Institutional collaboration for sustainable agriculture: learning from the tea sector in the Southern Highlands of the United Republic of Tanzania

Filbert Kavia, Allison Marie Loconto, Emmanuel Simbua

Chapter 16

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16.1 INTRODUCTION

Agriculture is the mainstay of the Tanzanian economy, contributing about 25 percent of GDP and 30 percent of export earnings. It employs about 75 percent of the total labour force (URT, 2011b). The rate of growth in agriculture is higher than the average annual population growth rate of 2.6 percent implying growth in incomes (URT, 2011b). However, the average agricultural growth rate of 4.4 percent is insufficient to lead to significant wealth creation and alleviation of poverty, given the low level of agricultural development. Attaining poverty alleviation requires an annual agricultural growth rate of 6 to 8 percent (URT, 2012). The agricultural sector in the country comprises crops, livestock, fisheries, forestry and hunting. Crop production contributed 17.6 percent of GDP and grew by 4.7 percent; livestock production contributed 4.6 percent and grew by 3.1 percent; while forestry and hunting contributed 2.5 percent and grew by 2.4 percent and fisheries contributed 1.3 percent and grew by 1.8 (URT, 2011a).

Food crops include maize, sorghum, millet, rice, wheat, pulses (mainly beans), cassava, potatoes, bananas and plantains, accounting for about 65 percent of agricultural GDP. On the other hand, cash crops (coffee, cotton, cashew nuts, tobacco, tea, sisal, sugar cane and pyrethrum) account for about 10 percent of agricultural GDP. Tea ranks fifth among the leading foreign exchange earning export crops in the United Republic of Tanzania after cashew nuts, coffee, cotton and tobacco. In 2012, tea contributed a total of US$47 993 000 from exports of 26 133 tonnes. This is 7 percent of total cash crop export earnings. More recently, in 2013, the country exported 27 776 tonnes of made tea and earned about US$56 031 000 (TBT, 2013). In addition, the tea industry in Tanzania contributes substantially to employment opportunities. It provides employment for about 50 000 families and total employment (direct and indirect) for about 2 000 000 people (TSHTDA, 2013).

Agricultural export crops have been growing at about 6 percent with food crops growing at 4 percent. Food and cash crops account for about 70 percent of rural incomes. The development of crop commodities is hindered by low product

quality caused by a weak regulatory framework and enforcement of standards for agricultural products; insufficient forward and backward linkages in production, processing and marketing activities; high transaction costs; over-reliance on peasant agriculture and low private sector investment; inadequate support for new/speciality products; and low returns on agricultural investments (URT, 2012). This case study examines the efforts taken within the tea sector to implement sustainable production practices that help to address these limitations in the industry.

Agriculture has changed dramatically since the end of the Second World War. Food crop productivity has risen as a result of new technologies, including mechanization; increased chemical use; production specialization; and government policies that favour maximizing production and reducing food prices. These changes have allowed fewer farmers to produce more food at lower prices. These developments have many positive significant effects for farming, but they also have high production costs and significant negative effects on the environment. Prominent among these effects are soil erosion, groundwater contamination, air pollution, greenhouse gas emissions, poor living and working conditions of farm labourers, and threats to human health and safety (Brodt *et al*., 2011).

Over the past four decades, a growing movement has emerged that questions the necessity of these high costs and negative environmental effects and proposes innovative alternatives of sustainable agriculture production. "Sustainability" has become one of the buzzwords of the twenty-first century. This can be seen by the increasing number of universities that offer courses or even programmes in "sustainability", and many large companies boast substantial departments devoted to the subject (Daily News, 2014). Moreover, sustainable agriculture can be defined in many ways, but ultimately it seeks to sustain farmers, resources and communities by promoting farming practices and methods that are profitable, environmentally sound and good for communities. Sustainable agriculture fits into and complements modern agriculture, which rewards the true values of producers and their products (Brodt *et al*., 2011).

Currently, various philosophies, policies and practices have contributed to Tanzania's sustainable agriculture goals, but a few common themes and principles weave through most definitions of sustainable agriculture, such as voluntary standards for certification of agricultural products and organic agriculture (URT, 2011c). According to ActionAid Tanzania (2011), sustainable agriculture in the country integrates several goals such as environmental issues, farm profitability and prosperous farming communities. It refers to the ability of farms to produce food indefinitely, without damaging soils and ecosystems, or human and social capital. Sustainable approaches aim to maintain healthy soils while reducing reliance on external inputs such as synthetic fertilizers, pesticides and herbicides.

Recently, Tanzanian agriculture and particularly crop production have been critically affected by changing weather patterns. These include unreliable and unevenly spread rainfall, longer dry periods, destructive rainfall (damage to crops, soil erosion and damage to infrastructure), higher temperatures and frost in some areas. Intensified climate change, resulting in pests and outbreaks leading to lower yields and the need to increase the use of pesticides, is causing major problems for producers. According to the National Agriculture Policy (NAP, 2013), of 10.8 million ha under cultivation, only about 450 392 ha are currently irrigated. Other national sustainability concerns include the erosion of the natural resource base and environmental deg-

radation through its unsustainable use. Other problems experienced in the country are land degradation, desertification, widespread pollution from improper handling, and inappropriate use of agrochemicals and fertilizers. The environment is further degraded by poor cultivation practices, bush fires, overexploitation of forests, and invasion by exotic organisms and climate change. This has affected agrobiodiversity, leading to declining land productivity.

The institutional innovation in this case study is the collaboration between public and private actors in the tea industry, which created an enabling environment for the adoption of private sustainability standards. Tea production in the Southern Highlands (Mufindi, Njombe and Rungwe districts) is divided between smallholder farms and large estates owned by tea companies that also own the processing facilities. Smallholders are organized in groups/associations through the Tanzania Smallholder Tea Development Agency (TSHTDA), and the Tea Research Institute of Tanzania (TRIT) provides new technologies and extension frameworks for the system.

Smallholders deliver their leaf to one of the nine tea processing factories certified by Rainforest Alliance (RA) standards, owned by three companies on a contract farming basis (Mufindi Tea Company [MTC], Unilever and Wakulima Tea Company [WATCO]). The mission of the companies is to provide effective management services to smallholder groups for efficient production, processing and marketing of high-quality teas through the RA/Sustainable Agriculture Network (SAN) standard. The standard aims to increase product quantity and quality and enhance market recognition of responsible farming (and thus RA-certified teas). This helps the companies to retain current markets and tap into new ones, and thus is one of the ways for them to maintain and improve their markets. The successful RA certification of smallholder tea farmers needed significant involvement of different actors in the value chain, in addressing bottlenecks that prevent tea smallholders from implementing RA criteria practices. This involvement ranges from changing the mindset of smallholders, through introductory training to achieve RA certification, to hands-on guidance and practical advice.

Data collection for this case study involved holding discussions and interviews with identified stakeholders and targeting tea growers' associations. Individual and focus group discussions and/or interviews were conducted, using an interview guide. Various documents/reports, including policies, studies and written briefs from various authorities or stakeholders were consulted. The team visited tea-growing areas of Mufindi, Njombe and Rungwe districts in the Southern Highlands.

