



**ASSESSING THE POTENTIAL OF PRIVATE SECTOR
ENGAGEMENT IN MARKETS AND PAYMENTS FOR
ECOSYSTEM SERVICES (PES) IN EAST AFRICA**

**With a Synthesis of Case Studies
from
Kenya's Tourism Industry,
Tanzania's Coffee Industry &
Uganda's Tea Industry**

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The views expressed in this report are not necessarily those of the participants. Any errors and omissions are the responsibility of the author.

SECTION 1: INTRODUCTION

An April 2008 McKinsey and Company survey¹ found that the second (out of fourteen) global trends relates to “increasing constraints on supply or usage of natural resources.” 34% of respondents now believe natural resource constraints are likely to have “a negative impact on profits over the next five years.” Yet, the survey also found that many companies lack the capacity to deal with natural resource constraints. About 30% of companies have taken actions to address this and other critical trends. Moreover, only 17% report significant benefits from the actions they take.

These findings resonate with recent East and Southern Africa Katoomba Group (E&SA KG) surveys. Specifically, a February 2007 survey in Uganda found that while most companies were becoming aware of linkages between their core operations and critical ecosystem services on which they rely, few had a systematic way of understanding the threats and opportunities stemming from potential natural resource supply constraints. Possible benefits associated with payments for ecosystem services were also commonly overlooked. In addition, none of the businesses surveyed had any strategy in place for investing in the restoration and maintenance of ecosystems for reliable flows of ecosystem services. However, all companies recognized the need for further capacity building related to understanding ecosystem services-related business risks and opportunities.

This report synthesises the findings of the E&SA KG 2009 survey that expanded upon and deepened this work by examining the following businesses, detailed in Annex 1:

AGRICULTURE
Association of Kilimanjaro Specialty Coffee Growers (KILICAFE-Tanzania)
Igara Growers Tea Factory (IGTF- Uganda)
Kayonza Tea Growers Factory (KGTF-Uganda)
Kilimanjaro Native Co-operative Union (KNCU-Tanzania)
Machare Coffee Estate (Tanzania)
TOURISM
Ecotourism Kenya
Il Ngwesi Eco lodge (Kenya)
Intercontinental Hotels and Resorts Ltd
Kigio Wildlife Conservancy
Malewa Wildlife Eco-Lodge
Serena Tourism Promotion Services Ltd.

The survey specifically looked at business’ interface with land, water, energy and any opportunities that may exist for them to engage in PES.

¹ How Companies Act on Global Trends: A McKinsey Global Survey; April 2008;
http://www.mckinseyquarterly.com/how_companies_act_on_global_trends_a_mckinsey_global_survey_2130

This report lays out the changing business context, business' interface with the environment and implications for PES, and next steps for companies operating in the agricultural and tourism sectors in Uganda, Kenya and Tanzania to engage in markets for ecosystem services. Further background information on the industries in Uganda, Kenya and Tanzania can be found in Annex 2.

SECTION 2: A CHANGING BUSINESS CONTEXT

Agriculture accounts for roughly 14% of global GHGs or about 6.8 Gt of CO₂ equivalent (e) per year (IPCC 2007). GHG emissions from land-use change, including deforestation in tropical areas, are around 17% of total GHG emissions. In most countries they are associated with agricultural activities and exceed emissions from all other agricultural sources. About 74% of total agricultural emissions originate in developing countries. Equally significant is the high potential that the agriculture sector offers for synergies with climate change adaptation and key co-benefits of relevance to sustainable development. Current global financing mechanisms have not enabled the capture of the potentially large mitigation effects that agriculture could provide, but efforts are underway to change this and countries in East Africa that are highly dependent on agriculture stand to gain if these initiatives are successful. .

Africa's market share of global international tourism is projected to be 5% by 2020,² most likely a figure that is dependent upon the maintenance of ecosystems and biodiversity as well as the ability of the hospitality industry to offer increasingly environmentally friendly practices. The result is that tourist operators and hotel managers in Africa have a vested interest in ensuring that the ecosystems are maintained and restored, and their hotels promote a sound environmental code of conduct. Ecotourism Kenya has recognised this opportunity and established a rating scheme that rewards hotels and eco lodges that protect and enhance the natural and cultural environment where they operate. The rating scheme has grown in recognition with most high quality hotels are seeking the rating, and it will soon add carbon offsets to its criteria.

