

The effect of certification schemes and related trainings on sustainability in the tea production on small scale farms in Othaya, Kenya.

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Figure 1: The whole group including our guides, our elder Francis and the Chief (who was also hosting us) on the day of the final presentations in Othaya

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Abbreviations

FFS	Farmers Field School
FDG	Focus Group Discussion
KTDA	Kenya Tea Development Agency
MSD	Mainstream Sustainable Development
POX	
PRA	Participatory Rural Appraisal
RFA	Rainforest Alliance
SAN	Sustainable Agriculture Standard
SSI	Semi Structured Interview

Abstract

This report investigates how certification schemes and related Farmers Field School training are affecting the practices of small-scale farmers in Othaya, Kenya. Mainstream Sustainable Development and the critique posed by political ecologists are used as a framework for analyzing and discussing whether the local conditions of the tea farmers can be deemed sustainable. The study identifies four main stakeholders being the certifications schemes, the Iriaini Tea Factory, Farmer Field Schools and the tea farmers, who all are especially influential when assessing the local sustainability. These stakeholders represent differentiating structural positions and perceptions of sustainability, subsequently leading to a mismatch in how they see goals, strategies, challenges and outcomes in relation to sustainability.

The report concludes, that especially economic sustainability in the area can be problematized, as most of the farmers included in the research did not consider the income from tea production satisfying in terms of sustaining themselves and their families. This contradicts the overall vision of Fairtrade and Rainforest Alliance and on this basis a critique of the overall visions behind mainstream sustainable development is posed.

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1 Introduction

1.1 Background

Kenya is a country in East Africa with an agricultural sector making up a fourth of GDP, and employing 69% of the workforce (FAO 2015). Tea is the leading export crop and accounts for 28% of Kenya's total export earnings (Maina et al. 2015). Overall Kenya ranks as the 4th largest producer of tea in the world after India, China, and Sri Lanka (Kiprono et al. 2011). Furthermore the sector contributes to the livelihood of over 560,000 smallholder farmers and provides jobs for over three million people in Kenya (KHRC 2008; KTDA, 2016).

Today the tea sector in Kenya faces many challenges. One is the lack of training and access to extension services (Kagira et al. 2012; Maina 2015). The lack of knowledge is e.g. causing misuse of fertilizer; too little leading to low yields and too much leading to nitrate leaching and the following environmental problems (Kagira et al. 2012). These examples document a need for a more sustainable development in the Kenyan tea sector.

In an effort to ensure sustainable tea governance, the Government of Kenya and other stakeholders in the tea sector have collaborated over the years to sustainably manage the industry through series of regulatory frameworks, and institutions. The Kenya Tea Development Agency was established in 1960 by the colonial government to promote “growing of tea by Africans under auspices of the ministry of Agriculture” (KTDA, 2016). As of 2014 the KTDA was managing 65 factories and over 560,000 smallholder farmers (KTDA, 2016).

1.2 Certification and trainings

Certification of sustainable products roots back to 1988 when the Dutch Max Havelaar Foundation established product certification and labelling. Certification became more widespread with the creation of Fairtrade Labelling Organizations (FLO) in 1997, facilitating the entry of mainstream commercial enterprises (Dolan 2008). Corporate social responsibility initiatives such as Fairtrade are relatively new to the Kenyan tea sector, but are quickly on the rise including the Ethical Tea Partnership, Rainforest Alliance (RFA) and Fairtrade (Blowfield & Dolan 2010).

In this project we will mainly focus on the certification schemes of Fairtrade and RFA. The goal of the Fairtrade certifications is described as “... to promote sustainable development and to reduce poverty through fairer trade” (Fairtrade International 2015). The RFA is following the standards of Sustainable Agriculture Network (SAN), which is an organisation with the mission “To be a global network transforming agriculture into a sustainable activity.”

One of the ways that certification schemes are working towards more sustainable farming and living conditions is through a training called Farmers Field Schools (FFS) (Rainforest Alliance and KTDA 2014). In FFS smallholder tea producers meet regularly, share experiences and study farming practices (Duveskog et al. 2010). FFS aims to improve the sustainability of tea production by educating farmers in sustainable agricultural practices (Waas et al. 2012). A second important goal is to improve the profitability of smallholder tea producers in Kenya (Waas et al. 2012). In Kenya FFS were introduced in 2006 by KTDA and Lipton as part of a joint pilot project (Waas et al. 2012). One of the significant effects of the project was an increase in yields, which grew by an average of 5% to 15% over three years (Unilever 2009). Because of the various positive results the KTDA has implemented the approach on a large scale in 2010 (Gakaria, 2015) aiming to eventually involve 500.000 smallholder tea farmers and 55 factories (Unilever 2009).

1.3 The area of the fieldwork

This study will focus on sustainability of the tea production in the area surrounding the town Othaya in Nyeri county. Nyeri is one of the main tea producing counties in Kenya. The town is about 124 km north of Nairobi and the area is characterized as tropical highland with an elevation of 1850 meters.

Our primary data collection was situated in the area shown on figure northwest of the town Othaya, as we were interested in talking to farmers delivering tea to the Fairtrade and RFA certified Iriraini Tea Factory. We visited 4 tea collection centres, one FFS, and 4 farms for soil sampling.

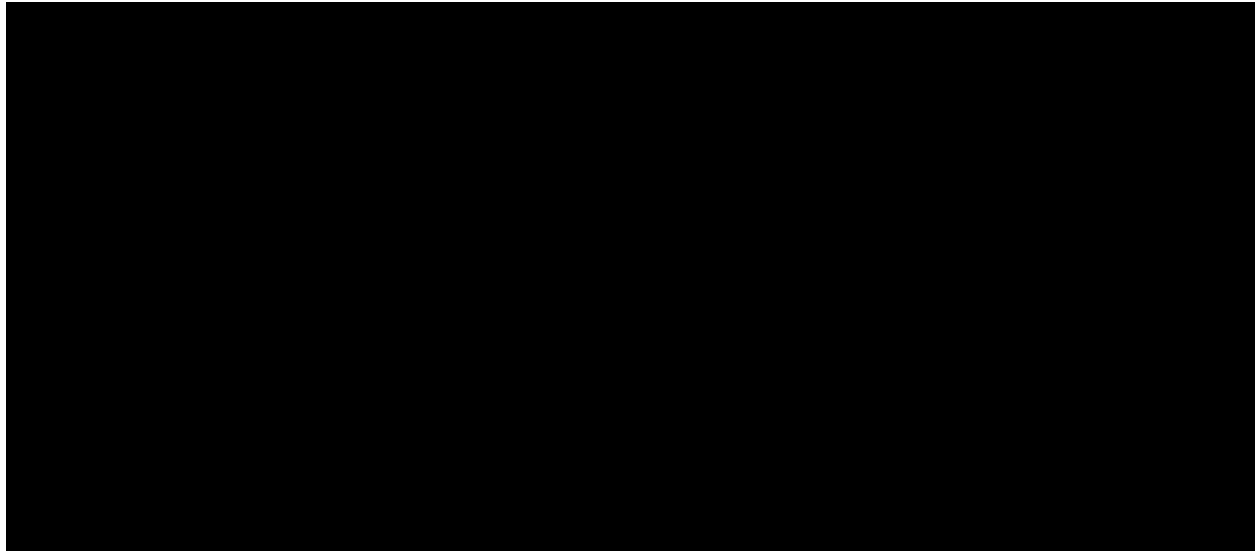


Figure 2: - Map of fieldwork area

1.4 Problem statement

As discussed earlier in the introduction, tea production and sustainability in Othaya is challenged in numerous ways. Arising from this, we phrased the following objective:

How are the visions of Rainforest Alliance and Fairtrade and their related trainings reflected in the sustainability on small scale farms in Othaya, Kenya?

