
Impacts of private sustainability certification on practices of tea production in Tamilnadu, India

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Abstract: Private standards increasingly play a major role in creating sustainable practices in international trade relations. This paper presents the results of an impact study in tea produced for export in India and it compares a group of certified tea estates with non-certified farms. It aims to determine changes in time and differences between the two groups. The study reveals differences between certified and non-certified tea suppliers. These are partly rooted in a longer history of the certified farmers. The study shows that certified farms have a better economic performance and produce ecological and social benefits. Still their practices face some major challenges for the near future. The study also reveals that a part of the control group farms may be receptive for a move towards complying with standards set in the international market. It also discusses limitations of what private standards can achieve, especially in the area of socio-economic impact and living wages.

Keywords: certification; value chain; tea; India; sustainable production; private standards; voluntary sustainability standards.

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1 Introduction

Sustainable development is about handing on a healthy planet with decent living conditions for all to next generations (WCED, 1987; Hueting and Reijnders, 1998; Robinson, 2004; Hopwood, et al., 2005). In the recently adopted (United Nations, 2012) 'Ten years framework on sustainable consumption and production' this includes supporting sustainable, inclusive and equitable global growth, poverty eradication and shared prosperity; creation of new economic opportunities for especially developing countries and decent work for all and addresses basic needs and brings a better quality of life (UN DESA, 2004; UN Millennium Ecosystem Assessment, 2005; UN DESA and UNEP, 2010; UNDP, 2010; UN Population Division, 2010; UNEP, 2011; Fischer-Kowalski and Swilling, 2011). Achieving these goals is especially challenging in product markets dominated by global trade. One of these is the tea market.

The drinking of tea has a very long history going back toward China and India almost five millennia ago, while being introduced around five centuries ago in Europe and four centuries ago in North America (Clay, 2004). With production being fairly concentrated in four countries (China, India, Sri Lanka and Kenya producing 3/4th of all tea) and Asian consumers being the largest consumer group, still almost half of the produced tea is traded internationally [SOMO, (2008), p.18]. Tea production has been growing during the last two decades averagely with 2.3% per year, while consumption grew slightly slower. In the global market this has put prices under pressure, affecting the livelihood of larger numbers of workers dependent on tea farming (SOMO, 2008).

In India tea farming uses more than 500.000 ha with the largest concentrations in the North-east (Assam, West-Bengal) and the South (Tamilnadu and Kerala), representing more than 90% of the tea farm land, with around 40,000 tea estates. While being the largest tea producer, India exports only 1/5th of the tea produced to other parts of the world (Ministry of Environment and Forests, 2007).

At the European and American side, consumers make purchase choices among a vast variety of alternatives in the shop displays, while mostly being deprived of knowing where these products were produced or under what conditions. High-profile cases of contaminated food, child labour, animal welfare problems, and the collapse of fisheries and other resources have raised consumer awareness and concern about how products are actually made or harvested (Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012). Various environmental and development NGOs have been campaigning on such issues in the last decades (Vermeulen and Seuring 2009; Vermeulen, 2015). Apart from the perspective of consumers, producer and retail companies also face challenges concerning matters of supply (Potts et al., 2014). They face two main challenges. First is maintaining the long-term availability of supplies, which are threatened by diminishing quality and a rural exodus of farm workers. The second challenge is related to the quality of supplies, which is essential to maintain their brand and reputation. Major global brands have been called into question concerning their practices during the various phases of the supply chain (Muller et al., 2009, 2012; Braga and Ionescu-Somers, 2011).

Selling certified products is often presented as part of the solution in response to these challenges (Vermeulen and Ras, 2006; Ras and Vermeulen, 2009). Like in other sectors, also in the tea sector we have seen a recent and rapid emergence and growth of private certification approaches (Jay, 2008; SOMO, 2008; IDH, 2010, 2011a, 2011b; Vermeulen, 2010; Vermeulen and Kok, 2012, Vermeulen, 2015). According to the standard database

of such standards, provided by the WTO International Trade Centre, 33 different certification standards were available in 2014, which also claim to be applicable for Indian tea producers (WTO-ITC,2014). Some of these standards focus mostly on social sustainability issues, while others mostly address environmental issues. Some of them are widely applicable in any industry (like GRI). More recently various more integrated certification standards have emerged, addressing the triple-P of sustainable production and consumption: improving both people, planet and prosperity aspects (European Commission, 2002; Hammond, 2006; Auld, 2010).

However, there has been criticism as to whether they are really better for the environment, for people and communities, and if they can actually catalyze more sustainable production and consumption (Ras and Vermeulen, 2012). Recently various meta-evaluations of these forms of self-regulation in the international trade market have been published (Potts et al., 2010, 2014; Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012; COSA, 2013). The key question in these reports is to what extent such forms of self-regulation are able to create the promised economic, environmental and social impacts at the supply side. Despite a growing number of overview studies on these topics the body of evidence still remains fairly weak (Vermeulen et al., 2010, Potts et al., 2010, 2014; Blackman and Rivera, 2010; Alvarez and von Hagen, 2011; Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012; von Hagen and Alvarez, 2011, van Oorschot et al., 2014; Kessler et al., 2012). In the meta-evaluation by resolve it was concluded that “there are few large-scale qualitative and quantitative studies documenting outcomes and impacts sufficient to determine what effects occurred and whether they were attributable to certification. In addition, very little is known about the durability of impacts” [Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, (2012), p.ES-7]. Also in the area of tea production some studies are available, but their number, scope and comparability remain weak.

In this article we present results of a study in response to these criticisms. In this study the impacts of various sustainability standards applied in one of the main tea production regions in India have been analysed by applying a close to ‘counterfactual’ approach: comparing certified and non-certified tea producers in one region, including a perspective on development in time.

The research question for this study has been:

- To what extent does the application of voluntary sustainable tea certification for export in India result in creating the intended outputs and outcomes in terms of improved sustainability at tea estates and their communities?

In this article we will first briefly review the existing literature on impacts of sustainability certification for tea, then discuss our research approach. After that we present the main results of the study and discuss the differences found between the certified and non-certified tea producers. Finally we will discuss the implications of these experiences.

2 Sustainability issues in tea production

The production of tea, which is grown on plantations and smallholder farms across China, India, Sri Lanka, Kenya and Indonesia, faces a broad variety of sustainability

challenges, depicted in Table 1. The development of tea estates is often accompanied by the conversion of highly biodiverse habitats (Clay, 2004; Jay, 2008), while the use of firewood for drying the tea leaves leads to widespread deforestation (Bedford et al., 2002; SOMO, 2008). The intensive monoculture farming methods used for tea cultivation are often accompanied by soil degradation (Senapati et al., 2002; Nikoloyuk, 2009). Moreover, abundant and indiscriminate use of agrochemicals poses a serious threat to water quality as well as the health of farmers and their workers (Kadavil 2007; IDH, 2010).

Table 1 Main sustainability issues in the tea sector

<i>Economic issues</i>	<i>Social issues</i>	<i>Environmental issues</i>
Low auction prices [1, 2, 3, 5, 6]	Lack of basic facilities [1, 3, 5, 7, 9]	Deforestation [1, 2, 3, 7, 8, 9, 11]
Low wage levels of workers [1, 3, 5, 6, 13]	Discrimination of workers [1, 3, 5, 6, 8, 13]	Biodiversity loss [1, 3, 9, 11, 12]
Unequal market power [1, 3, 5, 6]	Poor working conditions [1, 3, 8, 9, 13]	Abundant pesticide use [1, 2, 3, 4, 11]
Vulnerability of smallholders [3, 5, 6, 7]	Endemic diseases [1, 3, 8, 10]	Habitat conversion [1, 2, 3, 5, 8]
High share of seasonal workers [1, 6]	Use of child labour [1, 7, 8, 9, 13]	Soil degradation [1, 3, 5, 6, 11]
Increasing production costs [2, 6]	Low quality of housing [1, 5, 6]	Water pollution [1, 5]
	Lack of title deeds (small farms) [1, 3, 6, 13]	
	Absent or ineffective trade unions [1, 5]	

Source: [1] SOMO (2008), [2] Kadavil (2007), [3] IDH (2010), [4] Oxfam (2002), [5] IDH (2011a), [6] TCC (2010), [7] Bedford et al. (2002), [8] Jay (2008), [9] Nikoloyuk (2009), [10] Sivaram (1996), [11] Clay (2004), [12] Senapati et al. (2002) and [13] Bedford et al. (2002)

In some cases pesticides are applied without proper protection, sanitary conditions are below standard and workers fall prey to respiratory and waterborne diseases (Jay, 2008; Sivaram, 1996). On many plantations, there is a lack of basic facilities: houses are of low quality and drinking water, healthcare and electricity are insufficient (SOMO, 2008; IDH, 2011a). Discrimination along both gender and ethnic lines is a recurring issue (TCC, 2010). All tea-producing countries face problems with child labour, both on plantations and among smallholders (Bedford et al., 2002; Nikoloyuk, 2009).

In the past three decades real primary producer prices have fallen dramatically, putting serious pressure on workers' wages and the livelihoods of smallholder farmers. Many tea farmers earn less than a living wage (TCC, 2010; IDH, 2010). With most market power in the hands of a few multinational tea packers and brokers and limited farmer organisation, small tea estate managers are often price takers (IDH, 2011a; Kadavil, 2007). On plantations, the majority of workers are seasonal, which often means they receive lower wages, have less rights and fewer social benefits than the smaller group of permanent workers on the tea estate (SOMO, 2008).

Table 2 Overview of studies on sustainability impacts of tea certification

<i>Type of study</i>	<i>Reference (certification, country)</i>
Empirical (quantitative, with counterfactual)	Waarts et al. (2012) (RA, Kenya), Ochieng (2013) (RA, Kenya), Waarts et al. (2013a) (UTZ, Kenya) and Waarts et al. (2013b) (UTZ, Malawi)
Empirical (qualitative, no counterfactual)	Nel (2007) (FT, South Africa), Dolan (2010) (FT, Kenya), Besky (2010) (FT, India) and Makita (2012) (FT, India);
Theoretical	Blowfield and Dolan (2010) (FT, Kenya) and Reynolds and Ngcwangu (2010) (FT, South Africa)
Descriptive	Blowfield and Dolan (2010) (FT general), Nikoloyuk (2009) (RA, Kenya) and IDH (2011b) (RA, Kenya, Argentina)

Notes: RA = rainforest alliance, FT = fairtrade.