This chapter is organized in five sections that present the institutional landscape, innovation and sustainable practices, markets for sustainable products and services, results and discussions, and conclusions and recommendations.

16.2 INSTITUTIONAL LANDSCAPE

The Government of Tanzania (GoT) has reformed policies, programmes and strategies aimed at creating an enabling environment for ensuring household food security, improving agricultural productivity, profitability and farm incomes, and alleviating rural poverty in a sustainable manner. It established the Agricultural Sector Development Programme (ASDP) in 2006 as an agricultural policy framework aimed at transforming predominantly subsistence agriculture into a commercially viable sector through increased productivity and profitability of production. ASDP

serves as a tool of the Government and of stakeholders for coordinating and monitoring agricultural development (URT, 2006). At national level, there have been major changes in the National Policy Framework, resulting from the implementation of the Tanzania Development Vision (TDV, 2025), Poverty Reduction Strategy Paper (PRSP), National Strategy for Growth and Reduction of Poverty (NSGRP I and NSGRP II), Long-term Perspective Plan and Five Year Development Plan. In order to address stagnating growth and promote the modernization of the agriculture sector, a number of reforms such as the National Agriculture Policy (NAP); *Kilimo Kwanza* [Agriculture First] Resolution; Tanzania Food Security Investment Plan (TAFSIP); Southern Agricultural Growth Corridor of Tanzania (SAGCOT); Bread Basket initiative; and Feed the Future programme have all been initiated to complement the speedy implementation of ASDP (ACT, 2009, 2010).

These reorientations have been made in order to take advantage of existing domestic, regional and international market opportunities. With the European Union (EU) the main trading partner, Tanzanian producers and exporters face an increasingly stringent set of official and private standards focused on good hygienic practices, safe use and storage of pesticides, environmental management practices, worker safety and other social standards (e.g. GlobalG.A.P. and RA). Depending on previously existing circumstances, obtaining and maintaining such certified compliance require growers and/or exporters to modify their facilities, alter their technologies, upgrade their management systems, undertake additional testing and increase record-keeping. Obtaining and maintaining compliance with private standards' protocols requires considerable investment that is considered worthwhile since it opens up new market opportunities and yields efficiency.

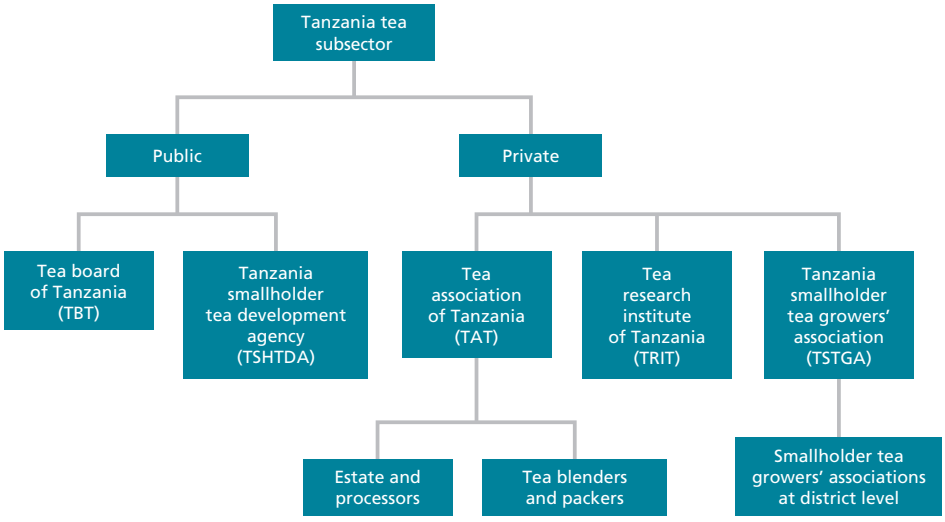
Since 2013, GoT has put in place an agricultural policy that emphasizes sustainable agriculture through sustainable, environmentally friendly crop husbandry practices. On the market side, NAP underlines public-private collaboration with other agricultural marketing actors in order to meet agricultural product quality, grades and standards for domestic, regional and international markets. There are currently several types of sustainable agriculture practices employed in different agriculture production systems including farming, which rely on techniques such as crop rotation, green manure, compost, and biological and cultural weed, pest and disease control. These techniques exclude or strictly limit the use of various methods including synthetic petrochemical fertilizers and pesticides; plant growth regulators; antibiotic use in livestock; genetically modified organisms (GMOs); and human sewage sludge. Agro-ecological systems, which are multisystem approaches for creating a truly sustainable food system, together with the more common environmental, human health, economic, and even social concerns involved in sustainability, also seek to include cultural and political systems in the search for a sustainable food system.

These policies are reflective of changes within the agriculture sector over the years. Sustainable agriculture in Tanzania started in the early 1990s, in cotton farming in the Shinyanga region, by introducing an integrated pest management (IPM) approach, which doubled cotton production with minimal use of agrochemicals (TCB, 2010). Loconto (2015) traced the beginning of sustainable tea production in Tanzania to tea estates that were certified organic and fairtrade during the early 1990s, with an increasing occurrence of multiple certifications. Currently, the standards in use are the Ethical Tea Partnership (ETP), Fairtrade Labelling Organizations International

(FLO), European organic regulations (EC834/2007 and EC889/2008) and RA. Apart from these voluntary standards, GoT has taken deliberate measures to support sustainable crop production systems. These include the formulation and introduction of the Agriculture and Livestock Policy and National Environmental Policy (both of 1997), which integrate the aspects of sustainable production. In the same year, in line with these two policies, GoT enacted a Plant Protection Act through its regulation of 1999, and an umbrella framework legislation, the Environmental Management Act No. 20 of 2004. In 2009, in the tea subsector, GoT amended Tea Act No. 3 of 1997 and its regulations to encompass sustainable production through environmental protection and, in 2013, it formulated NAP with an emphasis on sustainable production and environmental conservation.

The agriculture sector is coordinated by relevant government bodies, local government authorities, non-state actors, NGOs, development partners and the private sector. There are several institutions that support the tea subsector to move towards sustainable production, specifically with regard to promotion of the adoption of RA standards and market linkages. TSHTDA mainly supports organizing farmers into groups and associations, providing extension services and training of farmers on good agriculture practices (GAPs). The Tea Research Institute of Tanzania (TRIT) provides new technologies and contracts mainly with private factories, to provide specific training on emerging standards and GAPs for smallholder groups, and make sure they comply with RA standards. Local government authorities (LGAs) are responsible for improved infrastructures, especially feeder roads within smallholders' farms.

FIGURE 16.1
Main tea stakeholder institutional structure



Source: authors' elaboration.

The Tea Board of Tanzania (TBT) is a regulatory body that has a legal mandate to regulate and supervise the tea industry in the country. The Tanzania Smallholder Tea Growers' Association (TASTGA) is an umbrella association of 16 registered tea smallholder associations and advocates for smallholders' interest and welfare at national level with public regulators and private organizations. The Tea Association of Tanzania (TAT) caters for the interests of tea estate owners, processors, blenders and packers and has a crucial role in providing markets for smallholder green leaf exports. It engages in negotiations for labour and green leaf contracts with national-level regulators and smallholder organizations.

