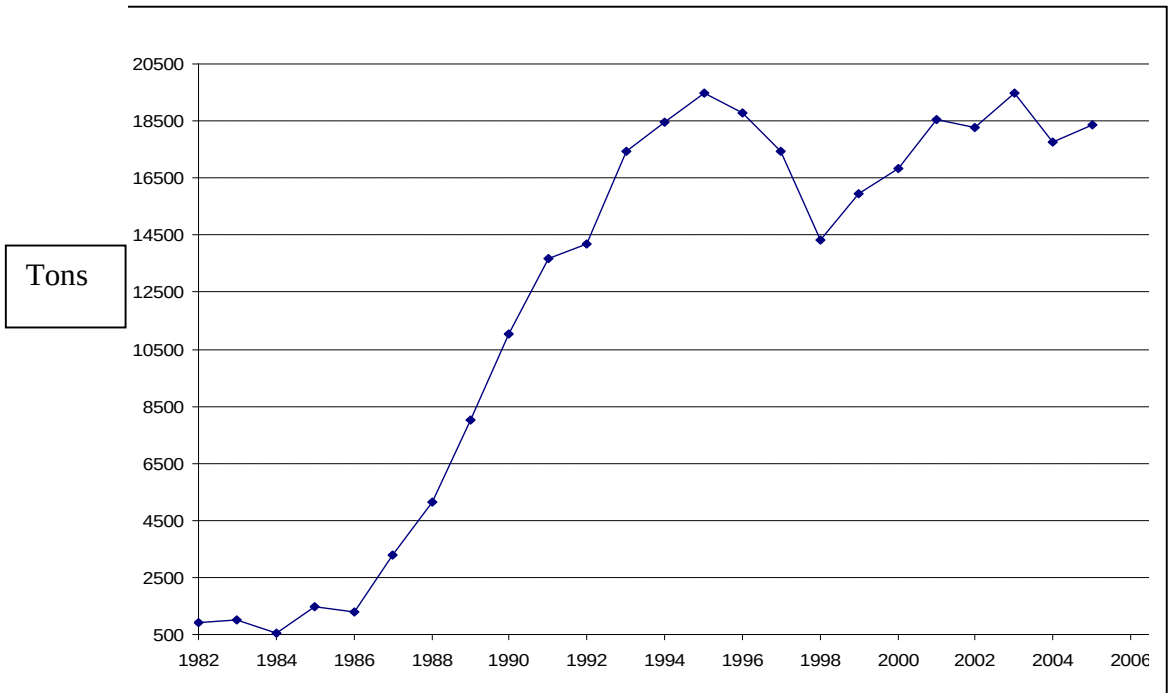

Figure 2: Trends in Exports of Kenyan Nile perch (Tons), 1997-2004
Source: Central Bureau of Statistic, various years

cases, revived and strengthened hitherto dormant ones.

The fisherfolk self-help groups contributed to compliance with IFSS in three ways. First, they enabled the fisherfolk to coordinate their activities and to focus on improving and controlling hygiene conditions in the landing beaches and holding facilities. The groups contributed money for the running of the Beach Management Unit (BMU) whose responsibility was to monitor and enforce the hygiene conditions within the landing areas. Each fisherfolk group contributed 20 percent of revenues from membersô sales towards the operations of BMU. Second, the fisherfolk self-help groups invested directly in the improvement of holding facilities. Some groups constructed new holding facilities while others upgraded old ones. Third, self-help groups fenced-off the sites used by members to land the catch to keep animals out. Fourth, the groups with assistance from their exporters established a system of traceback.

The formation of fisherfolk self-help groups therefore enabled the smallscale fisherfolk to spread out the transaction costs of meeting IFSS and therefore stay in export business. Compliance with IFSS improved market access which, in turn, led the smallscale fisherfolk to increase their catch and hence perch exports. At the same time the groups helped reduce buyersôtransactions of especially those related monitoring compliance and the establishment and maintenance of traceability system.

How did the industry manage to weather the 1999 ban without a decrease in exports? Following the first two bans (i.e., in 1996 and 1997), Kenya diversified its destination markets by developing new markets in Israel, Australia, and Japan among others. This strategy resulted in an increase in the volume of exports of Nile perch despite imposition of stringent EU food safety requirements. However, this was a temporary solution to the standards problem. Once the industry addressed the food safety issues that led to the bans, it refocused exports to the traditional markets.

Although the diversification of exports played some role in the sustaining the industry during the bans, its importance as a strategy for long-term compliance with IFSS was secondary to that of collective action for two reasons. First, these markets were thinner compared to traditional markets hence would not have been able absorb all the perch exports from Kenya. Secondly, these new markets offered much lower prices than the traditional markets.

Conclusions and Policy implications

This paper examines how the arrival of IFSS affected exports of Kenyan French beans and Nile perch to the EU and role collective action played in facilitating small suppliersô compliance with those standards. The paper finds that the smallscale suppliers initially exited both industries due to high transaction costs of meeting the standards resulting in reduction of exports of both

commodities. However, both industries adjusted to the EU standards and subsequently increased exports through a collective action. In both industries, smallscale suppliers (farmers and fisherfolk) countered the high investment costs of meeting the standards by forming supplier organizations. These organizations resolved the suppliersô idiosyncratic and factor market failures by providing the inputs and technical services members needed to comply with IFSS. These findings indicate that smallscale suppliers in developing-country can overcome the challenges posed by the high costs of investing in the facilities needed to meet IFSS through collective.

Two policies issues arise from this study. First, alliance formation (i.e., formation of supplier groups) is crucial to overcoming the challenges posed by the costly IFSS investments. Such alliances reduce transaction costs by spreading such costs over the alliance members thus increasing the competitiveness of the smallscale suppliers. The government therefore needs to review its policy of demanding a fee before registering such groups. Such policy fuels bureaucracy and encourages rent seeking by those in authority. Second, most smallscale suppliersô organizations tend to be weak and and often sustainable due to weak legal framework. Developing-country governments can therefore facilitate the formation of strong sustainable supplier organizations by strengthening the legal framework within which these organizations operate.

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