As we already mentioned in the introduction, like for other products, also in the tea market we have witnessed a growing role for private certification in the tea sector. Until recently little was known on the impact of sustainability standards in addressing the challenges of the tea sector. Over the past years, 12 studies were carried out on the subject of tea certification (see Table 2) eight of which were empirical and fieldwork-based, the other four more theoretical or descriptive in nature. Interestingly, only four studies were as scientifically rigorous to make use of a counterfactual, comparing the progress in time on certified tea estates with changes on comparable non-certified farms (Waarts et al., 2012, 2013a, 2013b; Ochieng et al., 2013). Six studies analysed the benefits of fairtrade; four focused on rainforest alliance while two analysed UTZ certified. No impact studies were found on the ethical trade initiative (ETI) certification schemes. Out of the ten studies, six focused on Kenya, two on South Africa, two on India and one on Argentina.

In terms of the impacts described (presented in Table 3) most studies focused on the economic and social domain of sustainability, leaving the environmental effects of sustainable tea certification understudied.

In this relatively small literature-base, a range of interrelated economic benefits from certification can be found. The introduction of standards has often led to the adoption of better farming practices, improved quality and higher productivity, resulting in higher incomes (Waarts et al., 2012, 2013a; IDH, 2011a), but in other these could not be proven (Waarts et al., 2013b). Some studies also found evidence of increased income diversification, more upgrading activities and improve market access (Waarts et al., 2012; IDH, 2011b; Ochieng et al., 2013).

Others found less positive results: the cost of certification did sometimes not weigh up to its benefits and many farmers had to invest in additional labour to comply (Dolan, 2010; Blowfield and Dolan, 2010). Fairtrade farmers sometimes found the guaranteed price being lower than the market price or were forced to sell to the conventional market due to a lack of demand for certified tea. Certification did also not always improve the low wage levels of farmers (Nikoloyuk, 2009) or the productivity and management (Waarts et al., 2013b).

In the social domain, farmers were found to be more empowered and have positive attitudes about the benefits of certification (Blowfield and Dolan, 2010; Reynolds and Ngcwangu, 2010). Studies on rainforest alliance certified farms in Kenya found evidence of a broad range of livelihood improvements: certified farmers had better health, more

children in education and better relations with others than non-certified-farms (Waarts et al., 2012; Ochieng et al., 2013). Yet, other studies pointed out that many farmers were unaware of the concept of certification, did not participate in decision-making procedures or felt that the criteria they had to comply with did not meet their own development priorities (Dolan, 2010; Blowfield and Dolan, 2010). Some studies argue that private certification very well fits in the so-called ‘neoliberal project’, reducing the role of governments, while shifting away the original focus of fairtrade on marginalised farmers and in some cases in fact decreasing the power of labour unions (Dolan, 2010; Besky, 2010, 2013). The few studies that included environmental impacts in their design, found that certification had resulted in lower use of agro-chemicals, better forest management and improved water quality (Waarts et al., 2012; IDH, 2011a).

Table 3 Major sustainability impacts mentioned in the literature on tea certification

<i>Economic impacts</i>	<i>Social impacts</i>	<i>Environmental impacts</i>
+ Better farming practices [1, 9]	+ Positive attitude towards standard [1, 4]	+ Lower use of agro-chemicals [1, 9, 11]
+ Higher productivity [2, 6, 10]	+ Empowerment of smallholders [5]	+ Improved water quality [2]
+ Better quality [1, 2]	+ Improvements in livelihoods [1, 9]	+ Better forest management [2, 9]
+ Higher income [1, 3, 10]	+ Better health situation [1]	+ Better waste management [9]
+ More income diversification [1]	+ More children in school [1]	
+ Better management [10]	+ Better relations with other farmers and factories [1, 11]	
+ More upgrading (processing, export) [5]	+ Better trained in work safety and chemical handling [9, 10, 11]	
+ Better market access [5]		
o More use of hired labour [1]		
o No improvement in productivity [11]	– Ignorance of concept certification [3, 4]	
o No improvement in management [11]	– Criteria do not match priorities of farmers [3]	
– Certification costs too high for many [3, 4]	– Low participation in decision-making [1,3]	
– Minimum price under market price [4]	– Persisting gender inequalities [4]	
– Insufficient demand for certified tea [4]	– Marginalisation of farmers [3]	
– Continued low wages [6]	– Weakening of labour unions [8]	

Source: [1] Waarts et al. (2012), [2] IDH (2011b), [3] Dolan (2010), [4] Blowfield and Dolan (2010), [5] Reynolds and Ngcwangu (2010), [6] Nikoloyuk (2009), [7] Makita (2012), [8] Besky (2010), [9] Ochieng et al. (2013), [10] Waarts et al. (2013a) and [11] Waarts et al. (2013b)

This review of existing research confirms the observation in various meta-evaluations that more systematically attuned research is needed (Vermeulen et al., 2010; Alvarez and von Hagen, 2011, 2012; Steering Committee of the State-of-Knowledge Assessment of

Standards and Certification, 2012; von Hagen and Alvarez, 2011, 2012) with as bottom line that research designs require the inclusion of a counterfactual approach: aiming at establishing impacts over time and comparisons with control groups. In addition, researchers should not merely look at whether farms are certified or not, but they should identify specific changes in behaviour related to the large set of requirements, because non-certified farms as well may apply at least some of these ‘better management practices’ (Crosse et al., 2012). Also it is advised to distinguish the interventions (inputs), direct responses in term of adjusted ‘better management practices’ at farms (outputs) and the final intended impacts (living conditions, ecological improvements) (van Oorschot et al., 2014; Vermeulen, 2015).

Table 4 Current features of the most well-known sustainability certification standards, nowadays applicable for tea on the Indian market

	<i>Certification initiative</i>					
	<i>Organic/ IFOAM</i>	<i>Fairtrade</i>	<i>Rainforest alliance</i>	<i>Ethical trading initiative</i>	<i>Global GAP</i>	<i>UTZ certified</i>
Since	1972	1988	1993	1998	2000	2002
Total nr of requirements	134	139	195	53	137	107
Share of requirements addressing subject fields (% of all requirements)						
Environment	68%	38%	38%	-	41%	34%
Social	25%	37%	38%	90%	27%	48%
Economic and management	4%	9%	11%	2%	6%	11%
Quality	3%	12%	9%	-	24%	3%
Ethical	-	4%	4%	8%	2%	4%
Degree of obligation (% of all requirements)						
Immediately	95%	45%	28%	100%	72%	58%
< one year	-	6%	72%	-	-	26%
< three year	-	31%	-	-	-	2%
< five year	-	19%	-	-	-	9%
Recommended	5%	-	-	-	28%	5%

Source: Based on information of WTO-ITC (2014)

One issue hardly addressed in the reviews is that in practice (tea) famers can very well connect to various certification schemes simultaneously (Reinecke et al., 2012). This further complicates the attribution of impacts to one certification scheme. Like we discussed in Section 1, according to the WTO-ITC standard map in 2014 more than 30 different certification standards were available, which also claim to be applicable for Indian tea producers (WTO-ITC, 2014). Table 4 gives the main features of the most well-known private certification standards.

The oldest standards have a specific focus, but nowadays do not exclusively address either environmental or social issues. The most recent standards aim to address all sustainability issues (planet, people and prosperity). Another difference is the degree to which all requirements should be met immediately or partly of a few years. In practice the same farmers can connect to two or more standard organisations or to various suppliers who each demand compliance to another standard.

Summarising the above discussions we conclude that analysing impacts of private sustainability certification requires application of a counterfactual approach, jointly addressing planet, people and prosperity issues, looking both at the direct results (compliance to specific standard requirements) and the impacts in terms of improved environmental, social and economic conditions, while finally addressing the role of competing standards from a supplier's perspective.

3 Research methods

In the fields of emerging new practices, like sustainable production and consumption, the research methodology is often guided by the need to find empirical information in situations of small adoption. This calls for the use of mixed methods adapted to the situation at hand (Knight and Cross, 2012) combining open questions with closed questions allowing some level of statistical analysis, as far as that is possible with a small *n*. In this study we have designed the research based on these recommendations of Crosse et al. (2012) and others as far as possible (Seuring, 2011). We established a control group approach, but for comparison in time we applied a quasi-longitudinal approach, because of limitation in resources.

Table 5 Farm size and relative contribution to total yield of tea farms in Tamilnadu and India (1997)

Farm size	Tamilnadu				India			
	Nr of farms	Average farm size	Yield (1,000 kg)	% of total yield	Nr of farms	Average farm size	Yield (1,000 kg)	% of total yield
> 400 ha	16	535 ha	20,506	15.8%	390	590 ha	336,324	47.8%
100–400 ha	77	255 ha	53,082	41.1%	676	228 ha	275,003	39.1%
8–100 ha	177	24.8 ha	5,753	4.5%	469	46.4 ha	29,778	4.2%
< 8 ha	25,526	0.7 ha	49,667	38.5%	37,070	0.8 ha	62,325	8.8%
Total	25,796		129,008				703,430	

Source: Based on Ministry of Environment and Forests (2007, p.7)

Two groups of tea estates have been identified in the State of Tamilnadu¹, which is one of the two major Indian tea-producing regions. We have chosen to have a double as large size for the control group because they represent a far larger population. In Table 5 we see that the total number of tea estates in Tamilnadu was 25.796 in 1997, with 57% of the produce originating from tea estates with sizes larger than 100 ha (based on most recent available information, yet describing 1997). The average size of farms in the Tamilnadu region is relatively small: around 3 ha, because of a relatively large group of small farms [Ministry of Environment and Forests, (2007), pp.2–3]. The table clearly illustrates the divide in the Indian tea sector between a small number of very large estates and large numbers of very small tea farms, mostly producing for the domestic market. Even though a small number of these smallholders are connected to the international market we have chosen to focus on the larger estates, because they represent the largest share of tea production. We excluded smallholders also because analysing them would require a different interview approach.

Getting access to tea estates by applying random sampling based on a full list of the population of tea estates is not possible in practice, because of incomplete registration in India. Instead we have chosen a two step procedure: first we have addressed all existing 10 tea estates with UTZ certification (which however all have multiple certifications) and by using a snowball procedure, by contacting experts in the field and using field knowledge of local farmers we doubled the number of certified tea estates and identified a double number of non-certified farms in the same region, with comparable sizes. In this way we have a sample of 19 certified farms and 41 non-certified farms.

The full number of certified farms (certified by any of the certification schemes) is not clear due to the decentralised registration. The 19 certified farms represent all UTZ certified larger estates in the region and a large share of the other certified farms.

For the data collection we have visited all 60 farms in October 2013, interviewed the 60 managers in a one to two hours interview applying a questionnaire with structured and open questions and applied visual inspections at the farms. The interviews were in English, conducted by domestic interviewers with academic schooling. This assured common understanding, as the interviewers and interviewees had the same cultural background and level of education (see also Table 7, years of education).