This set of organizations, and the way they collaborate to govern and promote the tea industry, links the sustainable production practices according to the RA standard to markets for these certified products. RA is a member of SAN, a coalition of independent non-profit conservation organizations that promote the social, economic and environmental sustainability of agricultural activities by developing standards and releasing authorization for certification.

Apart from the above-mentioned institutions and actors, there are other initiatives that are important. First, there is SAGCOT, an international public-private partnership (PPP), which was launched at the World Economic Forum on Africa in May 2010 in DaresSalaam, and in January 2011 in Davos, Switzerland. The initiative is to implement a transformation of Tanzania's agriculture vision (*Kilimo Kwanza)*, mandated to mobilize private sector agribusiness investments, and link them with public sector commitments to achieve rapid and sustainable agricultural growth in the southern corridor of the country for both cash and food crops. On 16 April 2014, SAGCOT disclosed the requirement of an IPM plan as one of four due diligence instruments necessary to address and manage environmental and social impacts within proposed SAGCOT investment project development activities. The other three instruments are an environmental and social management framework (ESMF) disclosed in August 2013, resettlement policy framework (RPF) and a strategic regional environmental and social assessment (SRESA) both disclosed in October 2013 (Daily News, 2014a).

All these instruments aim to monitor and mitigate negative environmental impacts in the SAGCOT area by promoting biological and ecosystem-based pest management. Under this project, pesticide use and management will be guided by Tanzanian law, World Bank Policy Operational Policy (OP) 4.09 and experience with IPM in the agriculture sector in Tanzania. This helps to support innovation on institutional involvement in sustainable agriculture practices, which takes place within the SAGCOT area.

In August 2013, as a means to implement *Kilimo Kwanza*, GoT signed a memorandum of understanding (MoU) with Unilever through the SAGCOT initiative, with the vision of doubling the size of their business by involving smallholder tea farmers in Njombe, Mufindi and Kilolo districts. Unilever aligned its investment strategy with the Tanzanian tea industry development strategy and the transformation of the smallholder tea subsector as championed by TSHTDA. The opportunity will allow Unilever to achieve its objective of commercializing tea farming by smallholder growers through effective involvement in the tea value chain. Unilever works with GoT, which is represented by TBT and TSHTDA, to improve the supply chain, yield and quality of tea through support programmes for smallholder farmers

to obtain an RA standards certificate, so that all related tea production is sustainable (data from interviews, April 2014).

In addition to the private and public sector, there is some involvement of a local NGO, the Tanzania Forest Conservation Group (TFCG), which is working in Mufindi district with Mkonge Tea Block Farm Cooperative Society in its forest conservation project in the Eastern Arc Mountains. In the district, TFCG promotes the conservation and restoration of forest biodiversity for the benefits of present and future generations. The group supports field-based projects by promoting participatory forest management, environmental education, community development and advocacy to foster participation, cooperation and partnership. The initiatives join hands on sustainable production by ensuring compliance with the RA standard on conservation issues in the geographic area of this case study (data from interviews, April 2014 and The vertebrate biodiversity and forest condition of Udzungwa mountain forests in Mufindi District TFCG Technical Paper 18 [Doggart *et al*., 2008]).

16.3 INSTITUTIONAL INNOVATION: CERTIFYING THE TEA SUBSECTOR BY RAINFOREST ALLIANCE AND SUSTAINABLE AGRICULTURE NETWORK STANDARDS

Background and organizational structure

In the Southern Highlands of Tanzania, the innovation was created by three large tea companies practising sustainable tea production through multiple certification standards (ETP, FLO, organic and RA), by taking advantage of being linked with more than one niche market. These three companies work separately and competitively with each other in the production of processed tea (and at times for the purchasing of green leaf from farmers), but on issues of sustainability they have worked in a pre-competitive way with the public sector actors mentioned in section 2, in order to organize smallholder farmers and encourage the adoption of sustainable agriculture practices. The companies have histories of engaging with local and international stakeholders in environmental and social sustainability projects (Loconto, 2015). Since 2007, they have been adopting the SAN standard with its production principles and criteria for implementing sustainable agriculture practices. RA certification of the SAN standard is expected by the Tanzanian tea industry in order to uphold strong market demand for certified products, better access to buyers, sale contract stability and, ultimately, higher incomes for farmers.

The direct overriding motivation factors for the companies in this case study area with these special markets include access to premium markets that require RA-certified products/suppliers, and the additional premium price paid to certified suppliers/products. The actors in the value chain teamed up to upscale and embed smallholder farmers in sustainable tea production through RA standards for export markets. The motivation is cemented by integrating sustainable tea production with the existing policies, strategies and regulations. These include the Tea Industry Strategy 2012/13–2022/23; transformation of the smallholder tea subsector (TSHTDA Strategic Plan 2013–2018); TBT Strategic Plan 2015/16–2019/20); the amended tea regulations of 2010; and National Environment Management Act No. 20 of 2004, under the National Environment Management Council (NEMC).

In 2009, the innovation rolled out to smallholder farmers in Rungwe district where the involvement of different actors in the value chain subsequently increased.

In the district, home to half the smallholder tea farmers in Tanzania (15 000 out of 30 000 farmers), the smallholders joined together and formed an association known as the Rungwe Smallholder Tea Growers' Association (RSTGA), which owns a 30-percent share in the Wakulima Tea Company (WATCO). WATCO operates Katumba and Mwakaleli factories and the Kyimbila and Rungwe estates in Rungwe district. It is a joint venture between Tanzania Tea Packers (TATEPA) and smallholders represented by RSTGA. The company hired TRIT to provide commercial extension and technical support to enable them to attain optimal production potential and acceptable quality, facilitate logistics of green leaf collection, facilitate correct and timely payments for farmers, and coordinate field activities and the use of inputs.

The Mufindi Tea and Coffee Company, operating in Mufindi and Njombe districts, owns four factories in Itona, Luponde, Kibena and Ikanga. The Ikanga factory depends on smallholder green leaf for 100 percent of its production and has strong ties with smallholders organized in five schemes. It engages TSHTDA and TRIT for extension services. The remaining factories depend on their own estates and smallholders supply 20–30 percent of total production under the green leaf sale contract arrangement. All four factories are RA certified. The first external RA audit was conducted in April 2014, which resulted in achieving certification for 2 699 farms out of 3 500 (77 percent).

Unilever Tea Tanzania (UTT) owns three factories (Kilima, Lugoda and Kibwele) and five estates in Mufindi district. It purchases smallholder green leaf from medium-scale smallholder farmers on a contract-farming basis. UTT is the largest company in Tanzania and has a strong link with 200 medium-scale tea farmers (owning 20–200 ha). Of these, 169 are RA certified. UTT financed training and awareness creation, and provided individual farmers with personal protective equipment (PPE) in the form of a soft loan, to be repaid with the second payment (bonus) received from the sale of processed green leaf.