To answer the objective the following sub questions needs to be answered:

- **1 Standards:** What kind of certification schemes are in place, what characterises them and how are they being channelled to the farmers?
 - 1.1 What certification schemes are in place and what characterizes them?
 - 1.2 What perceptions of sustainability are incorporated in the visions and policies of relevant actors?
- **2 Perceptions:** What are the different perceptions of sustainability and corresponding practices expressed by relevant actors involved in the tea sector in Othaya?
 - 2.1 What are the perceptions of sustainability amongst non-trained tea farmers and what are their corresponding practices?
 - 2.2 What are the perceptions of sustainability amongst FFS trained tea farmers and what are their corresponding practices?

- 2.3 What are the perceptions of sustainability expressed by the Iriaini Tea Factory manager?
- **3 Experiences:** In what way are the FFS trainings carried out and how are these experienced by the farmers?
 - 3.1 I How are the trainings carried out?
 - 3.2 How are the trainings experienced by the farmers?
- **4 Outcomes:** What are the sustainability outcomes of the certification and related trainings?
 - 4.1 In what way have the certification and related trainings affected social sustainability, i.e. empowerment by social networks?
 - 4.2 In what way have the certification and related trainings affected economic sustainability?
 - 4.3 In what way have the certification and related trainings affected environmental sustainability in terms of farming practices and how is this reflected in the soil fertility?

1.5 Limitations

In this report we are not touching upon the issue of plantation or factory workers conditions in relation to certification. We have conducted interviews with smallholder farmers and Matthias (Iriaini Tea Factory manager) but we have not spoken to any officials within Fairtrade or RFA. In relation to the theoretical framework we have chosen to focus on Mainstream Sustainable Development and the political ecology's critique of it. As this is closely linked to both Governmentality and Agency we could have included these more in depth, but choose not to do so because of limitations in both data and working hours. Furthermore we do not take into account the matter of non-certified farms and farmers who do not comply with the standards of certification, as we were overall limited by time and distances making it difficult for us to work outside the Othaya town area.

2. Theoretical framework

2.1 Mainstream Sustainable Development

Sustainable Development is a concept that grew out of emerging discussions about the environment and economic growth during the 1970s (Castro 2004). In 1987 the United Nations' World Commission on Environment and Development published the Brundtland Report, which put the concept on the international agenda (Castro 2004). In this report sustainable development was defined as development that “meets the needs of the present without compromising the ability of future generations to meet theirs” (World Commission on Environment and Development, 1987, p. 8).

Adams (2009) argues that after this publication and some significant global environmental conferences¹ the term Sustainable Development became a part of every debate about environment and development. “The challenge of doing something about this [the issue of human impacts on global climate change] and other global issues (such as biodiversity depletion and pollution), while simultaneously tackling global inequality and poverty and not letting the wheels come off the world economy, is labelled as sustainable development.” (Adams 2009, p. 2). From this statement it is clear how the concept of sustainable development in common debate is including aspects of environmental, economic as well as social factors. This way of thinking about sustainable development is today considered “mainstream” and has been widely used by international environmental and developmental agencies (Lélé 1991). In this report, we are making a distinction between the terms “sustainable development” and “sustainability”. Waas et al. (2011) is stating that the two terms are most often used as synonyms for each other in public and academic debate. In this report, we will use the term “sustainable development” in the mainstream sense with point of departure in the Brundtland Report. In our distinction between the two terms we will align with arguments in the literature, which states that “sustainability” refers to an desirable goal, whereas “sustainable development” refers to the process in achieving it (Waas et al. 2011).

¹ United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 (the Rio Conference or the ‘Earth Summit’) and the World Summit on Sustainable Development in Johannesburg in 2002 (Adams 2009)

2.1.1 Critique of Mainstream Sustainable Development (MSD)

As a framework for this report, we will turn to the concepts of political ecology to discuss both our findings and data. The concept of mainstream sustainable development has been contested and critiqued in various ways within this framework and in this section we will look into different points on that. MSD has been often used and interpreted differently, which can create confusing or contradicting understandings of the concept (Adams 2009; Lélé 1991).

The mainstream approach has also been critiqued for depending too much on economic growth and focusing more on sustaining development rather than developing sustainability in an ecological sense (Castro 2004). It builds on the notion that it is possible to fight environmental degradation with economic growth, as, according to Castro (2004), poor people generally tend to degrade their environment more than other people. As argued by Robbins (2012) this has been proven wrong by many scientists, yet the argument still appears in many development reports and articles.

Following poststructuralist critiques of MSD “Development was—and continues to be for the most part—a top-down, ethnocentric, and technocratic approach” (Escobar in Castro 2004). Consequently, MSD has become depoliticized (Adams, 2009; Bryant, 1991). This is deemed problematic as the environment is inherently politicized, embedding power asymmetries among different actors. Many stakeholders that have been propagating sustainable development have tended to neglect any change that might threaten their power status. Hence, in order to realize a truly sustainable society, structural processes that hinder sustainable development should be understood (Sneddon et al. 2006) and, following a Marxist critique, radically changed (Bryant, 1991; Castro, 2004).

At last, critiques have been put forward that the nature and structure of the global discourse of sustainable development that has been advocated by i.e. governments, NGOs and multinationals do not seem to correspond with the perceptions and experiences at the local scale (Adger et al. 2001). In this report we will investigate the local perceptions of sustainability and thereby explore the tea farmers’ goals. We will investigate local indicators of social, environmental and economic sustainability to assess whether the conditions in the area can be deemed sustainable. We will discuss whether the relevant certifications schemes’ visions of

enforcing sustainable development in the area is realized and if they should be problematized based on the critiques of MSD.

2.2 Sustainable agriculture

As mentioned in the introduction, both the RFA and Fairtrade promote sustainable agriculture. As their understanding of sustainability is not further described, it is assumed that they use MSD. The discussion about the meaning of sustainable agriculture has been intense and has not yet ended.

It seems like it is difficult to make the perfect compromise between environmental and economic sustainability (Rees 2003). Economic sustainability in an agricultural setting can be simplified as having an income high enough to sustain yourself, your family and your farm now and in the future. Environmental sustainability is a little more complex. As seen in figure 3,

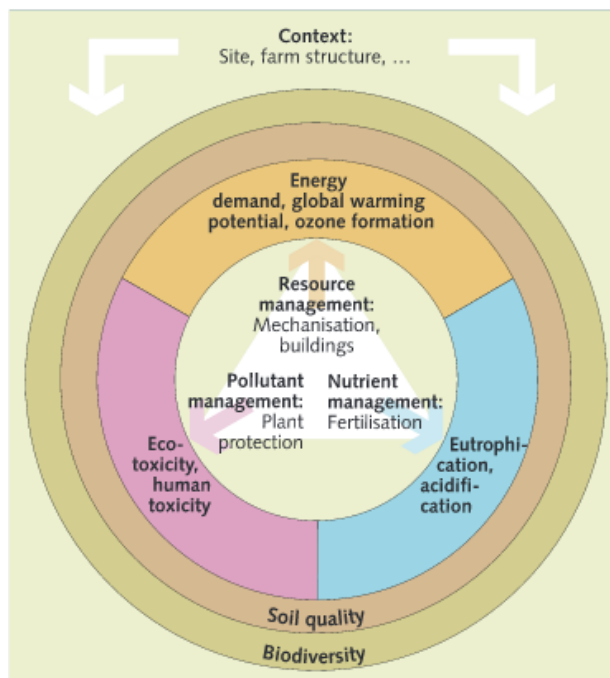


Figure 3: Environmental management triangle of farming systems (Nemecek et al. 2011).

management of resources, nutrients and pollutants are the three ways to achieve environmental sustainability in agriculture. An optimal management would result in reduced energy use, eutrophication², acidification and toxicity amongst others. Soil quality and biodiversity is interlinked with all the other parts and are therefore visualised as circles. In this report we have chosen to focus on soil fertility as an indicator of environmental sustainability, because that was possible to measure with natural science methods in our limited timeframe.