Based on our literature review and the recommendations to test the theory of change and applying an inputs-outputs-impacts approach (Section 2) we have designed a questionnaire, which contains ten components. Apart from general farm and farmer characteristics, the questionnaire contains questions to identify developments in time and actual performance related to the three elements of sustainability (people, planet, prosperity). By asking interviewees about their recollection of developments in a short history (< three years) one can apply a quasi-longitudinal approach, in cases of limitations in resources (McLeod, 2003). The questionnaire is available as additional material to this article.

Both for the area of 'planet' and 'people', based on the literature review (Section 2) and discussions with UTZ certified and Indian stakeholders a selection of most relevant six requirements from the UTZ certified code of conduct was taken to analyse the performance of both certified and non-certified farms in various better management practices. Perceptions, motivations and farmer's evaluations are addressed in sections E and H. The outcomes are addressed in section I, while we added a section J on future perspective to get a good view on the needs and ambitions of tea estate managers with open questions.

In the interviews also open questions were included about which changes in practices the farms had made with the initial adoption of a sustainability standards (as given in Table 4) and which changes were implemented to be able to be accepted by UTZ certified. In this article not all detailed results of the survey can be presented, we have chosen to focus on the key aspects.

The questionnaire contained different types of questions. Some questions asked for numbers and percentages (ratio variables), while in others respondents had to choose between a 'yes' and 'no' answer, resulting in dichotomous variables. A great deal of questions had more than two answer categories to choose from, which translated into nominal variables. Many of the nominal variables were collected in a Likert scale format, with five or seven answer categories, making it possible to transform them into ratio variables for statistical analysis. A variety of questions, especially those with a more evaluative character, were posed in an open question format.

For this study a detailed analysis of the profitability of tea estates based on analysing their bookkeeping was beyond the scope of feasibility². In order to obtain comparable information and full response we have chosen to use a general profit perception oriented question to measure profitability.

Different statistical methods were used to analyse the influence of farms being certified on other variables. To analyse the relation between this dichotomous variable for certification and all ratio variables an independent samples t-test was used. The same test was also applied on variables with a Likert scale, based on the mean value of the categories used. This is what is still allowable with the sample size (de Winter, 2013).

To analyse the relation between the dichotomous certification variable and all nominal variables, chi-square was used. Finally, for determining correlations between the dichotomous certification variable and other dichotomous variables, such as farm observations with only two answer categories ('yes' and 'no'), the phi coefficient was used. For all correlations found, significance levels of $p < 0.1$, $p < 0.05$ and $p < 0.01$ were indicated with one, two or three stars (*, **, ***) and by the use of bold fonts.

Table 6 History of certification at the sustainability certified farms in the research sample

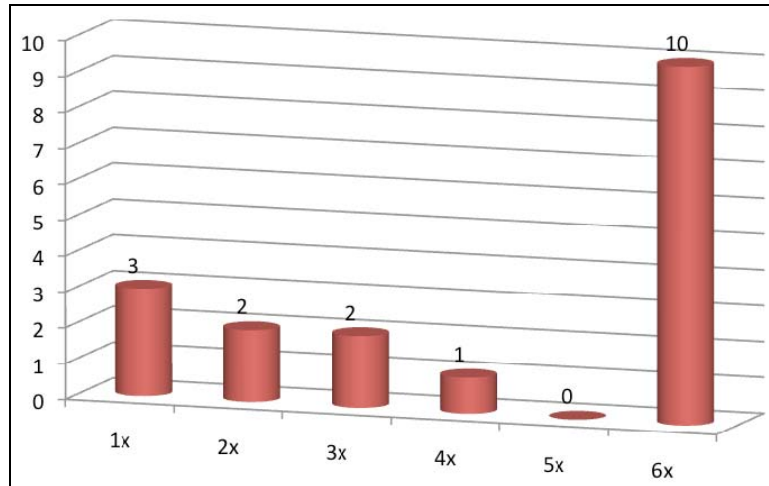
Certification	#	Number of farms certified since:								% of products certified
		2012	2011	2010	2009	2008	2007	Earlier	Oldest	
UTZ certified	10		5	1		4			4-2008	100%
Rainforest alliance	16			5		9		2	4-2005	93%
ETI	14				1	7	5	1	5-2006	100%
Organic	6			1	1			4	4-1994	35%
Fairtrade	6				1			5	4-1994	77%
Global gap	5			5					10-2010	n.a.
Others*	12		5		1	1		5	4-2000	100%
Total	19									

Notes: Naturland Kosher (4×), ISO 22000 food safety/HACCP (8×)

Table 6 and Figure 1 give an overview of the certification practices of the farms in the sample. Like we discussed, we see that almost all these farms have been certified under various schemes. Organic and fairtrade farming was already applied by some of these farms for two decades, while the majority started working according to sustainable farming practices in the second half of the first decade of the 21st century.

This is very well in line with the general global market developments (Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012; Vermeulen and Kok, 2012; Vermeulen, 2015). The data also show that rainforest alliance, ETI and UTZ certified have the largest take up, while the number of farms working with the longer existing organic and fairtrade schemes is smaller.

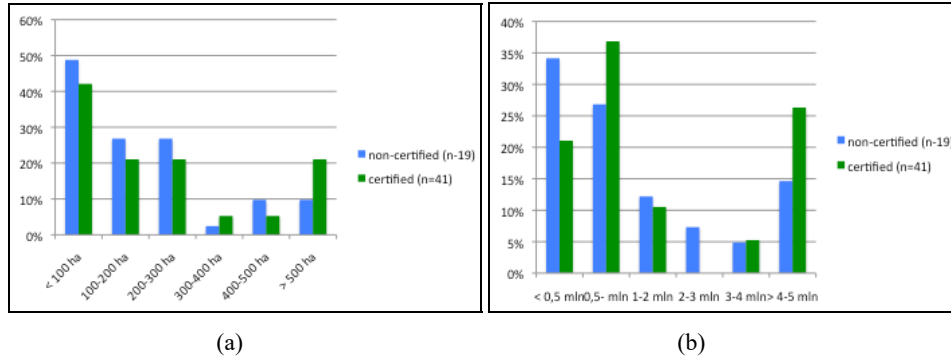
Figure 1 Number participations in certifications of the certified farms in the research sample (see online version for colours)



4 Results: tea farming in India

The tea estates in our sample together cover 12.592 ha with an average size of 209 ha per farm, while having 102.7 million tea bushes in total and 1.7 million bushes per ha averagely. This implies that our sample indeed represents estates in the region of the three largest size groups (see Table 5). The smallest estates covered around 25 ha. We also see a strong variation in sizes, fairly similar for the group of certified estates and the control group. This sample of 60 farms represents 1/8th of the tea farmland in Tamilnadu, which again shows that a relatively small numbers of large estates represent a large part of the total production.

Table 7 presents the main characteristics of the farms in our samples and of the respondents. We see statistically significant differences in the labour force. Certified farms employ more workers, both in absolute numbers and in numbers of workers per million bushes. This matches both with the larger size and the more labour intensive production techniques of this group. A second clear difference is the use of seasonal workers. In all certified farms hardly any use of seasonal workers is prevalent. In line with the less intensive farming we see also a clear difference in the farm layouts. On three-quarter (74%) of certified farms some share of the farm is designated to be conservation area, whereas that share is only 59% at non-certified farms. The share of respondents stating they have over 10% of their farm as conservation area is much larger among certified farmers (48%) than among non-certified farms (7%).

Figure 2 (a) Distribution of farm size in the two samples in ha (b) amount of bushes per farm (x mln) (see online version for colours)**Table 7** Characteristics of Indian tea estates and farmers

Characteristics	Certified (n = 19)		Non-certified (n = 41)		t value (p)
	Mean	St. dev.	Mean	St. dev.	
Farms					
Farm size (ha)	293.43	297.32	171.15	186.28	1.649 (0.112)
Bushes (× 1,000,000)	2.392	2.316	1.520	1.653	-0.700 (0.487)
Labour force (nr. of workers)**	393.26	307.64	232.14	279.10	2.014 (0.049)
Share permanent vs. seasonal workers***	99.9%	0.5%	75.6%	22.5%	4.672 (<0.00)
Share of management and administration	4.3%	4.3%	4.9%	3.4%	0.785 (0.613)
Labour intensity (worker/mln bush)	337.28	482.12	197.10	186.94	1.225 (0.234)
Farmers					
Age	44.79	7.292	48.59	12.416	-1.234 (0.222)
Farm Manager (%)	89.47	31.53	85.37	35.78	0.429 (0.670)
Male respondent (%)	100	0.000	95.12	0.218	0.971 (0.336)
Years of education	15.68	0.820	16.05	2.846	-0.546 (0.587)
Academic background (%)	94.74	0.229	80.49	0.401	1.439 (0.156)
Experience in tea production (years)	21.89	8.53	22.59	12.58	-0.217 (0.829)

As for our main sources of information, Table 7 also shows that we typically interviewed the farm manager, almost always male, in his 40's, with higher education backgrounds and over two decades of work experience. We analysed to what extent the farmers experienced knowledge needs with respect to specific farming topics. The results in Table 8 show that we can see some significant differences between the two groups. Managers on non-certified farms more often claim they need some additional training in the fields of crop production, farm management and business skills and farm maintenance. For health and safety and pest management no clear differences were found.

Table 8 Knowledge needs among staff and managers according to Indian tea estate managers

<i>Knowledge issue</i>	<i>Certified</i>		<i>Non-certified</i>		<i>t value (p)</i>
	<i>Mean</i>	<i>St. dev.</i>	<i>Mean</i>	<i>St. dev.</i>	
Crop production**	3.26	0.872	2.61	0.997	2.453 (0.017)
Health and safety	3.11	0.875	3.00	0.775	0.470 (0.640)
Farm management and business skills*	3.32	0.749	2.93	0.877	1.669 (0.100)
Pest management and chemical application	3.47	0.697	3.37	0.767	0.521 (0.604)
Farm maintenance***	3.58	0.692	2.88	0.927	2.932 (0.005)

Notes: Using Likert scale: (1) large need of additional training, (2) some need of additional training, (3) staff and managers are familiar with most recent knowledge, (4) staff and managers are continuously applying the most recent knowledge.

We can further characterise the tea estates by looking at their level of specialisation, their markets and their market relations.

The largest part of the farms in the sample produces only tea (78.3%), which makes them very dependent of one single market. The remaining small group of farms having other incomes get some of their income from other agricultural activities. Five farms also earn some money (up to 10–12% of their income) from tourism; two farms also have 10% of their income from grains. Four non-certified farms have another substantial source of income (between 30–58%) from coffee, pepper or flowers.

The market orientation of the two groups shows a very strong divide. All non-certified tea farms are fully oriented to the domestic Indian market (Table 9). The certified farms however sell the largest part of their yield on the international market, predominantly the European, and to a smaller extent the North American market.