Currently, in three of the districts mentioned, 14 799 smallholder farmers, of which 35 percent are women, have engaged with RA standards under the facilitation of tea companies as group administrators. In Rungwe district, WATCO is the group administrator, with 11 900 RA-certified farmers (80 percent of all farmers), of which 4 502 are women and 7 398 are men. In Njombe district, Ikanga tea factory is the group administrator with 2 698 RA-certified smallholder farmers (50 percent of all smallholders) of which 2 024 are men and 674 are women. In Mufindi district, the programme for farmers to engage with RA standards is in its initial stages, and to date only 200 farms are RA certified (12 percent of all farmers), with Unilever as group administrator.

Sustainable practices

In collaboration with RA country coordinators, tea estates and factories train farmers to implement the 2010 SAN sustainable agriculture standard. As a result of training and application of RA principles and criteria, smallholder farms certified by SAN use the RA trademark seal for marketing their products. The standard has ten principles with 99 criteria, of which 15 are critical (Group certification Standard, 2011). These address environmental issues (social and environmental management system, ecosystem conservation, wildlife protection, water conservation); social principles (fair treatment and good working conditions for workers, occupational health and

safety, community relations); and farm management principles (integrated crop management, soil management and conservation, integrated waste management). To implement standards compliance, the estate factories act as group administrator for those smallholder associations that supply them. Their work includes training and capacity building, leading risk assessment and managing the internal control system (ICS). Farmers are trained on both standard principles and criteria through training of trainers (TOT), where lead farmers are trained and are then responsible for training groups of farmers on both theories and specific practices (RA interview, 2014 and RA training manual).

Environmental principles

Practices that comply with environmental principles include those areas of production that have no negative effect on wildlife shelters and endangered species, buffer zone limits or living fences between production areas, human activity and natural vegetation. Farmers learn how to identify and prepare inventories of natural ecosystems, and protect and restore them through a conservation programme. They focus on understanding the challenges facing wildlife conservation – specifically on prohibiting hunting, capturing, extracting and trafficking of wild animals – and on how to control water waste and conservation of water catchment areas. In the context of the Southern Highlands, these challenges are particularly complex, given the local practices where farmers are used to hunting endangered spices, especially the small monkeys that destroy or eat their crops; traditional farmer practices also consist of cultivating gardens in valleys (*vinyungu* in Swahili), which violates the protection of buffer zones around waterbodies.

Environmental principles are exemplified by the activities of the Mufindi Tea Company (MTC) in Mufindi and Njombe districts. First, MTC has a programme of intensifying its Itona estates in Mufindi district to improve production through irrigation and improvement in water use. The programme involves the installation of underground PVC pipe mains and laterals that improve water-use efficiency. It seeks to do this by reducing water loss through leakage and decrease labour costs (17 workdays per scheme to three workdays per scheme). Currently, improvements in water use have increased yields from 3 200 to 3 800 kg of made tea/ha/year

PHOTO 16.1
Training farmers on how to make and use fuelwood energy-saving stoves in Lupembe, Njombe district

(interviews with MTC, April 2014). Second, through the extension contract with TRIT, farmers have been trained on how to make and use fuelwood energy-saving stoves in 86 households (56 percent of the total in Lupembe). Third, indigenous tree nurseries established in five villages provide planting materials with the environmentally friendly tree *Syzygium cordatum* (*mivengi* in Swahili) at the 800 water sources identified in the district. These trees help conserve water resources on tea farms and in the communities.

Social principles

These principles focus on employer-employee relationships by ensuring workers' rights according to International Labour Organization (ILO) Conventions 87 and 98 on fair treatment and good working conditions for workers. These include a respectful working environment, a necessary policy against physical, emotional or sexual harassment, and a formal mechanism on how to handle and process workers' complaints. Estates must provide safe houses, access to medical services, education for children and training for workers according to SAN standards. Employers must be aware of environmental conservation, health and hygiene, occupational health and safety risks assessment (e.g. protecting workers in extreme weather or events). They must also train their workers on how to handle agrochemicals (health, material safety data sheets [MSDS], transportation, toxicity levels, correct use of PPEs, emergency procedures) and provide medical examinations for workers who are in contact with agrochemical applicators and storage.

Ikanga factory not only supplies group applicators with PPEs but also has a basic health programme for 300 herbicide group applicators, and supports the health centre with 20 beds. In Rungwe, farmers are trained in the use of chemicals and learn their effects through package labels. During chemical applications, farmers are trained on how to identify hazardous areas by using signposts or flags. Yellow flags in front of farms mean that nobody is allowed to enter and red flags at harvest mean that nobody can harvest for a certain period. Other signs include those for buffer zones between farms and roads or household areas where living fences, road signs and disposal pits are used to demarcate the areas.

As company policy, WATCO started an early HIV/AIDS programme in the district, with the aim of creating awareness of the disease, enabling voluntary testing and counselling, and supporting affected farmers with home gardens for food and nutrition security and sometimes as a source of income. RSTGA is the implementer of the programme and obtains support from different donors such as the United States Agency for International Development (USAID), the German Agency for Technical Cooperation (GTZ) and Population Services International (PSI) in collaboration with WATCO. They ensure good working conditions for estate labourers with legal minimum wages and fair treatment. They also provide free housing, recently renovated and installed with solar power. Currently, they extend their arms to smallholder tea farmers by providing them with training on the use of agrochemicals and supporting them with PPE free of charge. They also have heath programmes that provide education on HIV/AIDS to both estate labourers and smallholder tea farmers, clinic services for voluntary HIV testing, counselling and provision of antiretrovirals (ARVs) free of charge.

Farm management issues

Good agricultural practices (GAPs) are the focus of farm management issues, with special attention on integrated crop management, soil conservation and integrated waste management. In implementing soil conservation, GAPs target soil analysis prior to fertilization and soil erosion prevention programmes; use vegetative cover crops to reduce soil erosion and improve soil fertility; promote the use of fallow areas; and prevent burning during land preparation. In integrated waste management, emphasis is put on introducing a programme; using open waste dumps instead of open-air burning; and educating workers on waste management and practices to diminish emissions of greenhouse gas and increase carbon dioxide sequestration.

IPM is promoted to help achieve these GAPs, where physical, cultural, mechanical and biological control is given priority in order to minimize the use of agrochemicals, and agrochemical inventories and records demonstrate rotation and reduction of agrochemical use (elimination of World Health Organization [WHO] Class Ia and b, and reduction of WHO Class II active ingredients). Agrochemical use was reduced effectively in Rungwe district where WATCO, as the group administrator, designated "pesticide application groups" at village level. These are composed of a few healthy male farmers between the ages of 18 and 60. Their health is determined by a medical checkup paid for by the group administrator. Pesticide applicators are responsible for applying all the agrochemicals in their respective villages and are paid by individual farmers on a flexible rate according to the size of the farm. Each applicator is given PPE by the group administrator at a subsidized price (one kit for US$34). The storage of agrochemicals is also separate and done exclusively at village level where stores have been built on the premises of a farmer who was willing to allocate an area of land for the storage facility. The group administrator pays a token amount consisting of 12.5 percent of the total value of agrochemicals stored in one store. The number of stores varies according to the size of the villages and number of farmers. Stores generally range from one to five per village.

