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Abstract

While research has focused on the impact of food and safety standards on the export supply chain, the growing implementation of standards in the domestic food value chain in developing countries has largely been ignored. Domestic food standards have started to increasingly appear in the urban markets in Sub-Saharan Africa. Therefore, the main objective of this paper is to explore the status quo and impact of domestic food (safety) standards on food value chains and their actors by taking Tanzania as an example. Based on a literature review, different modes of implemented standards, their drivers and related impacts on producers and consumers are identified. The results show that both public and private standards have been implemented in the study region. Private standards, mostly product and to some extent process standards, are mainly focused on the domestic market. Particularly for the vegetable sector, supermarkets are found to be the major driver of private standards. They have especially adopted the standards originating from international markets. These private product standards mostly refer to quality attributes of products and agriculture commodities. Food standards can increase food security and especially food safety in terms of clean points-of-sale. Whereas traditional open markets in developing countries such as Tanzania need to implement higher hygienic standards to fulfill this principle, supermarkets already provide a clean shopping environment. Although supermarkets introduce private quality standards, higher food prices are assumed to exclude especially poor households from benefitting of higher quality food. The latter still buy their food on informal traditional food markets. With that said, food standards do not automatically have a positive impact on food security of net-consuming households as long as they are not implemented in traditional markets.

Introduction

The last two decades are characterized by an increase of food standards worldwide. This development is owed to the rising consumer awareness of food production and processing as well as the reduction of transaction costs particularly in industrialized countries (Wilson and Otsuki, 2003). With the emergence and proliferation in the developed countries, developing countries took up standards enabling them to participate in international trade (Schillhorn van Veen, 2005). Recently, food standards have started to appear in the domestic markets of developing countries, especially in Sub-Saharan Africa (SSA) (Maertens and Swinnen, 2006). Several reasons such as globalization of food production, consumers' demand for high-quality and safe products, increased importance of trade in fresh products, changing structure of agri-food chains, foreign investments and enhanced technical and scientific knowledge are discussed as explaining the increasing importance of food standards in developing countries (Trienekens and Zuurbier, 2008; Maertens and Swinnen, 2006). While standards can ensure food safety along the food value chain on the one hand and they can serve as an instrument to coordinate the supply chains through standardization and hence reducing transaction costs on the other hand (Giovannucci et al., 2001; Jaffee and Henson, 2005).

The development of domestic markets is evolving quickly due to the transition process of urban and related rural areas (Weatherspoon and Reardon, 2003). This evolvement is characterized by a changing procurement system due to new actors including the rising role of food standards. With the growth of urban

areas, supermarkets found their way to position themselves in the market. For South Africa, a bunch of literature exists on the changes of the procurement system and the role of supermarkets for urban and peri-urban areas. In Eastern Sub-Saharan Africa, Kenya is a major forerunner in the development of supermarkets. However, while there are a few studies on the linkage between the growth of supermarkets, the procurement system in domestic food value chains and impacts on smallholder farmers in other countries in SSA (Louw et al., 2008; Neven et al., 2009; Rao and Qaim, 2011; Rao et al., 2012) the literature on the growing role of food standards is still scarce.

Although Tanzania is integrated in the international markets and hence has to comply with related standards for agriculture commodities being traded such as GlobalGAP (Asfaw, 2009), only little information is available on the role and implementation of food and safety standards related to the domestic market. The regulation of the food market in Tanzania is extremely complex, because the country struggled to adapt their food regulations to the national needs after their independence from Britain (Jukes, 1988). Food safety practices are underdeveloped, however, consumers have a strong preference for food safety and favor locally produced goods (e.g. tomatoes) over imported foods (Alphonce and Alfnes, 2012). But the supply of local food products that fulfil these criteria is limited, which is why commodities based on food standards are imported from neighboring regions to meet the consumers demand. Therefore, the main objective of this paper is to explore the role of standards in domestic food value chain systems in Tanzania. Based on a literature review, the paper seeks to answer the following questions; a) what kinds of domestic standards are implemented compared to national / export standards? b) What are the main drivers of domestic food standards? And c) What impacts do food standards have on farmers, consumers and food security?

The Status Quo of Food Standards in Tanzania

Food standards are generally classified according to the type of standard (private or public), the sphere of standards (product or process standards) and their geographic focus (national or international) (Maertens and Swinnen, 2006; Will and Guenther, 2007). This section will give an overview on the types of standards present in Tanzania as well as its sphere and their geographical focus.