Table 9 Share of tea that is produced for each market (%)

<i>Type of market</i>	<i>Certified</i>		<i>Non-certified</i>		<i>t value (p)</i>
	<i>Mean</i>	<i>St. dev.</i>	<i>Mean</i>	<i>St. dev.</i>	
Indian regional market	44.74	36.051	98.11	10.051	–6.325 (0.000)***
Asian market	5.00	7.149	0.00	0.000	3.094 (0.007)***
North American market	9.21	16.689	0.00	0.000	2.406 (0.027)**
South American market	0.26	1.147	0.00	0.000	1.000 (0.331)
European market	36.58	26.460	1.58	9.733	5.580 (0.000)***
Rest of the world	4.21	6.511	0.00	0.000	2.819 (0.011)**

Table 10 Buyer relations of Indian tea estates

<i>Buyer relations</i>	<i>Certified</i>		<i>Non-certified</i>		<i>t value (p)</i>
	<i>Mean</i>	<i>St. dev.</i>	<i>Mean</i>	<i>St. dev.</i>	
Number of buyers estate is selling to*	16.1	18.8	33.7	52.3	–1.849 (0.070)
Share of tea sold to suppliers through supply contracts***	59.3%	31.5%	14.7%	24.2%	6.010 (< 0.00)
Share of tea that is sold on auctions***	18.2%	29.8%	63.7%	44.2%	–4.689 (< 0.00)

Also the market relations of both groups of farms are clearly different. Non-certified farms sell their tea mostly on auctions and hardly directly with supply contracts (Table 10). This gives them less certain relations with clearly larger numbers of buyers. Non-certified farms sell the largest part of their produce direct to their buyers, with nearly 60% sold via supply contracts.

Before we start presenting the practices and performance of both groups in the area of planet, people and prosperity is it good to get an understanding of how these farmers perceive sustainability certification. We may expect some clear differences in appreciation for the various elements of the certification requirements and the operational implications of being certified. Based on our discussion in Section 2, we presented the farmers a set of statements allowing us to analyse differences in their assessments (Table 11).

Table 11 Tea estate managers' assessment of being involved in sustainability certification

<i>Level of agreement with statement</i>	<i>Certified</i>		<i>Non-certified</i>		<i>t value (p)</i>
	<i>Mean</i>	<i>St. dev.</i>	<i>Mean</i>	<i>St. dev.</i>	
1 Certification helps our tea farm/estate to take better care of the environment**	6.05	1.026	5.27	1.628	2.264 (0.028)
2 Practice related to certification lead to increased productivity of the farm/estate	5.05	1.026	4.51	1.535	1.294 (0.169)
3 Certification leads to using less harmful agro-chemicals	5.89	1.100	5.37	1.318	1.159 (0.134)
4 There is more demand for certified tea than for non-certified tea	4.63	2.432	3.83	1.787	1.286 (0.209)
5 Certification ensures better working conditions for my labourers	5.84	1.015	5.46	1.267	1.143 (0.273)
6 The certification is merely a confirmation of the farming practices we have been using all along***	5.89	1.150	4.78	1.666	3.008 (0.004)
7 The requirements of the certification schemes are more in line with European demands than with our major challenges in this region	5.79	1.182	5.44	1.433	0.929 (0.134)
8 The premium received for certified tea is insufficient to cover the costs	5.21	1.751	4.76	1.827	0.908 (0.258)
9 Being certified increases the administrative workload on the farm/estate	4.95	1.580	5.39	1.376	-1.106 (0.273)
10 Complying with certification schemes brings high cost of compliance	5.47	1.389	5.61	1.137	-0.373 (0.712)

Notes: Using Likert scale: (1) strongly disagree, (2) disagree, (3) slightly disagree, (4) agree nor disagree, (5), slightly agree, (6) agree, (7) strongly agree.

Remarkably, for most of the statements we only see small differences in appreciation between the two groups. The first five statements represent positive outcomes in the areas of people, planet and prosperity as result of participating in certification. Also non-certified farmers clearly agree with these statements, be it slightly less. Certified farmers are significantly more positive about the environmental impacts, while non-certified farms are not convinced about sufficient demand for certified products (4).

Statements 6 to 10 represent some of the earlier discussed critics to certification, which may also be a reason for choosing not to join such schemes. Again we see only slight differences, with only the statement about certifying already existing practices significantly being more agreed to by certified farms. Here we must bear in mind that most of the certified farms are already applying ecological and fair-trade practices for many years. We also see that farms that are experienced with certification do slightly more agree to critics about standards being eurocentric (7) and insufficiently covering costs (8), while non-certified farmers slightly stronger support concerns about workload (9) and compliance costs (10).

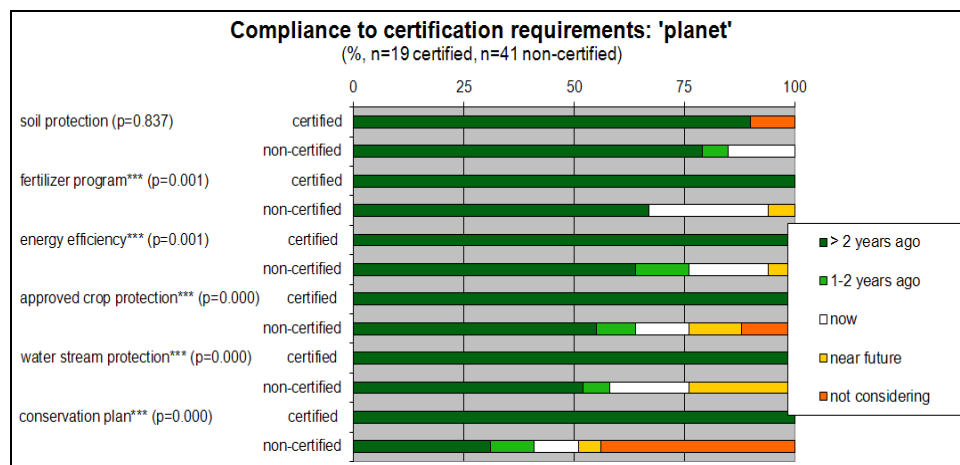
5 Results: comparing ‘planet’ issues

As we showed, most certified farms have a longer history of certification. We asked the farms that added UTZ certified certification as a recent additional scheme, what they needed to change to be able to enter the UTZ certified program. Table 12 shows that the most important changes were in waste treatment and agro-chemical handling practices, while four out of ten did not make any changes.

Table 12 Major changes made in impact farm on environment because of participating in UTZ certified certification (n = 10)

Changes made	Mentioned as			Total
	First	Second	Third	
Wastewater treatment	5	-	-	5
Safe disposal of non-degradable wastes	-	5	-	5
Disposal empty agro-chemical containers	-	-	5	5
No changes made	4	-	-	4
Protection wild animals	1	-	-	1

Figure 3 History of compliance to specific better management practices in the area of ‘planet’ (see online version for colours)

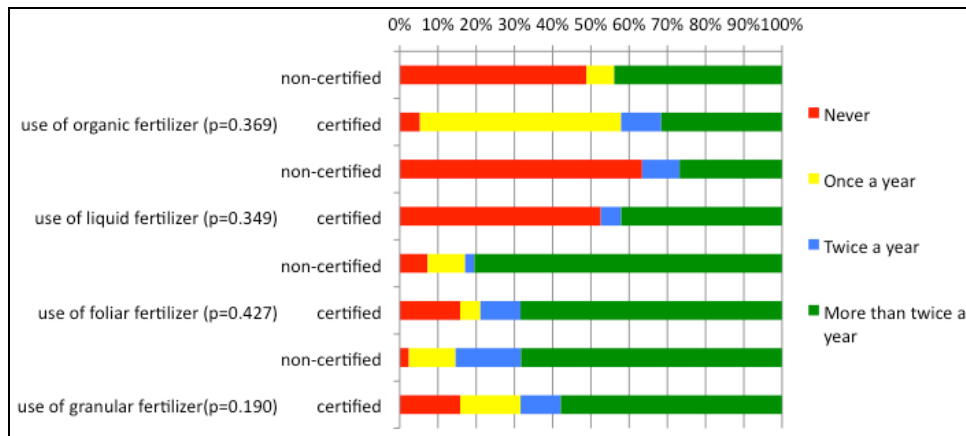


Based on the requirements set in the UTZ certified code of conduct we checked for compliance on six 'planet'-related better management practices, by asking whether and since when these have been implemented³. Here we see a very clear difference between the certified and non-certified farms (Figure 3). All certified farmers indicate to have implemented a wide range of environmental measures already more than two years ago: for five of the six practices all certified farms did so. There is one exception for soil protection practices: for this practice, where two out of the 19 managers state not to have considered this measure while the remaining 17 certified farmers state to have already adopted this measure more than two years ago.

On non-certified estates the adoption rate of environmental measures is considerably lower, varying from 85% arguing they have already adopted soil protection practices to 42% stating they have already implemented a conservation plan. There is also remarkable variation in the share of non-certified respondents who say they have not considered implementing a certain environmental measures. No respondent states to have not considered implementing soil conservation measures, but 24% have not considered implementing water stream protection while 44% have not considered implementing a conservation plan.

In a closer inspection of the performance of farming practices we also see various clear differences. While the majority of certified estates use organic fertiliser (95%), only half (51%) of non-certified farmers use organic fertiliser (Figure 4).

Figure 4 Application of fertilising practice at tea estates (see online version for colours)



On certified farms all employees keep a certain distance to the nearest water body when applying chemicals, whereas on non-certified farms 24.4% of respondents states not to keep any distance to the nearest water body. Also the practice of edge/spot spraying is a little more common on certified farms (47.4%) than on non-certified farms (37.8%).

In trying to assess the impacts we focus on farm expansions and perceived soil fertility. For the first aspect, at certified farms no expansions were found in the last three years, while only one non-certified farm had a minor expansion (+5%). Both groups of farms explained in the interviews that in their region there are stringent policies are blocking any further expansion at the cost of protected natural areas.

As for the second impact aspect, interestingly, according to the farmers the soil quality has improved on the majority of certified estates (in 84.2% of cases), whereas it

remained the same according to the majority of non-certified farmers (95.1% of respondents) (Figure 5).