There is also a programme for the group administrator to train members (farmers) and internal management personnel on SAN standards and policy content according to the language (Kiswahili), education and culture of participants. The administrator is required to evaluate internal and external risks for the group's management system in terms of compliance with SAN standards and policies, group membership, chain of custody, costs and performance. The management system should be free from conflicts of interest and should assure annual follow-up of members' compliance with the administrator's rules. Accurate and complete records of group members and member farms are the basis for a successful certification process (Group Certification Standard 2011, version 2).

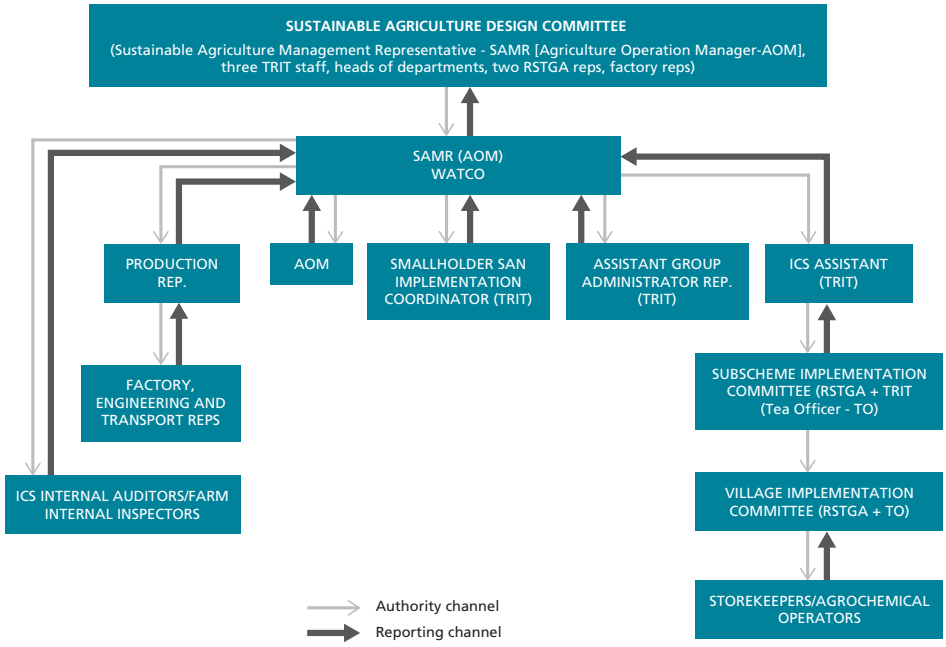
For example, in 2013, at the Ikanga tea factory in Njombe district, the MTC group administrator began to implement the programme of engaging smallholder farmers in RA standards, jointly with TSHTDA and TRIT. TSHTDA provided extension services designed to deliver comprehensive and participatory training on GAPs, farmer empowerment issues and tea production techniques. Simultaneously, TRIT has a contract with the Ikanga tea factory on the provision of commercial extension services on GAPs, and training farmers and their association/group leaders on SAN sustainable standard criteria to achieve RA standards. These involve compliance at farm level, an internal management system at group level and

internal auditing services. The SAN training programme on sustainable and group certification standards began by training a total of 3 500 farmers (80 percent), 21 extension staff from TSHTDA and TRIT, 23 village leaders, 50 lead farmers and 350 agrochemical applicators.

The certification process

To achieve RA certification, each company was required to set up an ICS for training and auditing of individual farms. ICS then receives an external audit every year. We explain how the system is set up in Rungwe, which is typical of the model adopted throughout the Southern Highlands. The programme started in 2009 in Rungwe district, with training for the WATCO Board of Directors, TRIT extension staff and lead farmers (farmers with above-average tea management capacities – see Figure 16.2). Lead farmers were assisted by TRIT extension staff to help train their fellow farmers and prepare for the RA external audit. They are compensated for the time they spend on training by a "lunch allowance" (US$3–5/day). The training model was set up to reach every single farmer and is limited to working on the practices promoted by the SAN standard. The group administrator is responsible for the implementation of the group's internal management system. WATCO created internal audits by using the lead farmers, known as "farm inspectors", under

FIGURE 16.2
WATCO sustainable agriculture/chain of custody system management structure



Source: authors' elaboration.

TRIT extension staff supervision. This is done three times a year before an external third-party audit. The first group was certified in 2011 after a third-party certification audit that certified 80 percent (11 900) of farmers.

ICS inspectors were selected based on the criteria established by WATCO. The call for inspectors was advertised through village tea committees and interested farmers applied. Since farmers are more comfortable with an inspection led by a fellow farmer, only farmers from the communities were selected. Therefore, peer review was agreed upon as the core method of control in ICS. One inspector can inspect from one to three villages depending on the size of the village. Inspectors are compensated for the time they spend by a local bus fare and lunch allowance, amounting to US$6.25/day (data from interviews with WATCO, April 2014). In Njombe district, 65 internal auditors were identified and trained, and are paid US$1.25 per farmer they inspect. Once the objectives of the programme had been met, costs were shared between the Ikanga factory and RA. A small amount was paid by the farmers. The cost of conventional tea production in smallholder tea farms in Rungwe district is set at US$496/acre [0.4 ha] (US$0.12/kg) at productivity averages of between 1 623 and 2 189 made tea/ha/year (TSHTDA, 2014). RA production costs are almost the same as conventional production plus the PPE cost and internal audit fees (data from interviews with WATCO, April 2014).

In addition to ICS, WATCO has established an interesting social control system based on peer review. A digital weighing system was set up in WATCO for separating RA and non-RA certified farmers from the village weighing centre. A coded program identifies RA and non-RA certified farmers with the prefixes 00 (non-RA) and 01 (RA). After weighing, the RA leaf is loaded into green (or other colour) bags, while non-RA is loaded into yellow bags. During transportation, non-RA leaf is loaded into the lower rack of the vehicle and RA leaf is loaded into the upper rack. Offloading at the factory starts with RA leaf (upper rack), followed by the non-RA leaf. Each are put on respectively labelled withering troughs. Processing starts with RA teas. Thorough cleaning then takes place and after 45 minutes the non-RA teas are processed. This distinction between certified and uncertified tea is fundamental to how the standard acts as an incentive for the adoption of sustainable practices.