² The process in which excessive nutrients leads to algae growth and following deoxygenation

2.2.1 Soil quality

Soil quality is an important factor when it comes to sustainability. Soil fertility is defined as the soils ability to supply the plants with nutrients, whereas soil quality could also cover e.g. the water retention capacity and pH. Soil organic matter (SOM) is leading to a fertile soil for many reasons: it is increasing the cation exchange capacity (CEC) of the soil and therefore prevents leaching of nutrients. It also feeds the microorganisms in the soil so the decomposing processes goes faster and hence nutrients are faster made available for plant uptake. Furthermore SOM is increasing the water retention capacity so that the risk of drought is decreased.

The RFA promotes leaving of prunings in the field and use of organic fertilizers instead of mineral fertilizer to increase SOM. “The farm must give priority to organic fertilization using residues generated by the farm”(SAN 2010).

Organic fertilizers as e.g. manure could also increase the pH of the soil compared to mineral fertilizers who acidifies the soil. pH is related to soil fertility in the way that most

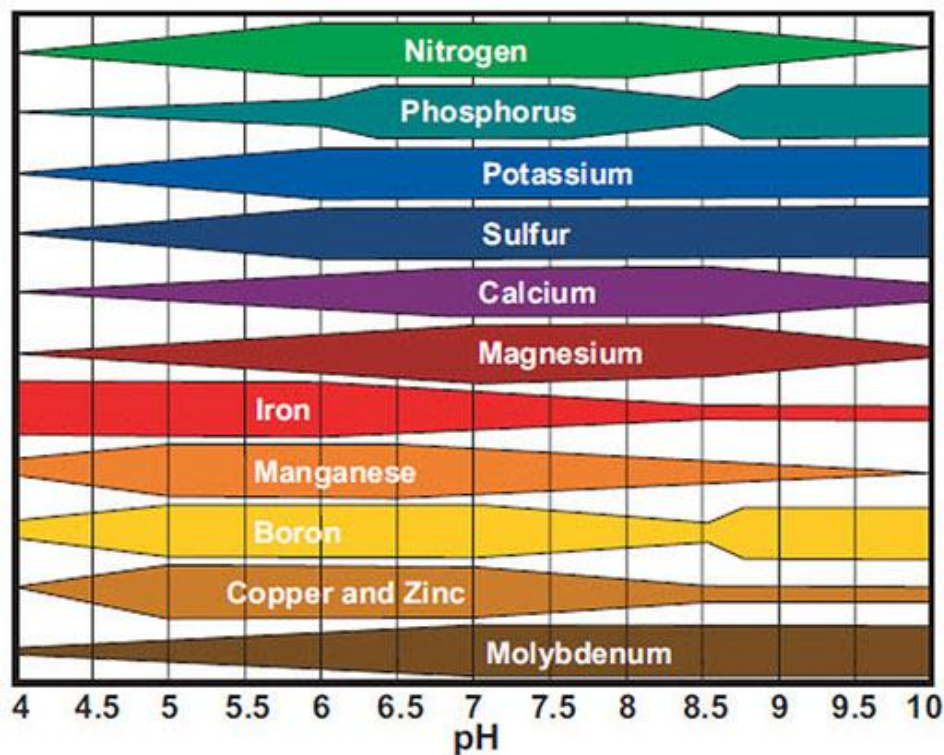


Figure 4: Nutrient availability as a function of pH (www.roughbros.com)

nutrients are plant available at a slightly acidic pH (figure 4). In tea growing a low pH in the range 4.5 to 5.4 is wanted, and therefore mineral fertilizers are often used. As seen in figure 4,

the pH should not go much below 4.5 before many nutrients become unavailable for plant uptake.

The logical reaction to nutrient deficiency is to apply more mineral fertilizer, and as this further acidifies the soil it could end up in a vicious circle.

Another argument why mineral fertilizers are less sustainable is that the production of synthetic nitrogen fertilizers has resulted in a major disturbance of the global N cycle (Rockström et al. 2009). By moving strongly bound N_2 from the atmosphere into our agricultural systems as reactive N, the ecosystems has been pushed out of balance. This interference is described by Rockström et al. (2009) as one of the three planetary boundaries that has been transgressed, where the two other is biodiversity loss and climate change.

3 Methods

During our fieldwork we collected data by using a range of methods both from social and natural science. Our key informants (factory manager and village elder) were chosen using purposeful, reference based selection. The farmers for SSI were found using purposeful, maximum variation sampling (Stern et al. 2004). We asked our guides to take us to a new area every day where we had not been before, that was delivering tea to Iriaini tea factory. See table 1 for an overview of our primary methods.

Table 1: Methods Overview

General overview of methods used in the fieldwork	Quantity
Grand Tour	1
Semistructured interviews with individuals	12
Semistructured interview with group	1
Focus Group Discussion	1
Questionnaires	29
Participant observation	2
Factory tour at Iriaini Tea Factory	1
Observations from home visit	1
Participatory mapping exercises	4
Soil sampling	4
Mapping of sampling sites	4
GPS Waypoints	10

Not all methods did contribute with significant data that we used in this rapport. The two following chapters gives an overview of the methods used that contributed with data included in the rapport.

Overview of the social science methods

3.1 Grand tour

Upon arrival in Othaya, we embarked on a ‘Grand Tour’ (Spradley 1979) with our two guides and our elder to familiarize ourselves with the area and to get an impression of the primary values and practices of the village. During the grand tour we passed several tea plots and visited a tea collection centre.

3.2 Semi structured Interviews (SSI)

A total of 12 semi-structured interviews (SSI) with individual informants (Casley & Kumar 1988; Spradley 1979) were carried out. We conducted one SSI with the factory manager at the Iriaini Tea Factory, 5 with FFS trained tea farmers, 5 with non-trained tea farmers and one with a woman who was not a tea farmer. Initially we also conducted a semi-structured group interview (Spradley 1979) with our two guides and our elder. We based our SSI’s on premade interview guides (Hastrup et al. 2011), which we updated during the fieldwork whenever we obtained new knowledge that we found important to investigate further.

3.3 Focus Group Discussion (FGD) and PRA methods

One focus group discussion was conducted with 6 farmers (including our elder), the chiefs’ assistant, one interpreter and three group members. The aim of the FGD was to get a deeper understanding of the local notions and perceptions of some of the concepts and practices we were investigating. During the discussion we experimented with different methods. With inspiration from Russel Bernards “Cultural Domain Analysis” (Bernard 2011), we conducted “Associations Exercises” which was an exercise where the participant should individually write down associations to a concept and discuss them in a group afterwards. We had three association games focusing on the concepts “Tea Farming”, “Certification” and “Sustainability”. We organized a “Ranking Exercise” where the group had to agree on and rank “Good Sustainable Practices”, and ended with a social mapmaking exercise (Mikkelsen 2005) focusing on knowledge sharing.



Figure 5: Ranking exercise during the FDG

3.4 Questionnaires

29 questionnaires (Bernard 2011) were distributed to farmers to get a more descriptive view of the area and to know more about their general experiences with certification and FFS. For this method we used cluster sampling (Stern et al. 2004). We went to two random collection centres, of the ones belonging to Iriaini and distributed questionnaires to as many people as possible.