Public Food and Safety Standards

In most developing countries, producers, buyers and consumers have acknowledged the importance of the presence of food legislation, but governments have struggled to apply these legislative measures that seek to prevent fraudulent practice (Jukes, 1988). However, the public food and safety standards that are in place are primarily affected through the national food control systems generally comprising *'food laws, an organization and administration representing central government policy, an enforcement/inspection branch, supporting bodies such as analytical services, research institutions, and consumer organizations''* (Shalini and Goburdhun, 2007, p.37) The importance of effective national food control systems has been emphasized by the World Health Organization (WHO) decades ago through the publication of guidelines that 1) outline the need for food control systems, 2) describe the legal frameworks needed for an effective set of systems, and 3) provide guidelines for the successful development of these control systems (FAO Food Control Series, 1976). Table 1 outlines the national public food control systems present in Tanzania and outlines the relevant sector, indicators and initiators as well as specifications for each standard.

The Tanzanian food (control of quality) Act 1979 has major impairments with regard to the legal definitions since it lacks relevant requirements, e.g. by only addressing public health aspects but not marketing or trade practices. *'Too many acts could give rise to conflicting requirements and thus, confuse the industry and the consumer'* (Shalini and Goburdhun, 2007, p.40). Surprisingly the Tanzanian regulations were not adopted comprehensively after independence, wherefore the 'new' Food (Control of quality) Act 1979 still

included various sections corresponding to the British regulations in part IV on 'General Provisions Regarding Food'. In Tanzania, the standards institution provides advice with regard to the administration and implementation of the food control system. Besides the legal framework, the administrative as well as the enforcement bodies, a successful implementation of standards on food control in Tanzania depends also on properly implemented control agencies such as analytical services, professional and consumer organizations. *'Parallel to the legal framework and to the activities of administrative and enforcement bodies, other supporting bodies play an equally important role in the proper functioning of a food-control agency, namely the analytical services, the professional organizations, and consumer organizations'* (Shalini and Goburdhun, 2007, p. 38).

The implementation of certain standards in developing country can often be referred to a lack of proper equipment within production processes. In Tanzania, the dairy industry *'use for example poorly designed equipment and also lack proper cooling facilities'*, which prevents compliance with the regulation in place, and fish companies *'lack accredited laboratories for chemical and/or microbial analyses'* (Kussaga, 2014, p. 2155). The fishery sector has now invested in cold storage and refrigerated trucks. In general, the EU highlighted four points to improve: "(*a) poor procedures for approving fish processing plants exporting to the EU; (b) methods of issuing health certificates for individual export consignments; (c) overall hygiene standards; and (d) the possibility of fishing through poisoning in Lake Victoria*" (Henson et al., 2000 in Bagumire et al. 2009, p. 459).

Private Food Safety Standards

Private standards can focus on the product itself or they apply to production processes. Product standards mostly refer to quality standards on the a) physical appearance such as shape, color, and absence of blemishes, and b) nutritional contents or absence of undesirable elements such as contaminants and pesticides residues. Process standards involve a set of conditions such as prohibited use of agrochemicals, documentation, availability of sanitary services, etc. (Lui, 2009; Smith, 2009).

Private food safety standards are discussed to further hinder the process of harmonization because they represent a *'new layer of governance that further fragments national markets according to the food safety requirements with which exporters must comply'* (Henson and Humphry, 2009, p.26). Contrary, it has been found that private standards have in fact triggered the harmonization process. In general, private standards have a significant impact on the sector of primary food and vegetable producers in developing countries (FAO 2007). However, the impact of private standards on small-scale producers in developing countries has been criticized due to the fact that standards act as a barrier if farmers have to comply with high bureaucratic standards. Previous research found that the application of the GlobalGAP standards for the export of fresh fruit and vegetables by small-scale farmers in Kenya has downsized that export market (Tallontire et al., 2009). This report seeks to investigate if the same effect has occurred for small scale vegetable farmers in Tanzania. In general it has been found that that *'the cost of maintaining the integrity of its controls is considerably higher in supply chains consisting of appreciable numbers of small farmers than if exporters procure from a limited number of medium or large-scale producers'* (Henson and Humphry, 2009, p.vi). However, due to various reasons the implementation of private food and safety standards in the agri-food sector of developing countries is sometimes ambitious. The requirements of private food and safety standards may be a challenge for small-scale farmers as well as suppliers since compliance measures have a significant influence on production processes. This implies that such assessment measures hinder the small-scale suppliers to benefit from the implementation of the private standard schemes. Due to these barriers for developing countries some initiatives to promote their interests within the schemes of standardization, e.g. Kenya developing a national variant of the GlobalGAP standard called KenyaGAP.