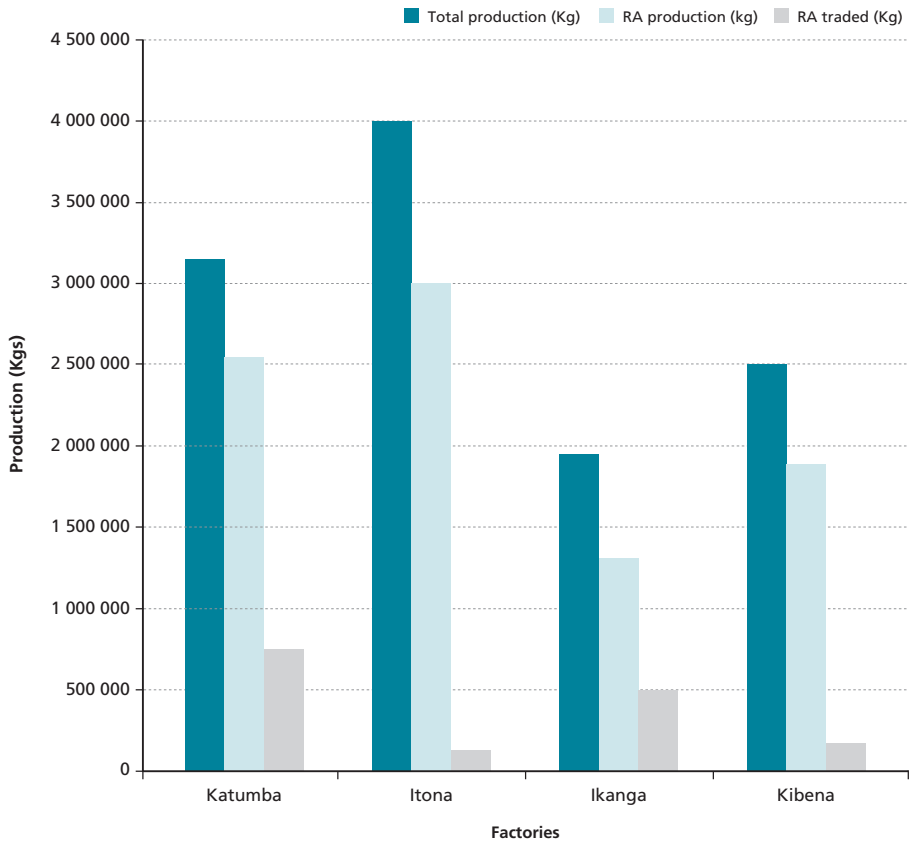
Markets for sustainable products and services

Markets for certified tea are "captured" markets (Loconto, 2010). This means that farmers produce green leaf tea collected from tea bushes, which they must sell within 12–16 hours to a tea processing factory in order to produce a quality product. Therefore, tea processing companies are located close to farmers' fields and provide the only local market outlet for sustainable tea. Farmers are paid a first payment each month and a second payment (bonus) at the end of the financial year. The tea processing companies then market the tea on national and international markets, which demand tea that has been produced sustainably.

At the end of financial year 2014/13, a total of 3 153 810 kg of made tea was produced by WATCO, of which 2 546 937 kg was RA-certified production (80.75 percent). However, only 751 028 kg (30 percent) of RA tea was traded on RA markets. RA made teas are traded through the Mombasa auction or via direct sales to different destinations in Europe, mainly the United Kingdom and the Netherlands. At the Mombasa auction, markets depend on the quantity of tea offered at a particular

auction sale, but RA tea generally fetches US$0.10 more per kg on top of the normal price (US$1.8–2.5/kg) of conventional tea at auction, in intermediary markets and direct sales. Tea companies in the Southern Highlands buy smallholder green leaf at US$0.15/kg above the green leaf price (first payment US$0.144 and second payment US$0.07). The second payment depends on market performance at the end of the year, and is always above the indicative price set by TBT annually, which is US$0.13/kg of green leaf. The main challenge in marketing non-RA certified teas is that the amount produced is too small to meet market demand. Sometimes tea companies are obliged to mix non-certified with RA certified tea and sell them together as non-RA certified tea in order to meet order requirements with short turnaround times. These volume and time constraints related to the market for non-RA certified tea means that the majority of certified tea is sold without the price premium, which does not cover the cost of complying with sustainable agriculture practices and obtaining RA certification (data from interviews with WATCO, April 2014).

FIGURE 16.3
RA and non-RA tea production in different factories



Source: authors' elaboration.

MTC's Ikanga factory has also established digital scales with new codes to separate RA and non-RA green leaf. It loads the leaf into separate coloured bags (white bags for RA and brown for non-RA) and transports them in separate racks. In processing and marketing, the factory has developed a time-gap technique of one hour to separate the processing of RA and non-RA tea. The packed bulk bags of made tea are marked with Ikanga RA and plain Ikanga labels. Only 1–5 percent of MTC's total production is marketed through the Mombasa auction; the remaining tea is sold directly to Dubai, the United States of America and European countries through E-link, Thompson Llyod & Ewart (TL& E), James Finlay and Typhoo. In 2013, MTC established Rift Valley Tea Solutions (RVTS), a blending facility where tea from all four factories are blended according to the quality required by specific buyers. RVTS prepares a master blend for the buyer according to consumer preferences, which cuts the cost of blending for buyers and enables MTC to bypass the Mombasa auction. The RVTS strategy is to increase direct sales in high-value consumer-driven markets and capture a greater portion of the value within the value chain. The price of RA-certified (made) tea ranges from US$2.2 to 3.0/kg for direct sales, which is 10–15 percent more than the price received for conventional tea.

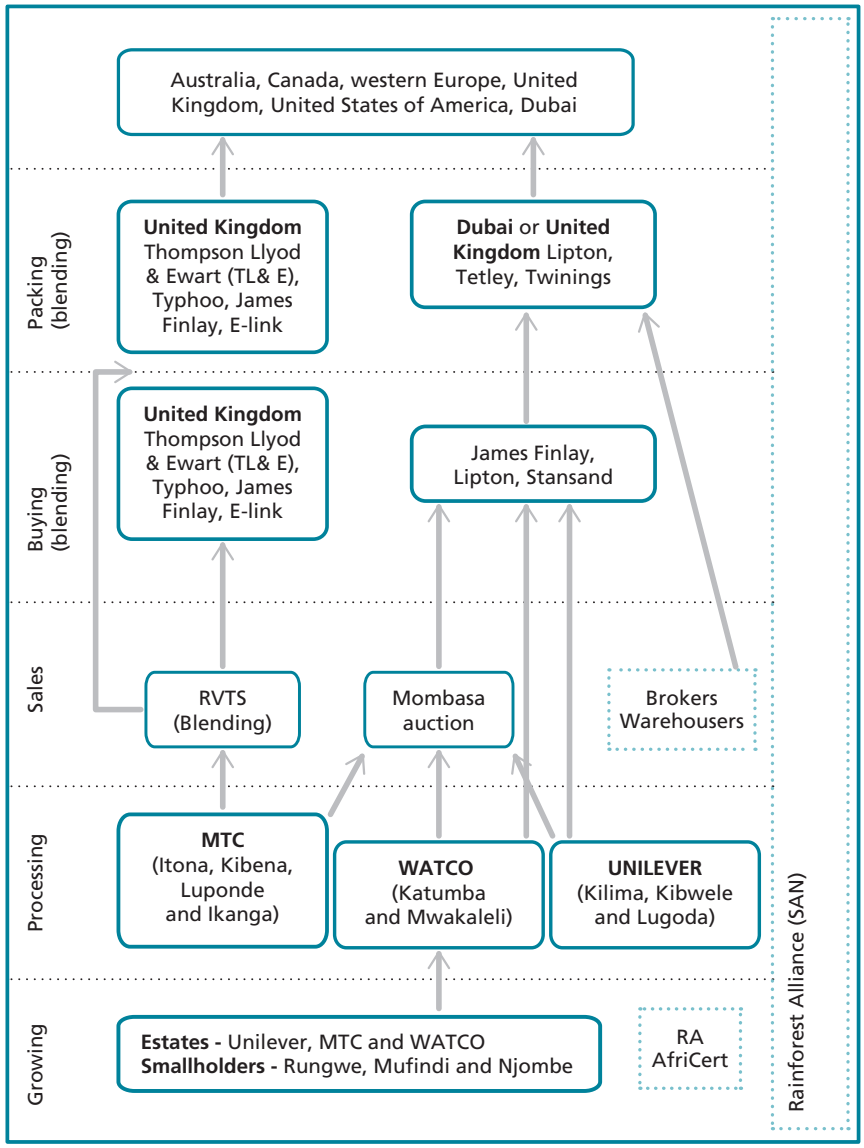
At the end of the 2013/14 financial year, the Ikanga factory produced 1 961 826 kg of made tea, of which RA was 1 320 918 kg (67 percent), and only 499 280 kg (38 percent) of RA made tea was sold. Itona factory has a total production of 4 000 972 kg of made tea, of which 3 000 023 kg (75 percent) of made tea is RA-certified tea, and only 140 000 kg (3.4 percent) of total production was traded in RA market channels. At Kibena factory, where there is a total production of 2 503 984 kg, of which 1 890 415 kg (76 percent) are RA certified, only 176 000 kg (10 percent) was sold on the certified market.