Figure 5 Tea estate managers' perceptions of changes in soil quality during the last two years (see online version for colours)

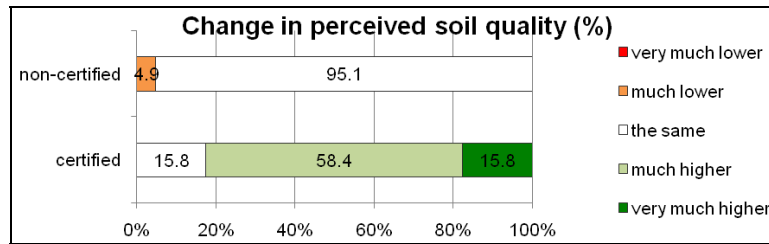
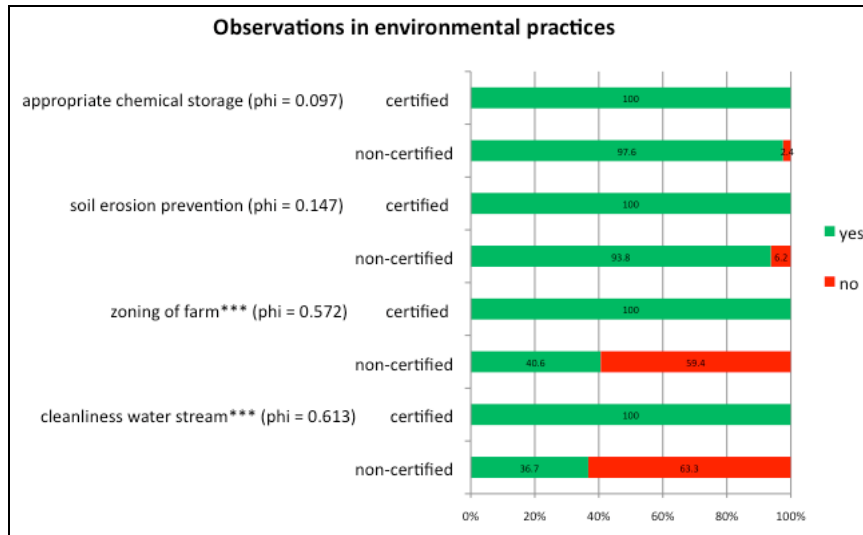


Figure 6 Field observations of selected better environmental management practices on Indian tea estates (see online version for colours)



The interviewers also made field observations (Figure 6). These reveal that certified farmers do apply all environmental practices: soil erosion prevention, maintaining cleanliness of production and living sites, use of protective equipment, keeping water streams clean, zoning of farms and appropriate chemical storage. The adoption of these practices on non-certified farms is lower, but with high variation among various practices: 97.6% uses the appropriate chemical storage, but only 40.6% applies zoning of their farm and 36.7% of non-certified farms do pay sufficient attention to the cleanliness of the water streams.

To conclude we can state that we do observe very clear differences between certified and non-certified farms. However, the picture is not absolutely black and white, a fair share of non-certified are not on a large distance to compliance with certification requirements.

6 Results: comparing ‘people’ issues

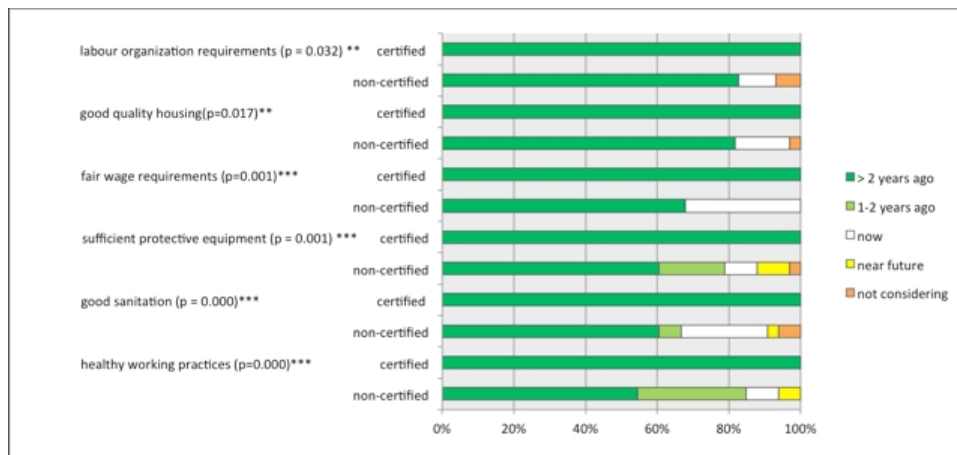
Like we did for ‘planet’ issues, we also asked the farmers who recently joined UTZ certified certification what they needed to change in the area of ‘people’ issues to be able to enter this program. Table 13 shows that the most important changes are found in handling of agro-chemicals, storage for protective equipment and once in healthcare. Again, four of ten did not make additional changes to join UTZ certified.

Table 13 Major changes made to reduce farm impact on social issues because of participating in UTZ certified certification (n = 10)

<i>Changes made</i>	<i>Mentioned as</i>			<i>Total</i>
	<i>First</i>	<i>Second</i>	<i>Third</i>	
Providing bathing facility for workers handling agro-chemicals	5	-	-	5
Separate storing for PPEs	-	5	-	5
None changes	4	-	-	4
Better health services	0	1	-	1
Improved working conditions	1	-	-	1
Training on hygiene	-	-	1	1

We also analysed the compliance to six ‘people’-related practices based on the UTZ certified code of conduct⁴. Here we see a comparable very clear difference between the certified and non-certified farms. All certified farms have implemented all necessary practices (healthy working, wearing protective equipment, good sanitation and housing, labour organisation and fair wage requirements) already more than two years ago, while the share of non-certified estates that has implemented these practices varies between around 80% (healthy working practices, use of PPE, housing, labour requirements) and 70% (fair wage, good sanitation).

Figure 7 History of compliance to specific better management practices in the area of ‘people’⁵ (see online version for colours)



If we look at performance of some of the most relevant social practices we also see various clear differences (Table 14). The average lowest wages paid for all 60 farms is 202.5 Rps/day (male, permanent), 200.8 Rps/day (female, permanent), 211.0 Rps/day (male, seasonal), 207.0 Rps/day (female, seasonal), while the lowest wages found were 190.0 Rps/day.

Table 14 Lowest wages provided by employers at Indian tea estates (October 2013) (rupees/day)

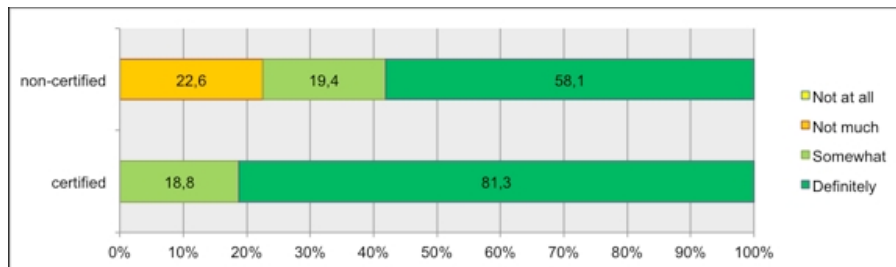
Type of labourers	Certified		Non-certified		t value (p)
	Mean	St. dev.	Mean	St. dev.	
Lowest wage paid to male permanent worker	202.78	2.134	202.39	16.622	0.102 (0.919)
Lowest wage paid to female permanent workers	202.78	2.134	199.96	5.675	2.788 (0.007)***
Lowest wage paid to male seasonal worker	204.25	0.000	212.68	63.970	-0.414 (0.681)
Lowest wage paid to female seasonal worker	204.25	0.000	207.68	33.462	-0.322 (0.749)

Comparing certified and non-certified we see very minor differences. For permanent workers, the average lowest wages are higher on certified estates than on non-certified estates. Only for women, this difference between certified farms and non-certified farms is significant, but still marginal. Wages paid to seasonal farmers on non-certified farms are slightly higher, but here we need to remind the reader that seasonal workers are hardly present at certified farms.

In India these wages are based on a legal minimum wage per sector and per region fixed by the national authorities, plus an additional negotiated ‘dearness allowance’ (DA), which gets revised regularly (a few times per year) based on the ‘living index’. In principle all tea estate managers in a specific region pay this same fixed salary to their workers. In Tamilnadu this total minimum wage was Rs. 185.50 (May/June 2013); Rs. 198.00 (July–September 2013) and Rs. 204.25 (October–December 2013). The minor differences found will be due to delayed implementation of these regular changes, but in general the wages are given according to the minimum wages.

The social performance with respect to two other subjects investigated does show a stronger divide between certified and non-certified farms: access of labour unions and practices with respect to maternity leaves.

Figure 8 Contribution of labour unions to good relations with workers (%) (see online version for colours)



Notes: t = 2.525, p = 0.015**

The survey shows that access of labour unions is comparable, but appreciation is clearly different (Figure 8). While on certified farms mostly two or three labour unions are active (68%), the picture for non-certified farms is much more diverse: nearly a third of non-certified estates have two to three labour unions (31%) active, while another third has even more than three labour unions (29%) active on the farm. The appreciation of the work of labour unions is more different. Managers of certified farms are significantly more positive about the contribution of unions to the relation with their workers than those of non-certified farms.

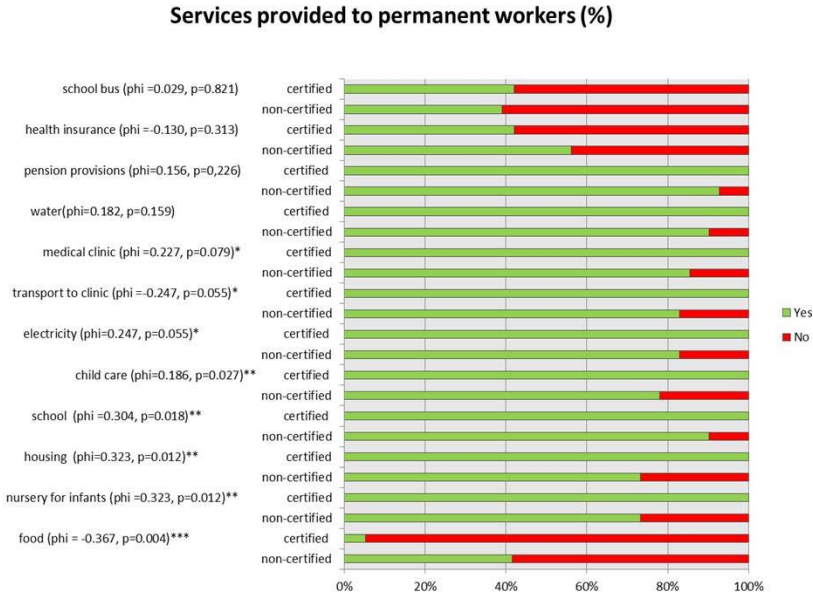
Looking at maternity leaves, there are no strong differences found in the average number of days female workers can take maternity leave among certified and non-certified estates. For both groups they sum up to the legally required 84 days. Looking more in details we see 24% non-compliance amongst non-certified farms (marked in grey in Table 15), but no non-compliance for certified farms.