The WTO has defined three types of private standards, based on the source of definition of the standards:

- Individual company standard:
  The individual company standards are developed by individual companies, in the case of food and safety standards mostly by large food retailers, who then implement them along their supply chain.

- Collective national standard:
  Collectives of organizations operating within specific countries, regions and/or industries develop collective national standards by industry associations and NGOs.

- Collective international standard:
  Collective international standards apply a cross-country perspective and are thus mostly hosted members of different nationalities.

In Tanzania, the process of food standards is mainly driven by collective national standards under the responsibility of NGOs and private associations under the participation of different stakeholder groups (see table 2). However, the scale of implementation is still low.

Thus, in operational practice, public and private standards coincide on various levels with regard to their impacts on the vegetable industries in developing countries since private standards respond to the government regulations that are in turn established in accordance with public food safety standards. .Thus, private standards can also be perceived as a control mechanism to ensure compliance with public standards by assessing the conformity. Whereas private standards are voluntary with regard to their regulatory impact, with some exceptions the compliance with most public standards is mandatory.

The subsequent tables provide an overview of the role of food and safety standards in food and value chains on public and private level in Tanzania. The results show that both public and private standards have been implemented in Tanzania. Private standards, mostly product and to some extent process standards, are mainly focused on the domestic market and are implemented by NGOs and stakeholder associations. However, the scale of implementation is still very low.

Tables 1 and 2 are comparing both the national and private food safety standards currently present in Tanzania. The tables outline that initially the government enforced national standards through mostly mandatory regulation. Private initiatives then added primarily voluntary standards in specific food and beverages sectors to ensure the implementation of specific food and safety standards.Contrary, the national regulations are generally applying rules and codes of conduct for the overall food sector. However, the analysis found that there is still a lack of guidelines for the successful implementation of both private and public food safety standards in Tanzania.

Both tables also show that specific standards are available for perishable products such as fish, vegetables, and fruits. Especially private standards focus on specific food groups such as vegetables and important cash crops such as coffee. Coffee is a suitable example showing that international standards are implemented top down also on national level for domestic demand to be able to supply coffee nationally and internationally. Public standards are more generalized in terms of food groups.

National Food and Safety Standards in Tanzania	Product/Sector	Certification / Codex	Initiator	Mandatory / Voluntary	Reference	Specification/Remarks
Import Food Control Systems						
Tanzanian food (control of quality) Act 1979	Food	IV-General Provisions Regarding Food	Governmental	Mandatory	Shalini, 2007	1) some laws may address only public health aspects but notmarketing or trade practices. 2) aspects such as sampling are not covered in the legislation. 3) has some problems pertaining to legal definitions
Food control authorities	Fish	HACCP for fish	Governmental	Voluntary	Kussaga, 2014	1) lack accredited laboratories for chemical and/or microbial analyses 2) company-specific product sampling plans are often lacking
Food and Drugs (Standards of Quality from 1946, updated in 1971 after independence	Food and Drugs	Regulation	Governmental	Mandatory	Jukes, 1988	1) Basic standards for 11 foods 2) simple standard specification 3) Controls of the use of preservatives
Tanzania Food and Nutrition Centre (TFNC)	Food	Regulation	Governmental	Mandatory, but not directly concerned with food law and food law	Jukes, 1989	1) advise the Government, the schools and other public organisations on matters relating to food and nutrition'. 2) helping improve the nutrition of the population
Tanzania Bureau of Standards (TBS)	*Food*	Regulation	Governmental	*Mandatory*	Jukes, 1989	1) 'to undertake measures for quality control of commodities of all descriptions and to promote standardisation in industry and commerce' 2) 'to prepare, frame, modify or amend standards'. the population 3) Powers are given to the Minister for Trade to make any standard into a 'compulsory standard'.
Export Food Control Systems						
EurepGAP	two large-scale fresh producer-exporters (Seregeti Fresh and Gomba Estates)	Standards adapted from Global Gap (owned by a European based trade organization whose members today comprise growers, food manu-facturers and retailers)	Governmental	Voluntary	Lazaro et al., 2010	1) To ensure compliance with this standard, the exporters provide technical support to out-growers in regard to pesticide application 2) The companies supply inputs, mostly on credit deducted from crop 3) Contract farmers supply land for production and labour for most operations, including farm management.