Figure 6: Handing out the questionnaires and doing polaroides

3.5 Participant observation

Participant observation (Spradley 1979) was used two times during our fieldwork, once at a FFS training and once at Farmer A1's farm where we helped to pick tea. Participant observation was a great tool to get a general understanding of the practices of tea picking and to experience the dynamics, the community and the practicalities of a FFS teaching.

Overview of the natural science methods

3.6 Soil sampling

Soil samples were taken from the fields of 1 FFS trained and 3 untrained farmers. One composite sample was made from 8-9 soil auger samples taken from places distributed evenly in the field. The soil was then mixed thoroughly in a bucket before a final sample was taken. The soil was air-dried and then analysed for permanganate oxidisable carbon (pox), total C and total N as described in "Soil Analyses Method Description 2016". The results from pox were analyzed with a linear model in the statistical program R studio.



Figure 7: Taking soil samples at farmer A1

3.7 GPS

We used the GPS to make waypoints at the places where we did our primary methods in the area where we conducted the fieldwork. We did this to get an geographical overview of the area and to ensure that our methods and samplings were done in varying places (Figure 2).

4 Results and analysis

4.1 Standards

This section will look closer into the certification schemes; what characterizes them and how is the information being channelled down to farmers level. In doing this, results from SSIs with farmers, the factory manager and Francis will be included along with information retrieved from the websites of Fairtrade and RFA.

4.1.1. Characteristics of certification schemes including perceptions of sustainability

In this part, the certification schemes of Fairtrade and RFA and the way they perceive themselves as sustainable actors will be discussed. We will later use this in the discussion to assess whether or not the schemes are actually achieving what they promote.

4.1.1.1 Fairtrade

As described in the introduction, Fairtrade has emerged as a certification scheme along with the need for a more sustainable perspective on development. In general Fairtrade is well known and respected and according to one of their recent reports “The Fairtrade Mark is the most recognised ethical label globally, trusted by 8 out of 10 consumers” (Fairtrade b, 2015:8).

Stated on their website is Fairtrade international’s vision of ”a world in which all producers can enjoy secure and sustainable livelihoods, fulfil their potential and decide on the future.” (Fairtrade International, 2016) Relating this vision to their perception on sustainability they firmly believe that “...trade can be a fundamental driver of poverty reduction and greater sustainable development” (Fairtrade International 2016), the only criteria put up by the organization is that the management should be carried out with great equity and more transparency than seen elsewhere. Comparing this with the notion of MSD, this aligns very well, thus implying that Fairtrade is promoting MSD as something to achieve.

Furthermore Fairtrade just launched a campaign stating they in the next four years, will work closely with UN’s Sustainable Development Goals to achieve at least 7 of them in the quest for a more sustainable future (Fairtrade b:2015). Goal 2: “End hunger, achieve food security and

improved nutrition and promote sustainable agriculture” (Fairtrade b: 2015: 10) is something that interlinks very closely with our data, both according to sustainable agricultural practices but also in relation to food security. According to the report they are already enabling a lot of this through the standards and highlights the minimum price and premiums as a way of achieving economic sustainability (Fairtrade b, 2015). Another interesting point is that of access to markets, which Fairtrade promotes as already being invested in through the premiums.



Figure 8 - Fairtrade and SDG (Fairtrade b, 2015)

As seen on figure 8 above they moreover promote themselves as being able to enable easier access for farmers to markets and affordable credit.

4.1.1.2 Rainforest Alliance (RFA)

As stated in the introduction RFA was implemented in the tea sector of Kenya along with Fairtrade. It was launched in 1987 as a result of a conference held on the clearing of rainforest in favor of agriculture (Rainforest Alliance 2016). RFA’s overall vision can be summarized in following phrase: “We envision a world where people and planet prosper together.” (Rainforest Alliance 2016) Along with their vision they list 10 principles in corporation with SAN (Sustainable Agriculture Network) that all farmers who want to be certified have to comply with. As RFA is more environmentally based than Fairtrade the standards are more related to this yet among them are also those of workers condition and minimum pay.

Relating to farm practices SAN emphasises the use of both organic fertilizer and residue, they also comment on the overall vegetation of the farm saying: “The farm must use and expand

its use of vegetative ground cover to reduce erosion and improve soil fertility; structure and organic material content, as well as minimize the use of herbicides.” (SAN, 2010: 31). As we have done soil samples from four different farms, this is something that will be analyzed and discussed as well to assess whether or not the standards are being upheld and if they are sustainable.

4.2 Perceptions of sustainability and corresponding practices

In this section we will look into the local tea farmers perceive the concept of sustainability and which corresponding practices they find important. We chose to investigate the perception of the concept of ‘sustainability’ rather than ‘sustainable development’ based on the assumption that the farmers could relate more to this concept and we therefore expected to learn more about their everyday life concerns and practices. During the fieldwork, we quickly found out that there is no kikuyu word for sustainability or any local corresponding concept.

Through the SSIs we only encountered two farmers who could tell us that they had learned about the concept from the teachings in the FFS, but the majority of the farmers did not have a clear idea of the meaning of the word ‘sustainability’. Nevertheless the issue itself was not hard for them to talk about. From our FGD about the concept of sustainability we learned that perceptions of sustainability is a complex mixture of certain visions (e.g. Improved living standards or the ability to sustain the family), structures (e.g. Fair payments, prices and income, compliance to certification or access to knowledge through education), needs (e.g. food) and practices (e.g. Weeding, pruning, using good quality fertilizer and minimum use of chemicals) (figure 9).



Figure 9: Poster on Association Exercise on sustainability

During the discussion the farmers agreed that the main objective is to get a satisfying income, which can be achieved by doing good farming practices, so that the farmer can sustain the family. From our SSI's we learned that the majority of the tea farmers talked about sustainability as something you could achieve on an individual farm level. Some tea farmers extended the notion of sustainability to include the conditions of the local environment. By carrying out SSI's with both trained and non-trained tea farmers we found some significant differences in both perception and practices between the two groups.

4.2.1 Sustainability from the trained tea farmers point of view

We conducted 5 SSI's with farmers who were trained by the FFS. When asked about their perceptions of the concept, generally sustaining the family through producing higher yields and deriving a satisfying income was voiced as a primary goal, which needed to be reached in order to achieve sustainability. The main elements of sustainability are to keep the family safe, healthy, supplied with food, paying for the children's education and securing the future of the next generation. All of the trained farmers expressed a strong awareness of the link between their notions of the concept of sustainability and doing sustainable farming practices. Good farming practices were described by the majority of the trained farmers as practices that maintain the soil fertility and make the soil more productive.

Descriptions of concrete practices showed that the farmers focus on three core strategies: To treat the soil in a special way (e.g. using the right amount of fertilizer and using manure), to harvest from the bush in a special way (time and area systemized harvesting, pruning and plucking techniques) and to manage the farmland in a special way (using diversification strategies and minimum cutting down of trees to prevent soil erosion).

4.2.2 Sustainability from the non-trained tea farmers point of view

We conducted SSI's with 5 tea farmers who were not trained by FFS. Their notions of the concept of sustainability circled around some of the same main elements as the trained farmers. "First priority is having enough to eat. Second priority is being in good health. You have to have something in your pocket". (SSI, farmer A6). This focus on providing food, securing the income and health was continually voiced by the non-trained farmers that we interviewed.