Table 15 Practices of maternity leaves at Indian tea estates

<i>Period of time female workers can take maternity leave (days)</i>							
<i>Before birth of child</i>				<i>After birth of child</i>			
<i>Days</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>	<i>Total</i>	<i>Days</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>	<i>Total</i>
15	0	0	0	15	0	1	1
30	0	2	2	30	0	2	2
40	0	6	6	40	0	6	6
41	0	1	1	41	0	1	1
42	14	24	38	42	14	24	38
45	5	7	12	45	5	7	12
60	0	1	1	60	0	0	0
Total	19	41	60	Total	19	41	60
Average	42.79	42.05		Average	43.00	39.94	
t-value and significance	1.023 (0.311)			t-value and significance	1.747 (0.099)*		

We also analysed the provision of services to workers. The majority of services studied (housing, electricity, pension, schools, child care, nurseries, medical clinic, transport) are available to permanent workers on all of certified estates (100%), while being available to permanent workers on 70–90% of non-certified estates (Figure 9). There are two exceptions to this: food is provided more often on non-certified estates (41.5% of all cases) than on certified estates (only one case), most probably because food is only provided to seasonal workers, which are virtually absent on certified estate. Also health insurance is provided more often on non-certified estates (56.1%) than on certified estates (42.1%).

Figure 9 Services provided to permanent workers at Indian tea estates (see online version for colours)



In trying to assess the impact we focus on the improvements made to housing and physical infrastructures. Differences are found here: while all certified estates have made improvements to the housing in the past three years, only 44% of non-certified farms did so as well. Improvements made to the houses of certified estates are often more structural than among the non-certified estates, where improvements more often are made in the context of small maintenance (painting, repair of sanitation).

Looking at physical infrastructures we see that all estates have an electricity connection; while none estates still have pit latrines, communal flush toilets or boreholes. Yet, the number of individual flush toilets is significantly higher on certified (average = 433) than on non-certified farms (average = 191) (even if we adjust it for differences in farms sizes), as well as the number of piped water connections being significantly higher on certified (average = 419) than on non-certified farms (average = 57).

Table 16 Absence due to health situation of workers at Indian tea estates

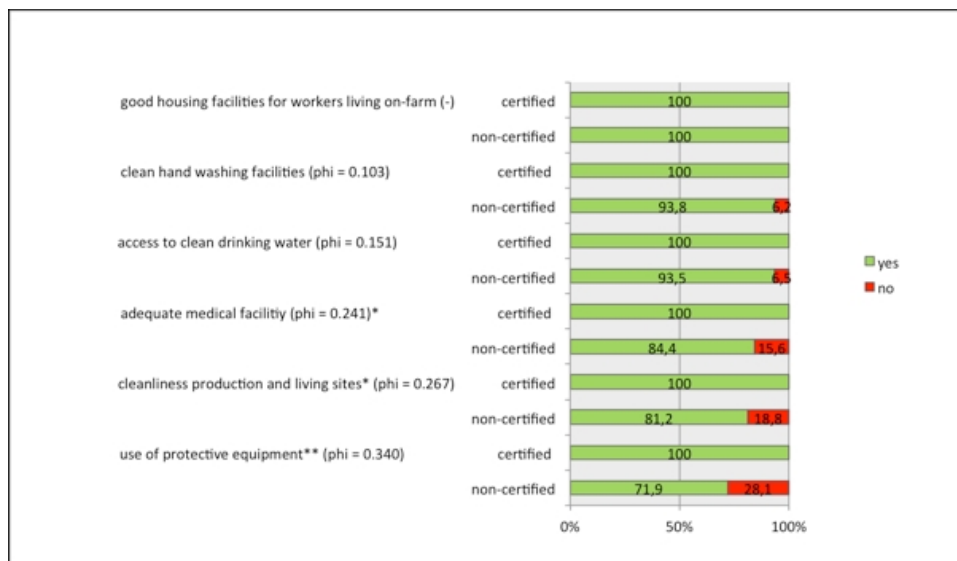
Absence due to health situation	Certified		Non-certified		t value (p)
	Mean	St. dev.	Mean	St. dev.	
Average amount of days each year that workers are absent from work because of their health situation	13.94	12.61	24.18	16.78	-2.291 (0.028)**
Number of workers that were absent from work longer than one week due to serious health problems	6.30	4.60	61.93	75.97	-3.786 (0.001)***

Another significant difference is found in the health situation (Table 16). Employees on non-certified farms are significantly more often absent due to their health situation (average 24 days a year) than employees on certified farms (average 14 days a year).

The number of employees that was absent for longer than a week over the past 12 months due to health problems is also significantly higher on non-certified farms (average = 61.9 days) than on certified farms (average = 6.3 days).

The interviewers also made field observations about the living conditions. These reveal that on certified farms in all cases the expected practices and facilities have been observed to be present. For most of these practices is small part of the non-certified farms (between 6–28%) the farms such facilities were lacking or in poor condition. Clean living production sites and protective equipment was lacking the most often.

Figure 10 Field observations of selected better social management practices on Indian tea estates (see online version for colours)



Summarising these findings we can draw a comparable conclusion for social practices as for environmental management. Again we observe significant differences between certified and non-certified farms. While again the picture is not absolutely black and white, with a part of non-certified also complying to various better management practices, we see at some issues only minor differences, like the level of wages paid. Most remarkable result is the clearly better health situation of employees on certified tea estates.

7 Results: comparing 'prosperity' issues

Sustainability certification aims to improve the economic position of supplying farmers and of their communities. This includes profitability of the farm, but certification schemes aim to go beyond direct profit alone by promoting long-term resilience of farms in the volatile and competitive international markets.

We see in Figure 11 that certified farms report to experience a better profitability than non-certified farms. In the certified group 5.% had losses larger then 6% recently, while 26.8% non-certified farms recently suffers such and larger losses. 44.4% of the certified

farms reported annual profits larger than 10%, where only 14.6% of the non-certified could report such profitability. Overall the fact that in both groups only half of the farms can report a positive balance is an alarming fact.

Figure 11 Profitability during the last year 2012 of Indian tea estates (see online version for colours)

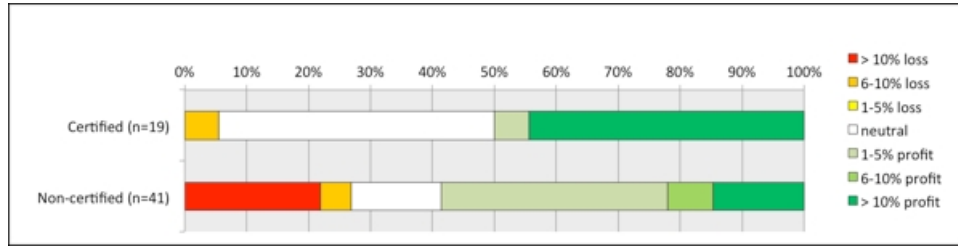
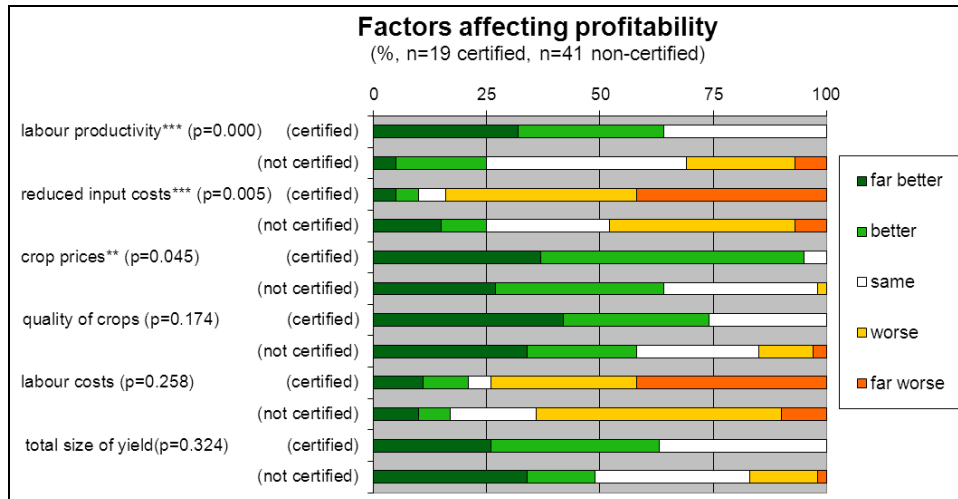


Figure 12 Factors affecting Indian tea estate's profitability (see online version for colours)



To get a better understanding of the forces behind strong or weak economic performance we asked the managers to indicate to which extent various factors contributed to positive or negative to their performance in the last TWO years. Results are shown in Figure 12. Certified farms are significantly more positive about the development of the crop prices and labour productivity than non-certified farms. In contrast to this certified farms experience higher input prices. A reason behind this are the higher costs for pest management, where certified farms can only use far more expensive crop protection, while non-certified farms rely on cheap and/or banned chemicals. For the other factors, labour costs, yield and quality farmers of the two groups give comparable answers. Rising labour costs are seen as a growing problem, while quality and size of the yield are by most farms evaluated as positively affecting their profitability.

In Table 17 more details are given about the differences in yield and prices for the two groups. Certified farms have an average yield of 2,255,000 tonnes in 2012, being 41% more than the non-certified farms in the sample. However, we saw in Table 7 that

the average farm size is also 71% larger. With an average yield/ha of 7.42 tonnes certified farms have a 25% lower per ha productivity than non-certified tea estates. We also see a 8.3% reduction of the yield in the period 2010–2012, while there has been a 3.4% growth in non-certified farms. We also have seen that certified estates are less land intensive, so a final comparison is needed, looking at the differences in yield per bush rather than per hectare. For this we see a small not significant difference between the certified and non-certified estates.

Table 17 Yields and averages sales prices of Indian tea estates in 2012

<i>Yields and prices</i>	<i>Certified</i>		<i>Non-certified</i>		<i>t value (p)</i>
	<i>Mean</i>	<i>St. dev.</i>	<i>Mean</i>	<i>St. dev.</i>	
Yield in 2012 (\times 1.000 tonnes)	2.255	2.178	1.583	2.309	0.994 (0.325)
Yield change '10–'12 (%) ***	-8.3%	10.0%	3.4%	13.0%	-3.482 (0.001)
Yield (1,000 kg/ha)***	7.42	2.31	9.91	3.90	-2.424 (0.007)
Yield (kg/bush)	1.14	0.41	1.36	0.97	-1.076 (0.287)
Average price (per kg)	17.21	1.807	16.53	2.514	0.450 (0.657)

Yet the prices received for certified farms are slightly (4%) higher for certified farms. If we put this in context with the answers about profitability we must conclude that certified farms, having a less environmentally intensive mode of farming, with a higher labour intensity (Table 7), resulting in lower per ha productivity, but slightly better prices need to be more efficient in their management factor costs to be able to more profitable, like they are reporting. One of the indications for this may be to lower illness absence reported above.