Like WATCO, MTC paid smallholder leaf in two instalments, as first and second payments. It bought smallholder green leaf at US$0.17/kg (first payment US$0.156 and second US$0.07) (data from interviews with MTC, April 2014). At Unilever, where all teas are RA certified, a total of 11 406 890 kg of made tea was produced within the calendar year, of which 1 352 270 kg were sold in domestic markets as non-RA (for blending and packaging factories) worth 1 404 716 558 shillings (US$851 343 at the exchange rate of US$1 = 1 650 shillings) with a price ranging from US$1.2 to 1.5/kg. A total of 1 171 871 kg was sold through Mombasa auction as RA tea worth 2 755 996 212 shillings (US$1 670 300) with a price ranging from US$1.3 to 2.10/kg of made tea. The remaining teas were sold directly through market channels where a total of 11 084 901 kg was sold at a price ranging from US$1.9 to 2.5/kg, worth 20 406 143 943 shillings (US$12 367 359) (TBT, 2014).

Given that smallholder tea farmers are part of a two-tier value chain, we can describe the consumers of certified tea in two ways. The first tier consumers are the tea companies – the only market with which tea farmers have contact. These tea companies process green leaf into made tea that is consumed locally through purchases from the company stores and is shipped to national and international markets. These processors are looking for sustainably produced products for two reasons: (i) to improve the sustainability of their operations in terms of local environment, worker health and safety, and community relations; and (ii) because they access the second tier market niche, which brings better access to buyers, good prices, contract stability, publicity and technical assistance from interested partners,

and strong market demand for RA-certified products (data from interviews with WATCO, April 2014). The second tier consumers are those in developed countries. Most RA tea buyers are consumers who are concerned about environmental conservation, promoting social justice and building local economies. They believe that by

FIGURE 16.4
Rainforest Alliance-certified tea value chain



Source: adapted and modified from Loconto, 2010.

buying RA-certified tea they are promoting: (i) natural resource conservation and less environmental impact; (ii) farmer empowerment through improved productivity; (iii) greater efficiency by reducing costly inputs, creating employee motivation and loyalty for safe working conditions; and (iv) respect for workplace rights (data from interviews with WATCO, April 2014).

PHOTO 16.2
A tea farm in the protected natural forest of Mufindi district

PHOTO 16.3
Training on PPEs for smallholder farmer group agrochemical applicators in Lupembe, Njombe district

16.4 RESULTS

By implementing SAN standard principles and GAP criteria, the following changes in sustainable agriculture practices were observed.

- Environmental conservation in protecting endangered plants and wildlife shelters has increased. Evidence can be seen in the case study areas of Rungwe and Mufindi districts, where endangered species such as monkeys (*nyani* in Swahili), forest francolins (*kwale*), crowned hornbill (*hondohondo*) and little egret (*yangeyange*) have returned, after a long absence.
- There is minimal use of both agrochemicals and prohibited pesticides listed in WHO Class Ia and Ib. For example, gramoxone herbicide (WHO class II), formerly used by most farmers, is almost unused today in the case study areas. There is an increased use of IPM in controlling weeds, pests and diseases. We see this in farmer adoption of recommended pruning cycles as a means of controlling diseases; use of cover crops and mulch in controlling erosion in new farms; and good plucking practices for increasing yield through well-established plucking tables that also control weeds.
- There are changes in workers' welfare in estates, as evidenced by fair treatment, good working conditions, protection from adverse working conditions such as extreme weather, and the use of PPE during agrochemical application.
- Safe use, handling and application of agrochemicals have been adopted in the crop and livestock farming of tea farmers as a result of training, as well as posters, leaflets and brochures written in Swahili that are distributed and posted in every tea-producing village. It is important to note that the SAN standard is an overall farm standard, which means that farmers must implement GAP in all their farming activities, not just tea, in order to become certified.
- We have also observed a spillover effect on other farmers in the area, such as the use of PPE for spraying cattle.
- RA certification does not guarantee a minimum price alone (including the second payment for smallholder farmers) but improves tea production sustainability with a focus on improved farm management in order to achieve better crop quality and productivity, and control costs. In Rungwe district, we observed increased productivity and quality, which translated into a significantly higher net income for certified farmers.
- Tea companies have changed their marketing strategies for sustainably produced tea, since these markets offer more than just a price premium, but also stability, publicity and technical assistance. It is important to note that before the introduction of the RA standard, only Unilever consistently paid a second payment to farmers for their green leaf. With the more lucrative certified markets, MTC and WATCO also began to make second payments to farmers. This is a great difference in financial incentive for the adoption of sustainable practices.

Several challenges were faced as the new institutional arrangements were being set up, including delays in funds for informing and training farmers on sustainable agriculture practices and the creation of ICS. Local politics and cultural beliefs also played a role in initial resistance to the innovation. For example, in Njombe district, farmers had a negative attitude towards the new Ikanga factory because of the closure of their own factory as a result of contested ownership between smallholders,

the private investor and public agencies. This contested ownership was a result of the denationalization process that was part of the 1997 Tea Act. Additionally, some farmers were not present during the internal audit, which hindered the smooth functioning of this mechanism. Moreover, some farmers opted out of the system because of a perceived similarity between the RA and Freemason logo, which brought with it the rumour that taking part in the innovative system was equivalent to registering with the Freemasons.