Concerns for securing the future generations was mentioned several times, but this aspect was generally ranked second to meeting the day-to-day needs. Environmental concerns as planting trees to protect soil from erosion, using manure and not too much fertilizer was mentioned, but not emphasized to same extent as by the trained tea farmers. The focus was more on economic and social values than on environmental concerns. Their strategies to achieve this kind of sustainability were differing from the strategies of the trained farmers. Some of the farmers relied on off-farm work to sustain the income. Furthermore, diversification was a common strategy to provide food for the family – eating healthy is voiced as necessary to secure the health – and to enhance security against falling tea prices.

4.2.3 Sustainability from the Iriaini Tea Factory Manager's point of view

Through conducting a SSI with the factory manager of Iriaini tea factory, we came to know that from his point of view, there is a clear connection between international trade markets and sustainability. He took an economical and problematizing approach to the concept of sustainability. "In the highlands the farmers won't be able to grow much other crops for profit because of the soil, so they mostly stick to tea, which is making them even more dependent on the market prices. Overall, economic sustainability is the problem because the region still depends on the baseline price from Mombasa, that is controlled by the market prices." (SSI, Factory Manager). The factory manager is critical about these structures, because the farmers themselves are not able to control their income and "economic sustainability is not always met" (SSI, Factory Manager). Economic sustainability in this sense can be translated almost directly to securing the farmers a satisfying income, which is comparable to the other local perceptions of sustainability that we have identified. The factory manager's perceptions is primarily differing from the other local perceptions by focusing on national and international trade structures and seeing the market as the key to create sustainable conditions. "The market should be interested to look at the farmers, who should be able to sustain the production" (SSI, Factory Manager).

4.3 FFS Training

In this section we will present the results on how the FFS trainings are carried out and how the farmers experience them. The FFS trainings are run by the Iriaini Tea factory and supported by the KTDA. The factory has 3 extension officers who are concerned with the day to day interactions with farmers.

5 out of 10 interviewed farmers and 61% of our questionnaire respondents have been trained by FFS in respect to 5 out of 10 SSI informants and 39% of our questionnaire respondents³ that have not been trained. However, all the non-trained farmers have heard about the existence of FFS, either directly as their family members or neighbours had participated or indirectly.

³ The percentages in this section are based on known values

Two farmers indicated that they were informed about the FFS training at the collection centre. Participation was advised by extension officers and is voluntarily. For one respondent, the motivation to enrol was that she felt like this was the right project to gain more knowledge about conserving energy, planting trees and about tea in general.

The FFS trainings generally take place around the 44 tea collection centres in the area. The education is free, as KTDA is funding the trainings. The trainings are held twice a month and an average session lasts for two hours. The entire curriculum is to be completed in one year. A class consists of 25-30 farmers.

The mechanism behind the FFS is that the farmers who complete their curriculum successfully are encouraged to share their knowledge with other farmers. Based on participant observation at the FFS training and 2 SSI's, we found that the trained farmers are indeed passing on their information: "we are exchanging our information locally" (SSI Esther, 08/03). 4 out of 5 non-trained respondents confirm this picture and argue that they can easily access knowledge from the FFS trained farmers. One farmer indicated that trained farmers repeatedly advised him and that these farmers "are always with us" (SSI Joseph, 09/03). One respondent, whose husband has been trained by a FFS, indicated that even without being trained directly by the FFS, she feels confident about her capacity to train other farmers and consequently has trained two of her neighbors in the past. This knowledge sharing mechanism behind FFS has been described as beneficial to the factory as the communication with the farmers has improved without additional costs.

FFS engages farmers and trainers to work with a curriculum focusing on tea growing practices and other important matters. 75% of the curriculum is about tea practices and is compulsory, which leaves 25% open for the participants to incorporate what they would like to learn about. This part can include issues such as horticulture and health as mentioned by our respondents.

According to the factory manager, the key goal of the FFS trainings is to increase the yield through efficiency as Othaya experiences a shortage of land. This has been confirmed by our observations at the FFS training where there was a continued focus on improved production. Minimal use of chemicals and proper use of fertilizer is promoted, which has made the farmers

more knowledgeable about how to maintain soil fertility. Applying the right fertilizers came up as one of the most important practices non-trained farmers have learned from others. Above that, FFS encourages farmers to diversify and grow subsistence crops. This has been mentioned by farmers as an important learning outcome. Furthermore, farmers are taught on how often to pluck tea to get the maximum amount and on which tea leaves are best to pluck. The trained as well as the non-trained respondents indicated that they know now to prune their and to pick tea 4 times a month instead of 2. Lastly, FFS engages farmers to stay together even after the trainings have ended. This group forming is for example encouraged when it comes to financial management. Observations confirm the very practical nature of FFS, where the facilitator carried out specific advice on for example tea spacing. Also, one participant stepped forward to discuss her results of the field trials, indicating that participants already practice what they are being taught.

In order to investigate whether FFS graduates are truly carrying out the practices as they have been taught, they are being monitored. Before graduation there is an external assessor, i.e. Unilever, who carries out a class level assessment and after graduation, farmers are trained yearly to refresh their knowledge. There is also a very bottom up auditing system in place, as farmers are trained to monitor other farmers.

Overall, our respondents have been very pleased with the FFSs and indicated that the trainings lived up to their expectations: “I am very grateful for FFS” (SSI Francesca, 10/03). They experience that the teacher engages the farmers in the discussion. This relates to our FFS observation that the participants and the facilitator seemed very motivated and engaged. The participants seemed eager to take notes and the facilitator was very expressive. This positive atmosphere was further stimulated by alternating informative talks with energizers and by using slogans such as “FFS: Forever, backwards, never!” and “highlife FFS”. Yet, we also observed that not many questions were posed by the participants and that the facilitator is in fact explaining the farmers and asking them questions that can be answered collectively in one word.

When inquiring about the barriers to attend FFS trainings, three different answers arose. One man explained that he never attended a training as he needed to take care of his grandfather who had fallen sick. Another man mentioned time pressure as the factor preventing him from joining

the programme, but that he aims to focus more on farming and education about farming when he will retire. At last, one woman mentions that she is willing to learn but that she is prevented by the physical distance to the training sites. She mentions that FFS should get down to the ‘grassroot’ level (SSI Veronica, 08/03). This seems to be contradicting what we have heard at the FFS training, namely that farmers could collectively discuss which location and time would be most suitable for them.

4.4 Outcome

4.4.1 Social sustainability

As described in the introduction, a goal of Fairtrade is to make farmers organize in groups for knowledge sharing and empowerment. A tool to reach this goal is the FFS. All the FFS trained farmers we interviewed were part of a group with other farmers. It seems like groups are also normal amongst non-trained farmers, only one of the interviewed farmers was not part of a group. The majority of the farmers were part of farming related groups and 4 farmers were members of so called “merry go round”, a group where money is collected and given out to members in need. In the questionnaire it was shown that the trained farmers tend to engage more in social groups (Figure 10)

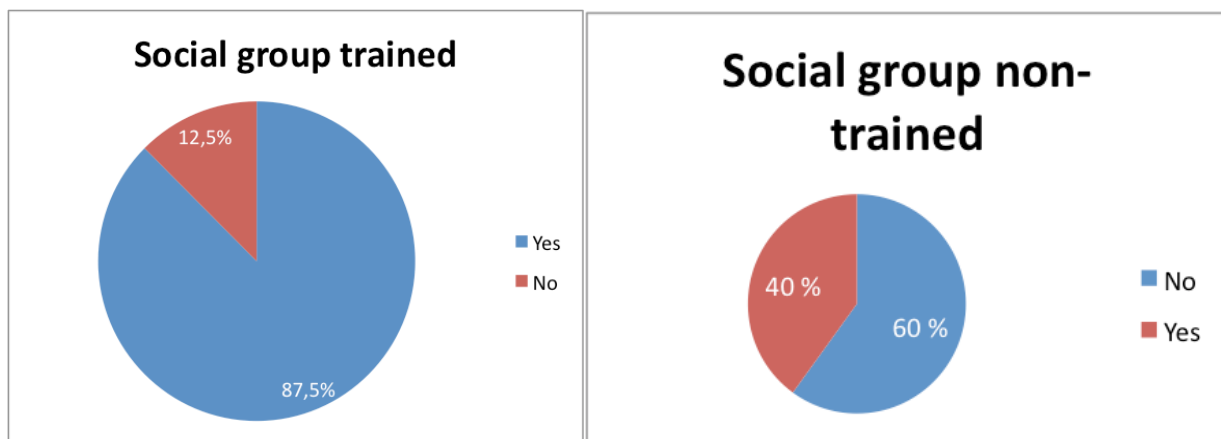


Figure 10: Part of social groups, trained / non trained farmers

Diversification of the production has been mentioned as a strategy FFS promotes to ensure food security⁴. All the interviewed farmers asked about diversification and 100% of the questionnaire respondents answered that they did subsistence farming.