Table 18 Major impact of participation in certification on how farmer sells product on the market (open question)

<i>Impacts of certification on sales</i>	<i>Certified</i>
Better market access	11
Improved prices	5
Pride in promoting product	1
A web portal for selling	1
Online tracing	1
None mentioned	0
n =	19

In addition, we investigated the consequences of participation in certification for market position of the certified farms. Table 18 shows the type of answers given by the farmers. The most important impacts are better access to and visibility in the international market, which allows them to have more stable relations with foreign buyers.

We showed earlier that certified are far more connected to the international market and also when asked which markets farmer wish to enter mostly certified farmers show international ambitions, whereas non-certified farmers mostly focus on the domestic market. Also the types of market relations are different (Table 19).

Table 19 Type of buyers Indian tea estates are selling to (THREE largest buyers)

<i>Type of buyer (three largest buyers)</i>	<i>Certified</i>			<i>Non-UTZ certified</i>		
	<i>First largest</i>	<i>Second largest</i>	<i>Third largest</i>	<i>First largest</i>	<i>Second largest</i>	<i>Third largest</i>
Factory				4		
Trader/auction		8	12	2	18	20
National Indian brand	8	1	1	30	20	18
International brand	11	10	5	4	3	2
None mentioned			1			1
Average % of sales sold to this buyer	52.4%	19.6%	12.6%	55.5%	9.1%	9.8%
n =	19	19	19	41	41	41

In line with what was shown in Table 10 certified farms have more direct relations with international brands, like Unilever, JT&I, Starbucks and TGBL, while non-certified farms some relations with national brands, like Kannan Devan, Hindusthan Unilever Limited (HUL), Inco Serve, Kerala Civil Supply Corporation, AVT and Havukul tea and Produce, but have to sell a larger part of their products on the auction or to intermediate traders. Certified farms are also able to sell a larger part of their yields to these three largest buyers.

8 Farmers’ evaluations and challenges

Now we have seen in what ways certified non-certified farms differ in their performance the question is relevant how farmers of both groups evaluate the sustainability certification. First we will discuss the motivations of the certified group and their experiences and opinion about certification. Second we will have a look at the perception of the non-certified group.

Table 20 Motivations of Indian tea state managers to start with certification schemes

<i>Motivation to start with certification</i>	<i>UTZ certified certification</i>	<i>Other certification</i>
Improve market access	6	6
Better price	1	
UTZ certified is trusted and demanded by buyers	4	
Brand value, goodwill	2	2
Way to show CSR, continuous improvement	10	1
Workers awareness and commitment		11
Receive training for workers		4
Better product quality		2
None mentioned	(0)	(6)
n =	18	26

In Section 3 we showed that most of the certified farms have a longer history of certification and sustainably tea farming and were already certified when entering in addition certification schemes like UTZ certified. In order to get a good understanding of the reasons for entering in addition certifications we asked with open questions for their own narratives. These are briefly summarised in Table 20. We see that both market-oriented motives (market access, quality improvement) and addressing social and environmental issues are the drivers behind their participation in certification schemes, while the added value of also participating in UTZ certified is mostly based on market-oriented motives.

In Section 4 (Table 11) we presented a first assessment of the perceptions of Indian tea estate managers on sustainability certification. In addition to those literature-based pre-formulated statements, we also asked for their own evaluation with open questions, in order to allow for unbiased representation of opinions, both from those who worked with certification and those not. In order to have this as specific as can be, we focussed this question on one of the specific schemes, the UTZ certified scheme.

Table 21 Advantages and drawbacks of participating in UTZ certified according to Indian tea estate managers

<i>Advantages</i>	<i>UTZ certified</i>	<i>Non-UTZ certified</i>	<i>Drawbacks</i>	<i>UTZ certified</i>	<i>Non-UTZ certified</i>
Workers awareness of sustainability	5	0	Higher input costs	2	5
Better living and working conditions	5	9	Increase in workload		4
Improved environment	5	2	Not required by our buyers		2
Access to global market	4	8	Lower yield due to not using pesticides		1
Good price	2	3			
UTZ certified certification is reliable	1	0			
Brand value/goodwill	1	3			
Receive training/advice	1	1			
Better product quality		6			
Better management at farm		3			
Scholarships for kids		1			
None mentioned	(0)	(26)		(8)	(36)
n =	24	36		2	12

These narratives are shortly summarised as advantages and drawbacks in Table 21. The participants of UTZ certified did all give one or more advantages, while only two mentioned as a drawback the higher input costs (see also Figure 13). The advantages mentioned are very clearly in line with the original motivation mention in Table 21, making the certification clearly much appreciated by the members. If we look at the evaluation by the non-certified group first we must observe that a large part of the group (26 farmers) do not express any opinion about it. They indicated not to have sufficient

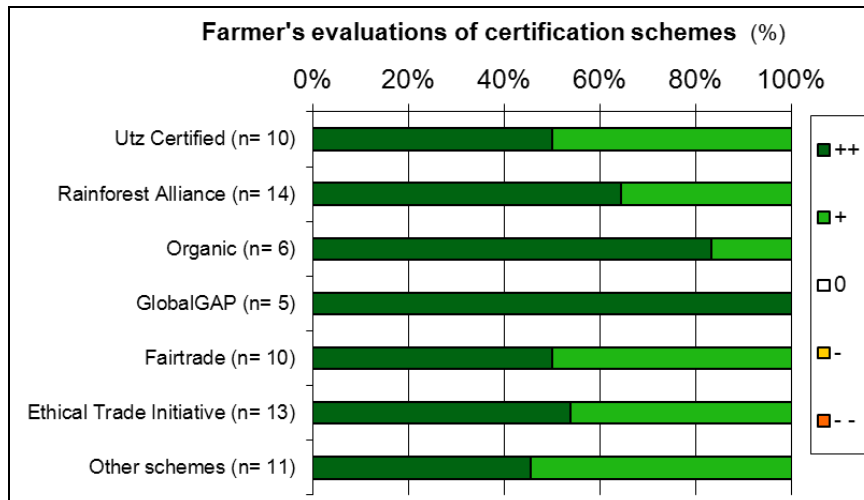
knowledge of these systems. Secondly, for the group that does have some opinion about it (roughly 1/3 of the non-certified farms) we also see that they mention more advantages than drawbacks. These advantages relate more to market-oriented motives (market access, quality improvement, together 24× mentioned) than to social and environmental issues (12× mentioned). This group also mentioned far more often financial and administrative drawbacks.

Like we saw in Section 3 most of the farms connected to UTZ certified did this after they were already certified to other systems. This allows us to make a comparison of their experiences with different certifications. We asked them also to give advantages and drawback of these schemes they enter to before UTZ certified (Table 22). Drawbacks are hardly mentioned and the advantages show a similar balance between market accesses oriented considerations and environmental and social improvements.

Table 22 Advantages and drawbacks of participating in other schemes before UTZ certified according to Indian certified tea estate managers

<i>Evaluation of participating in other schemes</i>	<i>Advantages</i>	<i>Drawbacks</i>
Access to global market	6	0
Workers awareness of sustainability	5	0
Better living and working conditions	8	0
Better waste management	5	0
Receive training	4	0
Better product quality	2	0
Brand value/goodwill	2	0
Buffer zone needed		1
None mentioned	(0)	(18)
n =	32	1

Figure 13 Overall evaluation of participating in various sustainability schemes by Indian certified tea estate managers (see online version for colours)



For this tea estate managers the various standards all give comparable advantages. This also reflects in the overall evaluation they have given for the various schemes as shown in Figure 13: sustainability certification are in all cases evaluated as ‘positive’ or ‘very positive’ by all their members.

In Section 2 we observed the need to go beyond an intervention oriented perspective in impact measurement, merely checking if the desired changes described in the theory of change can be observed. Instead a supplier-oriented perspective is needed, including an investigation into the needs and challenges as seen by the suppliers themselves. With a series of open questions we have identified challenges related to the three aspects of sustainability (planet, people, prosperity) as experienced by the farmers themselves. We start with the issues related to prosperity.

Table 23 Major opportunities and threats for economic future of the farm according to Indian tea estate managers

<i>Economic opportunities</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>	<i>Economic threats</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>
Get better prices	11	4	Labour shortage	17	31
Market expansion	14	3	Weather/climate conditions	13	14
Mechanisation	8	24	Input costs rising	10	22
Better environmental/ climate conditions	1	1	Labour costs rising	10	14
Expanding farm size	1		Entrance to high end market/marketing		8
Better marketing to rise sales	2	11	Unpredictable/low prices	3	8
Better interaction with buyers		2	Competition with certified farms		1
Educate workers/labour productivity	2	6	Others		7
Improve quality/yield	9	11			
Reduce input costs		7			
Diversification in crops		8			
Other	1	7			
None mentioned	(0)	(6)		(0)	(1)
n =	48	84		53	106

Table 23 displays the prosperity related issues given by the Indian tea estate managers. We see that certified farmers see more opportunities in entering new markets, raising yields and quality and to some extent implement mechanisation. In contrast non-certified farmers see most opportunities in mechanisation, while secondly aiming for better marketing and raising yields and quality. Discussing the major threats both certified and non-certified farms clearly struggle with the same issues with labour shortage as the most important threat and rising inputs and labour costs mentioned by half of the farmers in both groups.

Table 24 Major opportunities and threats for environmental future of the farm according to Indian tea estate managers

<i>Economic opportunities</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>	<i>Economic threats</i>	<i>Certified (n = 19)</i>	<i>Non- certified (n = 41)</i>
Improve soil conservation	5	4	Climate change impacts (rain, landslides, frost)	7	26
Environmental save waste management	4		Emissions from wood burning	2	1
Increase energy efficiency	4	1	Protect against wild animals	3	1
Increase productivity/ expansion	3	6	Water management/ erosion	2	14
Improve performance (in general) measures	5	7	Expansion of farm restrictions		5
Move to certified production		7	Retain green cover/ soil fertility		7
Improve irrigation facilities		6	Compliance to standards		4
Start with tea tourism		3	other	1	2
Improved protection wild animals		2			
Plant protective wind belts		6			
Improve green cover		6			
None mentioned	(1)	(9)	None mentioned	(10)	(13)
Answers =	21	48	Answers =	15	60

Table 24 presents the ‘planet’ related issues reported by the Indian tea estate managers. We see that certified farmers see opportunities in specific environmental policy issues, like waste, energy and soil. In contrast non-certified farmers see most opportunities in adjusting their farming practices in irrigation and farm layout, applying more green cover and wind protection. This links also quite clearly to the environmental challenges experienced. The non-certified farmers talk far more about impacts of deteriorating environmental conditions, like rain fall, erosion, reduced soil fertility and effects of climate change. One out of six non-certified farmers sees opportunities in moving towards certification.