Table 1: National public food control systems

Private Food and Safety Standards in Tanzania	Product/Sector	Certification / Codex	Initiator	Mandatory / Voluntary	Reference	Specification/Remarks
Standards institution	Food		NGO	Voluntary	Shalini, 2007	1) administration of the food control system 2) measure the possible economic impact of standards and the consumer needs 3) delegated powers to provide scientific and technical advice
East African organic products standard (EAOPS)- Kilimohai organic (EAS 456:2007)	plant production, animal husbandry, bee keeping, wild production and processing	Regulation	Buyer/Supermarkets	*mandatory*	EAOPS, 2007	Public-private sector partnership deveopled in cooperation between the national organic movements, national standard bodies and organic certifying bodies
UTZ Certification	coffee + (agricultural commodities including cocoa, palm oil and tea)	General regulations, Control points and Compliance criteria).	Buyer/Supermarkets	*Voluntary*	Lazaro et al., (2010)	
Global Gap	fresh vegetables using smallholder contract farmers	Standards provided by Global Gap (owned by a European based trade organization whose members today comprise growers, food manufacturers and retailers)	NGO	*Voluntary*	Lazaro et al., 2010	
TanCert Organic	agricultural production	Organic production standard	Buyer/Supermarkets	*Voluntary*	www.tancert.or.tz	
(FLP) Flower Label Program	Flowers	Standard	Buyer/Supermarkets	*Voluntary*	Lazaro et al., 2010	

* 1) Individual company standard
2) Collective national standard
3) Collective international standard

Table 1: Private food and safety control systems

The Drivers of Domestic Food Standards in Tanzania

Spillover effects of international on domestic standards are observed (Weatherspoon and Reardon, 2003). In the domestic food chain in Tanzania, tables 1 and 2 showed that many private standards are driven by NGOs and stakeholder groups focusing on specific food groups. However, the scale of implementation is still very low. Other important drivers of standards' implementation in developing countries are supermarkets originating from the ones prevailing in the foreign market. To guarantee the customers that their products have fulfilled local and international standards, these supermarkets attempt to buy agricultural products from large and established traders or farmers who are already involved in export markets (Louw et al., 2008).

Supermarkets are seen to be the front runners for the implementation of private domestic food standards in value chains. In general, supermarkets' diffusion occurred mainly in four waves. The first wave took place in the major cities of richer Latin American countries. The second wave included East and Southeast Asia. Countries of Eastern and Southern Africa such as Kenya and South Africa and the poorer countries of Latin America fall under the third wave, whereas Bangladesh, Cambodia and some parts of West Africa belong to the fourth wave whereas in Tanzania that process has only recently begun (Reardon et al., 2003; Reardon and Gulati, 2008). Supermarkets have grown rapidly in SSA because of urbanization and the rise of the middle class (Dakora, 2012). They have spread from big cities to small towns. Furthermore, they penetrated much earlier and faster in the processed products and staple food sectors, but much slower in the fresh products sector (Neven and Reardon, 2004; Neven et al., 2006). Of the East African countries, Kenya is more advanced with the largest number of supermarkets covering 6% of the national food retail, 20% of food retailing in urban areas and around 30% in Nairobi (Weatherspoon and Reardon, 2003; Neven et al., 2006). Reardon (2006) has placed different reasons to explain the motivation of supermarkets to set and implement their own standards. First, private standards can substitute the missing or inadequate public standards which are mostly targeted to export markets. Second, private standards act as a product differentiation strategy for supermarkets over traditional actors. Third, private standards such as process standards are used to coordinate the chains thereby reducing the costs and risks in supply chains.