4.4.2. Economic sustainability

Higher yield is one of the most important outcomes of certification and the related FFS's. This was experienced by a majority of the interviewed farmers. Amongst the non-trained farmers 3 farmers experienced higher yields after certification, whereas two farmers had not experienced higher yields. Of the FFS trained farmers 4 out of 5 had experienced higher yields, while one had experienced no change in yields the last 3 years. However this farmer thought FFS was good and resulted in better pay. As seen in figure 11 the questionnaires also revealed that all the farmers except one had experienced higher or much higher yields after certification.

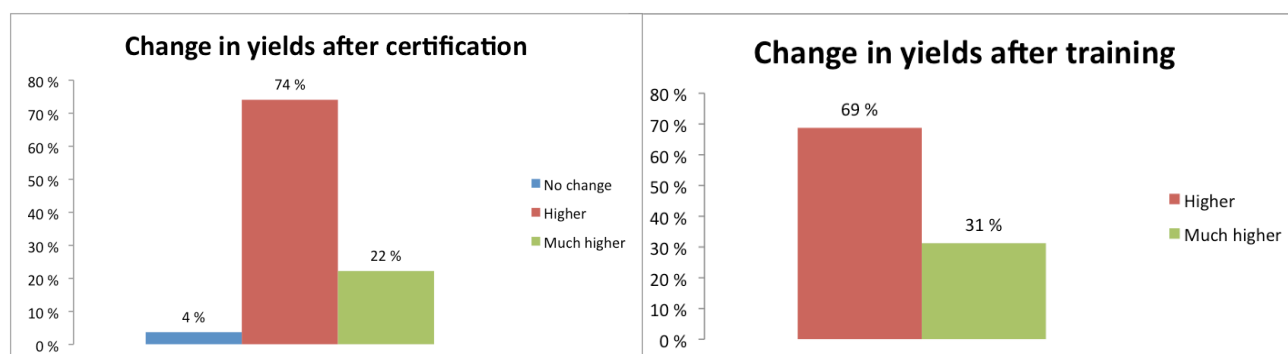


Figure 11 : Questionnaire answers for change in yields after certification and training

As described in the introduction one of the core principles of Fairtrade is to give a “fair price” to the farmers, either in the form of a minimum wage or a premium price (Fairtrade 2015). In Othaya there is no minimum wage, but they do get a premium of about 34 ksh pr kg that is paid once a year (SSI farmer A2). 4 out of 10 of the interviewed farmers said that they experienced

⁴ Situation with access to sufficient, safe and, nutritious food to maintain a healthy and active life (Fairtrade 2015).

higher prices after getting certified, while one farmer said the prices had gone down. As seen in figure 12 the questionnaire data showed a very positive development in prices after certification.

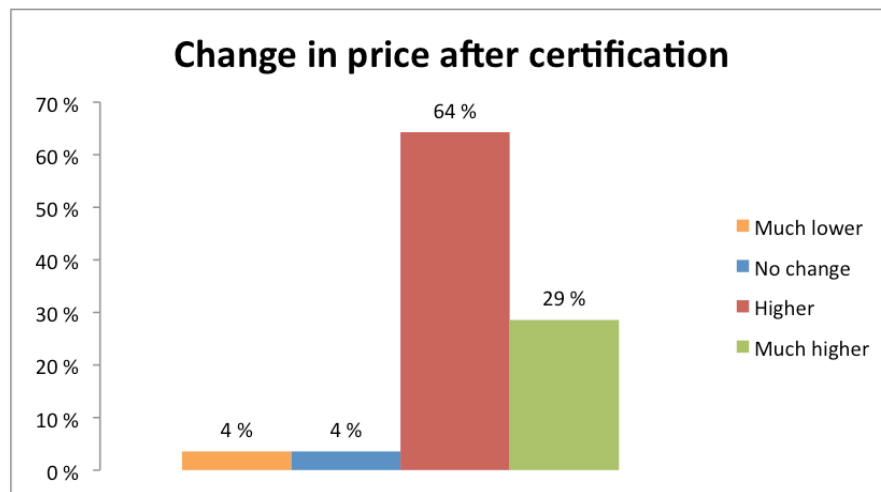


Figure 12: Questionnaire answer to change in price after certification

In the interviews there were however many farmers that described the income as too low to live from, two even described it as impossible. Others said that the fluctuations in market prices were problematic “ It is as a challenge that the tea prices are fluctuating because the prices sometimes cannot meet the expectations” (SSI farmer A3). It was also stated by our village elder that “Most farmers cannot sustain themselves with only tea.”

The last indicator we investigated was insurance. All the informants said that they were not insured, except one who had both health and death insurance through the factory.

4.4.3 Environmental Sustainability

The farmers were asked about their farming practices and how they had changed after certification. None of the interviewed farmers used pesticides or herbicides. It was explained that the use of pesticides is unnecessary because there are few pests and diseases on tea. Herbicides are not needed as the tea bush suppresses weeds with its shade.

One trained and one untrained mentioned that they leave prunings in the field. Two trained and two non-trained mentioned use of manure or other organic fertilizers. It seems that many farmers would like to use manure and think it is good for the soil fertility, but they do not

have enough land for livestock. An issue a farmer mentions about applying of manure is that “Tea farming demands a lot of manure but not everyone has cattle. People in that situation are forced to wait for a delivery of fertilizer from the Iriaini Factory” (SSI farmer A10). The answers from the questionnaire showed that many different fertilizers were used and the results are shown in figure 13. The most striking result might be that every single farmer uses mineral fertilizer. One reason for this is that KTDA is subsidizing mineral fertilizers, so the farmers can buy it cheap through the factory.

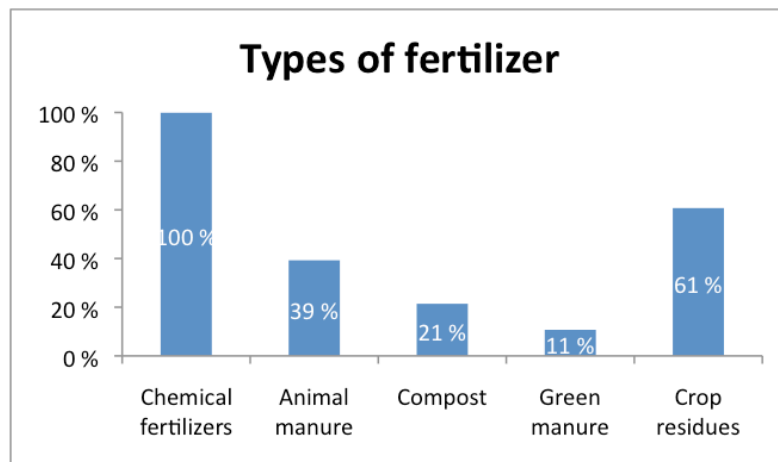


Figure 13: Types of fertilizer used by the respondents

4.4.3.1 Soil samples

Soil samples were carried out on 4 farms. A.1, A.2, A.3 and A.4. A2 was trained by FFS and the others were not. All the farmers were interviewed about their farming practices in a SSI.