Despite these challenges, the involvement of different actors in the institutional innovation facilitated the communication of credible information between the private and public actors. Their collaboration functioned as a catalyst in drawing other actors' attention outside the tea subsector to the RA standard and therefore motivated them to evaluate its importance positively for both policy and institutional support. Farmers and the surrounding communities benefited from environment conservation and wildlife protection, which resulted in returning endangered species. Not only did farmers benefit from second payments, but tea processing companies benefited from better access to buyers, contract stability, publicity and technical assistance from buyers and interested donors. According to WATCO representatives: "Rainforest Alliance certification does not guarantee a minimum price; it focuses on improving farming. For us, certified farms are more productive than non-certified farms, that is, they produce more tea per acre". We feel that a farmer's success depends on crop quality, productivity and cost control, and our programme addresses all three. In this case study, increased productivity and quality translated into significantly higher net income for RA-certified farms.

16.5 CONCLUSIONS

The case study explored institutional collaboration for sustainable agriculture with a case study of RA certification. This initiative was spearheaded by three tea companies that owned tea factories and estates that were RA certified. The initiative brought together the public agencies in charge of research, smallholder extension and regulation to collaborate with private companies, smallholder cooperatives and an NGO (RA) to develop a sustainable programme of support to farmers in the adoption of sustainable practices. The RA standard defines and focuses sustainability in the principles and criteria of social, economic and environmental sustainability.

The level of collaboration between private and public institutions varies. At the crucial planning level, where costs and budgets for production are developed, public institutions were less involved, whereas they became more involved at the implementation level. This is probably because their own by-laws have mandates of enforcement and extension. At the outset of the innovation, there was no clear strategy for involving LGAs in planning or even implementation of standards in tea production. From past experience, involving national-level public institutes without LGAs always hinders the adoption of sustainable practices in tea production and in other crop farming systems. LGAs have mandates for conducting agricultural activities at district level and involving them eases farmers into being receptive to new sustainable agriculture practices because of the long-standing relationships between farmers' organizations and LGAs. Good collaboration involves all actors in sharing the costs of innovation (either in kind or in cash). This is difficult when the public sector is not involved at the initial planning stage. It is strongly recommended that

public institutions be involved in cost sharing, especially for smallholder tea farmers where certification costs are high, since this will speed up the certification process.

The institutional innovation implemented by different actors has changed many traditional tea production practices. However, markets for sustainable products are restricted to special market channels. Nevertheless, the system has improved the price of smallholder green leaf, including the introduction of a second payment to farmers. It has also created more transparent and sustainable relationships between smallholders and companies in the production chain through the techniques of peer review and traceability. From this perspective, it is clear that while there is a market for sustainably produced products, it is not the market alone that has served as an incentive for the adoption of sustainable practices. Through these systems of training and certification, WATCO and the other tea companies in the Southern Highlands were able to ensure that sustainable practices were adopted by smallholder farmers. Thus, the standard acted as an incentive for the adoption of sustainable practices precisely because all the different actors collaborated around the goal of certification and changed their organizational practices to support this new goal.

Lessons learned

- A better relationship between the Government and private institutes has enhanced working conditions within the tea subsector. The stakeholder annual meeting organized by TBT is the major forum for stakeholders to discuss all matters pertaining to tea issues. The main agenda item is to negotiate and approve an annual green leaf price for smallholder farmers.
- Through this forum, and through the innovation, there is a consensus among all tea stakeholders on GAPs to ensure that tea farms do not replace all the biodiversity-rich forests with monoculture. This consensus is found in techniques to avoid soil erosion, competition for water, pollution from fertilizers and deforestation for firewood to fuel tea dryers.
- Collaboration among the range of involved actors in the subsector with a focus on achieving specific objectives of implementation of the new introduced technology was important for ensuring easy adoption and reducing costs and time. However, this requires significant investment in time and finance on the part of all stakeholders.
- The motivation for innovating was to link products with good markets (better access to buyers, buying contract stability, publicity and technical assistance) for better prices, although the amount of tea sold through RA market channels is relatively small compared with other markets. Costs of maintaining certification remain high, but not prohibitive.
- The opportunities provided by special niche markets acted as a motivation for scaling up and spreading the adoption of the innovation to other areas of the country.
- Changing the mindset of farmers is costly and time consuming, as a result of the type and level of education they have received to date. Many are averse to the risks of new technologies, which means that regular, intensive contact with extension officers and sensitization to sustainable agricultural practices are needed.

- Changing the farmers' mindset is only the first stage of the process. The crucial stage is determining how to supervise implementation of the practices outlined in the standard criteria. Close supervision and constant reminders to the farmers on how to implement the criteria are needed.
- Costs are high in the case study areas for training farmers, maintaining certification and implementing different programmes in the rehabilitation of destroyed waterbodies and the replacement of lost native trees (by the establishment and management of tree nurseries at village level). Donor funding is needed at least in the start-up phase.
- PPE kits (gumboots, aprons, gloves, plastic macs and heavy duty masks) are too expensive for farmers and costs are currently paid by group administrators. The same is true for maintaining agrochemical stores at village or household level and establishing PPE washing facilities. Long-term viability depends on the willingness of group administrators to carry the cost burden.

Promoting and adapting RA standards for smallholder tea farmers are not easy. There is a different level of understanding among most farmers, who are mainly illiterate, spread across large geographic areas and are farm managers at household level. Sustainable agriculture practices were easily adopted only when the group administrators (tea companies) were themselves ready to adopt the practices through the RA standard. In this way, the tea companies acted as key institutional entrepreneurs that championed the practices within their supply chain and effectively mobilized public support and civil society expertise to achieve their goal.

16.6 RECOMMENDATIONS

Based on the lessons learned from this institutional innovation, it is clear that changes need to be made at the level of individual farmers, farmers' organizations, tea companies, local government authorities, national regulatory bodies, competent agencies and in national laws and policies. For example, apart from sustainable production polices and regulation support, quality control of made tea is a key component for competitiveness on regional and international markets. Furthermore, quality depends on manufacturing practices that start on the farm, including agronomic practices and plucking schedules. Usually, the quality of tea can be assessed by a professional tea-tasting panel. However, the Tea Act does not clearly articulate what tea quality is and how it should be achieved through sustainable practices. Nevertheless, in order to ensure quality tea production at farm level, the participating LGA should institute sound by-laws to ensure that GAPs and required agricultural trade laws are enforced and upheld by all key tea stakeholders. Specific recommendations are made as follows.

- The direct role of the Government though LGAs is needed in planning and implementing standard principles. This can be done through the establishment and enforcement of by-laws.
- Public institutions should be involved in the planning of RA certification for smallholder tea farmers so they can plan for budget support for these activities, as set out in NAP, which insists on sustainable production.
- To promote this innovation to the next stage in other areas of the country, costs of training and implementation of some of the programmes need to be

shared between smallholder farmers and other value chain actors, in addition to the support provided by RA and group administrators.

- Although sustainable agricultural practices are stressed in different policies and even in the recent NAP, there is a need to amend the tea regulations in order to incorporate issues of sustainable production in the tea subsector. This will help tea-producing companies to abide by different sustainable practices that will improve production and quality at reasonable costs.

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