Especially in the fresh fruit and vegetable sector, supermarkets have been found to provide guidelines for suppliers regarding quality and quantity. Suppliers of indigenous vegetables and tomatoes to supermarkets must fulfill certain quality standards (aspects of cleanliness, weight, size, shape, variety and delivery time) to be able to participate in the chain (Neven and Reardon, 2004; Ngugi et al., 2006). To confirm that the product has met the specified requirement, supermarkets' personnel visually inspect the product during the time of delivery. Since the availability of clean water for irrigating vegetables is a problem for the suppliers in urban areas, supermarkets assure the safety of the produce by inspecting the farm of the suppliers to be sure that no sewage water has been used for irrigating vegetables (Neven and Reardon, 2004). Large-scale food suppliers in the fruit and vegetable sector often export to European supermarkets meeting international food safety standards but also sell to domestic supermarkets (Weatherspoon and Reardon, 2003). This positive spillover effect takes especially place in South Africa (Weatherspoon and Reardon, 2003). However, for small-scale farmers, it is still difficult to meet these standards. This "*requires investment in organization/co-ordination, farming practices, packing shed configuration, and post-harvest practices and capital*"

(Weatherspoon and Reardon, 2003, p.351). Here, additional research on access of small-scale farmers to higher value chains is needed, in particular also from the trader and supermarket perspective.

Besides NGOs and supermarkets, consumers' preferences and awareness of healthy and high quality food drives the implementation of food standards, especially in urban areas. Only very few studies are available on consumer food preferences and esp. in terms of food safety standards. The focus of these studies is the willingness to pay for genetically modified crops. Alphonce and Alfnes (2012) found that the consumers have a strong preference for food safety and favor locally produced goods (e.g. tomatoes) over imported foods (Alphonce and Alfnes, 2012). This development is mainly owed to the rise in demand of vegetables and hence the shift from subsistence to commercial production applying poor agriculture practices. Examples are the production in areas of soils with highly susceptibility to heavy metals (Shemdoe, 2010) or the concerns for dichlorodiphenyltrichloroethane (DDT) to control for malaria (Alphonce and Alfnes, 2012). Against this background, the Tanzania Ministry of Trade aims at promoting food safety via strengthening good agricultural practices and animal husbandry (Andrew, 2011).

Impacts of Food Standards on…

…Farmers

Food standards imposed by high-income countries or international trade have raised concerns on developing countries' smallholder producers supplying the export market. Some argue that food standards can play a positive role as a catalyst by providing incentives to modernize the supply chain and provide consumers with healthy food (Henson and Jaffee, 2006; Maertens and Swinnen, 2009). Others argue that the imposition of stringent food standards poses major challenges for smallholders by excluding them from export markets, thus leading to their marginalization (Reardon et al., 2003). Graffham et al. (2009) noted the lack of financial viability of Kenyan small-scale growers as a primary reason for exclusion, rather than the technical inability of smallholders to meet the standards.

For the case of Tanzania, where the larger growers are not available to supply supermarkets with sufficient amounts of high quality food, and where smallholders cannot yet meet the standards of the supermarkets, there is some progression to import produce from e.g. South Africa or Kenya where the needs can be met (Weatherspoon and Reardon, 2003), although Tanzanian consumers prefer locally produced food over imported food (Alphonce and Alfnes, 2012). Here, the importance is given to support farmers for improved market access and ability to comply with food standards by implementing upgrading strategies (UPS). Thereby, Stakeholder participation especially traders and other market actors should work together with smallholders.

Okello et al. (2007) found that international food safety standards resulted in an exclusion of smallholders from the green bean export in Kenya, Zambia and Ethiopia. However, they highlighted that some smallholders continued in the bean export chain after having received support from organized producer groups. Asfaw et al. (2010a) identified a positive impact of export standards on the financial performance of standard adopters in Kenya; small scale producers gained a significant higher net income from export vegetable production compared to the non-adopters. Mwangi (2008) also reported a significant increase in smallholders' income from exporting horticultural products after the adoption of standards. Similarly, adoption of GlobalGAP standards by export farmers resulted in 24% higher crop revenues as compared to non-adopters, meaning a significant and

positive impact of adoption on total revenue per acre (Asfaw et al., 2009). This is also assumed for farmers adopting domestic standards especially for the participation in higher value chain channels e.g. supermarkets (Rao et al., 2012). Hansen and Trifikovic (2014, p. 226) showed that '*large returns can be accrued from national food standards, but only for the upper middle-class farmers, i.e., those between the 50% and 85% quantiles of the expenditure distribution*'.

…Consumers

In developing countries, only a few consumer studies focusing on preference and WTP for food safety have been conducted. A study from Lagarkvist et al. (2011) explored the consumer WTP for safer leafy vegetables in Nairobi. They reported WTP for safer vegetables to be market-specific. Trust and perceived risks were identified as the most important factors influencing WTP where income played only a subordinate role. Further research showed that food safety mainly implies the quality in terms of consumers' perception of healthier food especially in most traditional markets in developing countries (Lagerkvist et al. 2015).