Table 2: Farming information from SSI's

	Years of tea farming	Size of farm	Size of tea plot	FFS trained	NPK for tea	Manure for tea	g NPK per tea bush
A1	16	3.9 acre	1 acre, 2500 bushes	No	200 kg	No	80
A2	34	2.2 acres	1.5 acres 3000 bushes	Yes	250 kg	No	83
A3	10	1.5 acres	0.5 acres (1500)	No	150 kg	No	100
A4	>20	3 acres	3000 bushes	No	250 kg	No	83

Table 3: Soil analysis results

	Mn ox C mg kg ⁻¹	std	P value	C%	N%	C:N	pH
A.1	1237.5	135	2.84 *10 ⁻¹²	3.90	0.39	100.494	4.8
A.2	756	170.37	3.24 *10 ⁻⁵	4.74	0.39	120.205	4.5
A.3	630	63.64	2.32 *10 ⁻⁶	2.94	0.29	100.135	4.3
A.4	1350	0	0.192	6.70	0.49	137.863	4.5

The aim of the soil sampling was to determine whether there was a correlation between FFS training and the soil fertility on tea farms. The soil fertility is here simplified to C content and N content.

It can be seen in table 3 that soil A.4 both has the highest total C content, the highest Pox C content and the highest N content. In the middle we find A.1 and A.2; A1. with the highest Pox and A.2 with the highest total C and they both have the same total N. The soil with the lowest C and N content is A.3 All the farms have significantly different pox values except A4, which is not significantly different from A1.

Overall it was seen that Farmer A.4. has the most fertile soil and A.2 is following. A.2 is FFS trained and farmer A.4 explained in the interview that she was told about FFS practices by her son in law. This might be the reason why she turns out to have the most fertile soil, but it is not clear. The two non-trained farmers A.1 and A.3 had the lowest total C and N. Farmer A.3 even explained that he has not changed his practices after certification, which might be the reason for the low fertility.

A surprising result is the active pox carbon on farm A.1 that is not significantly different from the highest pox value found on farm A.4. The total C content in the soil of farm A.1 is however the second lowest. In the interview farmer A.1 explained that she used many composted crop residues in her tea plot, and this might explain the high amount of active C. The pH on this farm is also the highest, and this could be because of the compost use. As can be seen from table 2 and 3, there is a clear correlation between use of mineral fertilizer and pH. Farmer A.1 uses the lowest amount of mineral fertilizer and has the highest pH, farmer A.2 and A.4 use the same amount and have the same pH and farm A.3 use most and have the lowest pH. When comparing

to figure 4 in the theory section it can be seen that this farmer is likely to experience nutrient deficiencies.



Figure 14: Questionnaire answers to change in soil fertility after certification

As shown in figure 14 all except one of the farmers answered in the questionnaire that they had experienced higher or much higher soil fertility after certification. The answers from the trained farmers show even higher soil fertility. Even though changes in soil carbon happen very slowly, this might be an indication that the new practices lead to higher C levels.

5 Discussion

5.1 Methodology

When working with such different methods throughout the fieldwork we encountered several challenges. In this section we will critically discuss our methods in relation to the important findings thus assessing what could be done differently in future fieldwork.

Firstly there was the issue of knowledge relating to what we knew before going to Othaya and what we actually experienced while working there. An example of a critical issue was to phrase the questions of the questionnaire without knowing what we would actually encounter and what the farmers would be able to answer. Even though we had our questionnaire revised by one of our guides, many of the phrasing and options we had left in the actual sheets were incorrect or wrongly put. When filling them out we experienced that some respondents left whole sections out. Because we did not have time to go through the answers in the field, we first became aware of this after we returned to Denmark.

5.1.1 Interview guides

The farmers were asked what they think is the most important sustainable practices and how their practices changed after certification. This was interesting because we could then get their point of view on what is sustainable. The farmers on the sampled farms should however also be asked directly if they e.g. left the pruning in the field, even if they did not mentioned it themselves, because it was very important for our analysis. This was not clearly communicated amongst the group members, as we had to change our strategy in the middle of the fieldwork because all the farmers were certified.

5.1.2 Interpreters

The translators did a good job in general, but we had some interview technical problems that could have been avoided if we explained better from the start. E.g. the questions about sustainability were challenging. As we found out in the first days, there were no Kikuyu name for sustainability and often the translators used the certifications schemes as examples to explain it. This might have led to biased answers.

5.1.3 The issue of ‘privacy’

Several of the interviews conducted were held in open spaces such as tea collection centres, and this could have influenced the information we got. Especially when interviewing farmers at the collection centre a lot of attentions from other people walking by led to several occasions where other farmers interfered the interviews and started answering the questions. We experienced one time that the trainer of the farmer we were interviewing stopped by, which undoubtedly led to a less critical view of FFS when describing it to us.

5.2 Discussion: Achieving sustainability locally: Social, economical and environmental aspects

Based on the presentation of our findings in the previous section, we can now identify four main stakeholders that greatly influence the local conditions of tea farming in Othaya. These are the tea farmers, the FFS, the Factory and the certification schemes. We have investigated local indicators of social, environmental and economic sustainability and we will now assess whether the conditions in the area can be deemed sustainable. We will relate this to a discussion of whether the relevant certifications schemes’ visions of enforcing sustainable development in the area are realized, how they are enforced and how they align with local perceptions of sustainability.

5.2.1 Social groups and diversification strategies

By investigating social sustainability we found that an important issue related to FFS is that of social groups. On the basis of the findings, we argue that farmers that have been trained by FFS are more often engaged in social groups than non-trained farmers. This is in line with what has been promoted by FFS and indicates that Fairtrade succeeds in their act 3.4 in the Fairtrade climate standard on freedom of association and collective bargaining (Fairtrade 2015).

Yet, when asking farmers about whether they perceive tea farming to be a social practice, they argue that *“everyone is on their own”*. This could be seen as an indicator of internal competitiveness between farmers, possibly indicating contested social relationships

Whereas informal groups are promoted, labour unions are discouraged. The factory manager states that labour unions are *“unsustainable”*, as these create unrealistic expectations

that the factory cannot live up to. This finding is in contrast with Fairtrade's act 3.4 (Fairtrade 2015a).

Another aspect of social sustainability that we found significant was how common the strategy of diversification appears to be. For instance 100% of the farmers are supplementing their tea production with subsistence farming. FFS is promoting this, which is in alignment with the farmers' perception that diversification is an important strategy to sustain the family with food, secure their health and to some extent also to support the income. Therewith, diversification strategies could also support economic sustainability in the area. We argue that in general diversification is supporting more sustainable living conditions for the farmers and their families in the area.

5.2.2 Higher yields, income too low to live from and financial insurance

As mentioned earlier, a very important point made by Fairtrade is that they believe that trade is the way to go if poverty should be reduced and sustainable development should be met. Derived from the findings on economic sustainability we can state that yields have gone up after becoming certified and trained due to improved practices. Even though 93 % of the farmers experienced higher prices after certification and the farmers get an annual bonus, many farmers perceive their economic situation as poor and their income as too low to live from. Therefore the economic sustainability can be considered weak. From our data it seems like Fairtrade's goal of *"a more secure and stable income for smallholder farmers"* is not fully met. When it comes to access to credit and insurance, FFS promotes the forming of informal financial groups. Many farmers are part of some sort of informal financial group such as a merry-go-round or table-banking group. Through these groups people have experienced improved access to credit but they do not perceive themselves to be insured. Although a Fairtrade insurance scheme exists (FARM, 2014), it has not been implemented in the Othaya region and the informal groups are not resulting in a fully sustainable economic situation.