Finally we discussed the living condition for farm workers. Table 25 summarised the results. Again here we see one dominant theme in the responses. Both certified and non-certified farmers have large problems with attracting a well-trained and motivated labour force. Both groups mostly look into the direction of improving the labour condition, via wages and additional services and by improving education.

Table 25 Major opportunities and threats for living conditions of workers on the farm according to Indian tea estate managers

<i>Opportunities for living conditions</i>	<i>Certified (n = 19)</i>	<i>Non-certified (n = 41)</i>	<i>Threats for living conditions</i>	<i>Certified (n = 19)</i>	<i>Non-certified (n = 41)</i>
Creating more jobs/ better wages	6	1	Wild life threats	4	13
Provide education	4	13	Attract good and young labour force	7	10
Provide medical facilities	5	5	Improve housing quality and sanitation	8	14
Provide yoga, meditation	2		Improve education workers and family	2	6
Provide food, livestock	2	2	Negative media attention	1	
Better environment/ protect from wild live	1	4	Maintenance costs for workers	1	10
Improve labour productivity		6	Higher wages		6
Provide better housing		5	Environmental and climate issues		3
			Medical facilities needed		3
None mentioned	(5)	(16)	None mentioned	(0)	(8)
Answers =	19	36	Answers =	25	66

9 Conclusions and discussion

This study has been conducted to answer the core question about to what extent the application of voluntary sustainable tea certification does result in creating the intended outputs and outcomes in terms of improved sustainability at tea estates and their communities. By applying a counterfactual approach we have been able to show differences and commonalities between two groups of Indian tea estates. Both for the topics of ‘planet’ and ‘people’ we see significant differences in compliance to various crucial better management practices and in their performance. Field observations confirmed these differences. By looking at the various specific better management practices we have also observed that the comparison between certified and non-certified farms does not present a black and white picture. A fairly large share of the non-certified farms also have implemented various of the required practices, like soil protection, appropriate chemical storage or giving access to labour organisations. Yet, at the other hand for some of the legal requirements we found a serious share of non-compliant farms in the group of non-certified farms [24% non-compliance with maternity leave rules, 24% non-adherence to approved crop protection products and maximum residue limits (MRLs)].

Next to the clear differences in ‘planet’ and ‘people’ issues we also see a clear difference in economic performance. Being certified allows farms better access to the

international market, more resilient market relations, with direct contract instead of being dependent on auctions and traders, having a larger part of the yield sold to international brands, while getting a slightly better price and as a result better profitability. However, there are also clear signs that these advantages are fairly weak. The 'better prices' are only slightly higher (Table 17), while various administrative and farming costs are higher (Figure 12, Table 11). For workers the income difference is very small, because general wage regulations are applied similar related to national regulations. However, the working and living conditions at certified farms are significantly better, which also corresponds with the size and quality of the yield.

We have based our conclusions on statements made by the managers, without a detailed financial analysis. It would be good to have a more detailed analysis of full costs and benefits of a small selection of cases from both groups. Also a more detailed analysis of the differences between the various standards might be fruitful (Vermeulen and Metselaar, 2015).

We see significant signs of less environmentally and labour stressing agricultural practices at the certified farms, which also can be connecting to a better ecological and human health at the farms (Figure 5 and Table 16).

To some extent this evidence found in this study may be shown as an example of creating shared value (Porter and Kramer, 2011) in the sense of sustainable supply chain collaboration between buyers and suppliers leading to an improved economic and social and environmental performance. However, this can only be stated to a certain level, because we do observe some serious problems especially from the perspective of sustained economic prosperity.

These findings do contrast clearly to some of the findings discussed in Section 2. Comparing our results in the Indian situation we do see some of the positive effects shown in Table 3, like better farming practices, better quality, better market access, but only a limited improvement in income, productivity and no signs of upgrading. All positive social and environmental impacts were also confirmed in this study.

Looking at the possible negative side effects of certification discussed in literature, we see a mostly contrary situation compared to the issues summarised in Table 3. There is no evidence of ignorance of the certification in Kenya reported by Dolan (2010) and Blowfield and Dolan (2010). All certified farms were well-informed and had clear views on their experiences. Also around one-third of all non-certified farms do have opinions about possible advantages and disadvantages. Here we need to bear in mind that our study addresses larger tea estates, while the studies in Kenya and Malawi address smallholders. The certified tea estate managers do report about additional costs and administrative consequences, but their overall evaluation is clearly positive, stressing both the social and environmental responsibility and the advantages of better management practices and better market position. Gender inequalities or weakened labour unions reported in other studies Kenya (Dolan, 2010; Besky, 2010, 2013) have not been found in the Indian case. In contrast to Waarts et al. we see rather the absence of season workers than an increased use of hired workers in the certified farms (Waarts et al., 2012). Looking at another economic drawbacks of certification reported in literature (Blowfield and Dolan, 2010; van Oorschot et al., 2014; Steering Committee of the State-of-Knowledge Assessment of Standards and Certification, 2012; Fayet and Vermeulen 2012), we have not seen the more often reported problem of insufficient demand for certified products. In the contrary, the certified farms mention better market access both as motive and as one of the most important benefits in their evaluations. One

of the negative impacts mentioned in literature does clearly show up in the Indian case as well, but is rather a signal of a far larger problem. As was also mentioned by Nikoloyuk (2009), we see continued low wages for tea estate workers. There is no difference with non-certified farms in the Indian case, as national and regional regulations are applied by all equally. The requirements of sustainability certification refer to adherence to national or negotiated minimum wages, banning out illegal underpayment. However this does not rule out the existing competition on the Indian labour market and creates a very persistent threat for the continuity of tea estates. The farmers' own narratives are very clear to this point: they can hardly attract sufficient workers under the current conditions. The tea production regions experience a shrinking labour force because young potential farm workers tend to move to the industries in the city regions; because of far higher payment levels (see Table 26). Large differences can be witnessed in minimum wage levels earned by unskilled workers in tea producing areas and those earned by unskilled labour in tailoring or bakeries in the major cities. The minimum wage for tailoring in the capital is three times as high as the minimum wage for agriculture in the tea-producing district of Madurai in Tamil Nadu.

Table 26 Minimum daily wages in agriculture and tailoring

<i>City/district, state</i>	<i>Minimum wage (Rs) in agriculture (unskilled)</i>	<i>Minimum wage (Rs) in tailoring (unskilled)</i>	<i>Minimum wage (Rs) in bakeries (unskilled)</i>
Tea producing areas			
Madurai, Tamil Nadu	128	143	153
Darjeeling, West Bengal	193	231	231
Major cities			
Calcutta, West Bengal	193	231	231
New Delhi, Delhi	311	311	311
Mumbai, Maharashtra	n.a.	299	306

Source: Data January 2013, based on
<http://www.paycheck.in/main/salary/minimumwages/tamil-nadu>,
 'dearness allowance' not included

Level of payment is directly linked to the overall quality of life of people in remote rural areas, and is also recognised by the farmers themselves, as we have seen in their perceptions of future threats and opportunities. They refer to better wages, improving living conditions and raising the level of educations as ways out, but are hardly able to solve these issues by themselves, in their dependency on (international) buyers. The issue is also on the agenda of leading certification organisations, which recently collaborated in a study on the living wages issue in the international tea market (Ethical Tea Partnership and Oxfam, 2013). In this project it was observed that living wages for tea estate workers and their families in India are barely above the International UN defined extreme poverty line. The current legal minimum wages assurance practice of certification programs and international brands is seen as too simplistic in this context and various dialogues are taking place on these issues, however without a clear solution yet.

Given the positive evaluation of certification practices on most of the other aspects of sustainable tea production the key question rising from these results is to what extent and under which conditions a further growth of the share of sustainability certified tea

production is possible. The study clearly shows a divide between the two types of tea estates: the certified and the non-certified. They serve different markets and follow different business models in their relations with buyers. The certified estates visited have a longer history of change towards sustainable production practices and are used to this export oriented perspective with direct contracts. A further growth of the share of certified tea production will need address two main challenges: export market growth and implementing sustainability strategies in the domestic market.

For the first challenge there are clear opportunities for connecting to a part of the current non-certified estates currently mostly focussing on the domestic market. This would require supporting them in the necessary changes to be made, which would be a first responsibility for the international tea brands (Porter and Kramer, 2011). The data shows that about a quarter of this group may be interested in entering this new international market and are already compliant to a part of the requirements, but we also identified a larger knowledge need in this group on issues of crop production, business skill and farm maintenance (Table 4).

The second challenge relates to the fact that 4/5th of the tea production in India is supplying the domestic market. Any ambition to improve the ambitions formulated in the UN 'Ten years framework on sustainable consumption and production' ultimately brings a better quality of life also in developing countries (United Nations, 2012) would require engagement in creating markets for sustainable products on domestic markets in developing countries as well. Some initiatives have been taken in the Indian tea market recently (like projects by Trustea, Hindustan Lever Limited or Just Change (see Trustea, 2014; Hanspal and Lakshminarayanan, 2013), but these will require upscaling with joint effort of joint efforts of certification organisations, the tea sector, the Indian government and knowledge institutes.

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Notes

- 1 Our original intention was also to conduct interviews at farms in Darjeeling, but this was cancelled because of political unrest in the region during the time of study.
- 2 In order to be able to compare over 60 farms the time investment for responds needs to be limited and detailed analysis of costs and revenues is not possible. Such a detailed approach would also highly increase the risk of non-response. For the purpose of our study using a Likert scale-based self-assessment serves as a sufficient source of information, because farm managers usually are very well aware of the their profits or losses in recent periods.
- 3 Soil: the estate is using techniques to prevent soil erosion and to improve soil structure and fertility; fertiliser: implement a fertiliser program to ensure that the type and amount of fertilisers are in line with the needs of the soil and applied at the right time; energy: the estate keeps records and monitors the use of energy and measures are taken to use energy more

efficiently on the farm; crop protection: we consult and adhere to the lists for approved crop protection products and MRLs for the EU, USA and/or Japan; water stream protection: allow a strip of native vegetation to grow along water streams and sources and not apply agrochemicals within five metres from any water stream.; conservation: conduct an environmental risk assessment and implement a conservation plan

- 4 Health: workers receive adequate training on healthy and safe practices, such as the handling of hazardous substances and dangerous equipment and machines; protection: at the farm we indicate potential hazards, we provide suitable protective clothing to workers that apply hazardous crop protection and guard dangerous parts of machines; sanitation: we provide (or improve) clean toilets and hand washing facilities or equipment in the vicinity of work, living and eating sites; housing: we provide (or improve) clean and safe housing facilities; labour organisation: workers have the possibility to join a labour organisation. Representatives of such organisations are allowed to see their members on the farm; wages: workers are paid gross wages that comply with national legislation or collective bargaining agreements, whichever is higher. Workers are earning at least the national or sector established minimum wage.
- 5 Ibid.