Until recent years, vegetables like tomatoes, spinach, cabbage and amaranthus were perceived to be organically grown in Tanzania. However, due to the rise in demand, vegetable production has shifted from a subsistence level to commercial production. Many farmers have intensified production and have been tempted to use poor agricultural practices, and even produce product in areas highly susceptible to heavy metals (Bahemuka and Mubofu, 1999; Ndengerio-Ndossi and Cram, 2005; Ngowi et al., 2007; Shemdoe, 2010). Recently, there has been a government debate in Tanzania to lift the ban on dichlorodiphenyltrichloroethane (DDT) for use in controlling malaria. This has raised consumer concerns for food safety issues. For example, Ndengerio-Ndossi and Cram (2005) found the presence of pp-DDT in many samples of food at the table-ready stage, which indicated there was already a use of DDT in agricultural production despite the ban.

Alphonce and Alfnes (2012) reported that Tanzanian consumers prefer locally produced food, especially tomatoes, over imported food. In recent years, there have been studies showing poor food safety practices in Tanzania, but until now, the market has not provided Tanzanian consumers with much choice with respect to food safety.

…Food Security

The potential impact of changing procurement systems and food standards on food security of households in SSA is not well analyzed yet (Battersby and Pexton, 2014). Food security is defined as "a situation when all people at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Food Summit, 1996; Grote, 2014). From net-producer perspective, compliance with food standards could lead indirectly to improved food security via increase in income due to a better integration in higher agriculture food value chains such as supermarkets (Rao et al., 2012). From net-consumer perspective, the aspect of food security discussed here refers more to the pillar of safe food with sufficient degree of quality (Grote 2014). The results of the previous sections showed that food standards can increase food security and especially safety in terms of cleaner points-of-sale (Lagerkvist et al., 2015). Whereas traditional open markets in developing countries such as Tanzania need higher hygienic standards to fulfill this need, supermarkets are already able to provide a clean shopping environment. Although supermarkets introduce private quality standards, higher food prices are assumed to exclude especially poor households from benefitting of higher quality food

(Crush and Caesar, 2014). The latter still buy their food on informal traditional food markets. With that said, food standards do not automatically have a positive impact on food security of net-consuming households as long as they are not implemented in traditional markets. Especially in urban areas Crush et al. (2012, p. 271) found out that households' food insecurity is mainly due to household' poverty status along with high unemployment rates, and limited income-generating opportunities rather than any absolute food shortages meaning food access.

Summary and Conclusions

The main objective of this paper was to explore the role of standards in domestic food value chain systems in Tanzania. a) What different kinds of domestic standards are implemented compared to national / export standards? b) What are the main drivers of domestic food standards? and c) What impacts do food standards have on farmers, consumers and food security? This paper showed that many standards on domestic level are already in place but on a low level of farmers' adoption. Most of the domestic standards are adapted from international standards. The domestic standards are mainly implemented by NGOs and stakeholder groups. However, supermarkets evolving in urban areas in Tanzania develop their own standards to coordinate the value chain efficiently and supplying the consumers with high quality food. The consumers' demand for domestic and healthy food supports further implementation for food and safety standards. The impacts of domestic standards are not well analyzed yet. Only a few studies are available mainly from the export sectors, mainly studies from Kenya and South Africa. For Tanzania, more assistance is needed to strengthen to achieve a successful implementation of the food standards in the market. This requires institutions and stakeholder participation from all levels of the value chain to ensure overall consent, enforcement and control mechanisms.

More research is also needed on the factors enabling farmers to participate in value chains with local standards implemented on the supply side in order to promote a pro-poor market development. Additionally, a comprehensive understanding of consumers' willingness to pay for certified agriculture produce on the demand side is needed. In general, food standards do not automatically have a positive impact on food security of net-consuming poor households as long as they are not implemented in traditional markets.

Tanzania's "*encouragement of the development of a wide range of private marketing institutions, local producer associations, and self-help groups is important for farmers to achieve market access, including access to credit and other financial services, transport, refrigeration, and storage*" (Amani 2005, p. 13). This demand to strengthen the export sector should be also retrieved for the domestic food and non-food sector when the compliance of standards is aimed to be intensified. *Such institutional development, however, does not necessarily fully depend on government; the private sector and nongovernmental organizations can also make important contributions* (Amani 2005, p. 13).

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