5.2.3 Compliance with promoted practices

Our results show that there are very high levels of compliance when looking into practices promoted as sustainable. None of the farmers use pesticides and over half of them used organic

fertilizers in addition to mineral fertilizers. Pruning and smart picking systems were implemented by the majority and most have an impression of improved soil fertility.

In an environmental point of view it could be surprising that an RFA certified factory is supplying cheap mineral fertilizer to their farmers and that 100% of them are using it. On the other hand 40-60% of the world's food would not be produced without mineral fertilizers (Roberts 2009). It was also a clear message from our data that there was not enough land to produce sufficient organic fertilizer as e.g. manure. The alternative to mineral fertilizer would be to expand the farmland on the cost of natural ecosystems to be able to be self sufficient with organic fertilizers. As RFA's main vision is to protect the rainforest, this would be an even more unsustainable alternative.

5.2.4 Assessing Sustainability among tea farmers in Othaya

In this discussion we have shown how the social and environmental sustainability can be assessed as very positive when looking into the indicators found in this fieldwork. Nevertheless we have highlighted some significant weaknesses (competitiveness, depoliticizing, lack of knowledge and critique of advised farming practices concerning use of chemical fertilizer). For the economic part our collected data paints a negative picture of unsustainable local conditions in the area. Overall, in assessing whether the conditions in tea farming in Othaya can be deemed sustainable, we must take the highlighted weaknesses into consideration. Through our research we have encountered several different perceptions of sustainability. These perceptions have shown us that the farmers, the factory manager and the certification schemes are not viewing sustainability in the same way. The farmer's main focus is on sustaining the family and the farm, whereas the factory manager takes a very economical approach and focus mainly on the influence of the international market prices on the local condition. At the same time the visions promoted in the standards of the certification schemes are taking point of departure in a MSD approach. This means that there is a clash between the stakeholders' perceptions of e.g. the ways to create sustainable conditions. This results in a situation where the certification schemes' goals of achieving sustainable conditions through MSD (e.g. by securing a premium price) would not meet the sustainability goal of the farmers (to be able to sustain the family on the tea income) or the factory (to secure higher market prices for the product). Based on these differences we argue

that the certifications schemes can be criticised as actually not achieving MSD, because the local notions of sustainability are not met.

5.2.5 Enforcing visions of sustainability

This discrepancy between the promises of Fairtrade and RFA and the unsustainable outcomes in the eyes of the local farmers can be understood through the critiques from political ecology on MSD. *''Development is about control, both of nature and people''* (Adams, 2009. p.191). This is evident in the way that the four main stakeholders are differently related to another, exposing varying degrees of control over another.

Whereas Fairtrade certification has been optional for the Iriaini Tea factory, it has been a requirement from the KTDA to become RFA certified. Also, there is a general feeling in the management of the Iriaini factory that they cannot ensure economic sustainability for the farmers as long as they are bound to the low world market prices decided at the Mombasa auction.

On another level, the certification schemes and the Iriaini tea factory are cooperating to ensure the channelling of information to the farm level through the FFS which, following the line of Foucault's concept of governmentality⁵ (Foucault [1978] 2008), can be understood as a way of governing the farmers. Farmers are taught about the certification standards and are educated to discipline themselves and other farmers by passing on their knowledge and by forming informal groups. Yet, there is some room for manoeuvre for farmers as 25% of the curriculum is left open for farmers' own interests and as participation is voluntarily. This is not the case for certification where farmers have been told to become certified and therewith adopt new practices that will lead to increased sustainability.

Moreover, monitoring systems have been put in place to ensure that the farmers comply to the rules that have been imposed on them. Not only are farmers to be monitored by officials, farmers are also taught to monitor each other. Yet, when asking farmers about their experiences with the monitoring system, the picture arises that officials seldom come to control the farmers, but that the farmers ensure themselves and each other to comply to the standards.

⁵ Governmentality is a concept focusing on how certain institutions, procedures, analyses, reflections, calculations and tactics, makes it possible to enforce certain complex forms of power over subjects by disciplining them, with the purpose of optimizing their living conditions (Foucault [1978] 2008).

On basis of our assessment of the investigated indicators of sustainability, and the discrepancy between the local and certification schemes' perceptions of sustainability we cannot conclude that the conditions can be categorized as sustainable, in spite of the efforts of the certification schemes.

6 Conclusion

The aim of this report was to examine how the visions of the certification schemes and related FFS trainings were reflected in the practices and general sustainability of tea farming in Othaya. The report identifies the certifications schemes, the Iriaini Tea Factory, Farmer Field Schools and the tea farmers, as main stakeholders who are especially influential when assessing the local sustainability. The rapport argues that the stakeholders represents different structural positions and perceptions of sustainability, subsequently leading to a mismatch in how they see goals, strategies, challenges and outcomes in relation to sustainability. This report have showed how the farmers within our area are certified by Fairtrade and Rainforest Alliance which both claim to promote sustainability. Additionally this report has argued that knowledge of the standards and the related practices were successfully communicated to the farmers through the FFS.

This report has assessed the sustainability of tea farming by investigating environmental, social and economic indicators of sustainability. Based on soil analysis and inquiries into farming practices the report concludes, that environmental sustainability was achieved. Based on inquiries about promotion of social groups, knowledge sharing, financial groups and insurance the report concludes, that social sustainability is not fully achieved. Based on inquires about yields, payments and experiences of not being able to sustain the families the report concludes, that economic sustainability is not met.

The report concludes, that sustainability in general and economic sustainability in particular in the area can be problematized, as most of the farmers included in the research did not consider the income from tea production satisfying in terms of sustaining themselves and their families. This contradicts the overall vision of Fairtrade and Rainforest Alliance, and on this basis we have posed a critique of the overall visions behind mainstream sustainable development as not achieving sustainability locally.

7 Perspectivation

As discussed in the previous section Fairtrade and RFA are not always meeting their goals of sustainable development on the farmer level and we thus argue that the farmers are not completely sustainable and also have contradicting perceptions on it.

A fundamental problem becomes visible when looking at the critique of MSD. As Fairtrade promotes trade as a way to achieve sustainable development they thus argue that economic growth can work as a tool to do this. This links very closely to the argument presented earlier saying poor people tend to degrade their environment and therefore the only way to avoid this is to lift them out of poverty through trade. But as argued earlier this is a false premise and in the end economic growth will never ensure ecological sustainability.

Relating this to broader discussions on the subject especially Fairtrade is being criticised widely, one of the critiques building on the concept political consumerism. As Goodman (2004) argues “Fair trade attempts to reconnect producers and consumers economically, politically, and psychologically through the creation of a transnational moral economy.” (Goodman, 2004:347) and he thereby introduces the issue of using consumption to promote sustainability. Consumption is becoming a way for consumers of developed countries to “...’make a difference’” (Bryant & Goodman, 2004:347) but as we have shown, the difference on the farmer level might not be as big as the consumer imagines.

To use green consumption as a way to achieve sustainability is moreover problematic because “...the consumption of green goods in no way frees them from the complex coercions of global trade. Nor has it slowed the level of consumption overall” (Robbins, 2012: 226) and thus it could be argued that sustainability will be hard to achieve if consumption levels never decline.

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