Furthermore, buildings – including hotels, offices, industrial and residential- account for about 40 percent of the world's greenhouse gas emissions (more than transportation and industry).³ Heating and cooling are the most energy intensive activities, followed by electricity use for lighting, appliances and other services. New comprehensive research by the *World Business Council for Sustainable Development* shows that good practice can substantially reduce GHG emissions by as much as 70 to 80%, create jobs and stimulate economies while also mitigating climate change.⁴ Hotels worldwide are starting to adopt good practice and it is slowly moving to Africa where they have franchises.

² UN World Tourism Organisation Tourism Barometer; <http://www.unwto.org/media/news/en/pdf/PR0801003en.pdf>

³ *Transforming the Market; Energy Efficiency in Buildings* (April 2009): The World Business Council on Sustainable development; Report is available at www.wbcsd.org

⁴ *ibid*

Markets and payments for ecosystem services such as carbon sequestration, biodiversity friendly goods and services and watershed services offer an innovative way for businesses and governments to tackle conservation challenges. Lack of information, technical expertise and required institutions have limited the scaling up of such markets in East Africa, however interest is growing and the need to address growing water scarcity and climate change concerns is already pushing Governments and businesses to consider market solutions.

SECTION 3: BUSINESS INTERFACE WITH THE ENVIRONMENT & IMPLICATIONS FOR PES

LAND

Payments to farmers for environmental services (PES) on their land can encourage them to change land-use practices and make farming more environmentally friendly. They could also serve to address growing concerns about climate change, biodiversity loss and water supply.

Ranging from 100 to 60,000 hectares (see Table 2), land is clearly an important resource for all the companies surveyed. Tanzanian coffee farmers appear to have the most land under production (approx. 20,000 ha on average) while Ugandan tea farmers have more land available (200,000 hectares according to the Uganda Tea Association), but much less under tea production (approximately 2,200 ha on average). Improved land use and management practices such as: (1) improved crop rotations, (2) improved fallows, (3) reduced tillage and (4) increased agroforestry practices, if properly implemented, can address some of the challenges cited by the agricultural survey respondents such as erosion and soil fertility loss, loss of land productivity,⁵ loss of natural vegetation due to slash and burn, land degradation⁶ and destruction of water catchments. These practices would also maintain soil carbon stocks, sequester CO₂ while also improving agricultural productivity and sustainability. Improved nutrient management, to increase the plant uptake efficiency of applied nitrogen, can also reduce N₂O emissions, while contributing to soil carbon sequestration.

Table 2: Estimated Amount of Land Used by the Companies Surveyed

⁵ For example, KNCU respondents said the family redistribution of land for house construction and traditional graveyards reduce the amount of land required for coffee production. They plan to increase coffee yields through coffee replanting and replacement of old trees. They are also trying to adopt high-density coffee farming as part of boosting coffee yields.

⁶ For example, the Kenya survey results reported weak policies and law enforcement have reduced Kenya's gazetted forests to 1.4 million ha or 1.7% of total land area. (Far less than the internationally recommended minimum of 10% for a country's forest cover.) In addition, new settlements encroaching into wildlife feeding and breeding routes have forced wildlife to migrate to unencroached zones denying tourists a chance to see them, thus impacting on the revenue stream of the ecolodges.

Company	Land Occupied (hectares)	Ownership
Igara Tea Factory	3,000	Farmer owned
Kayonza Tea Factory	1,604	Farmer owned
KNCU	27,114	Farmer owned
KILICAFE	15,000	Farmer owned
Machare Coffee Estate	145	Private Lease
Il Ngwesi Eco Lodge	60,000	Maasai Community owned
Kigio Wildlife Conservancy (<i>including Malewa Eco-lodge</i>)	1,416	Private concession
Serena Hotels	N/A	Private
Intercontinental Hotels & Resorts	N/A	Private

**Some figures provided by respondents and others sourced from websites*

**N/A means figure not available*

Payments to farmers can be direct payments by governments to producers or indirect transfers, such as consumers paying extra for a cup of “conservation friendly” shade-grown coffee or tea. There are already examples of such extra payments being made for certified coffee and tea in Uganda, Kenya and Tanzania with price premiums from Fair Trade (www.fairtrade.co.uk) and Café Direct [www.cafedirect.co.uk]. The coffee and tea farmers surveyed cited premiums ranging between 16% to 25% higher than the market price. The premium is in recognition of the social and environmental standards that the farms have adopted. One challenge of this approach is that currently these payments only reach a handful of coffee farmers or plantations that have entered into memberships with Fair trade and Café Direct. In order to make a difference such payment schemes need to be scaled up to reach more farmers. One possible approach would be to get Government involved to support the costly changes in land use practices that are required to get such payments. Furthermore, the National Auctioning Boards that sell the final product need to take into account the environmental services and incorporate them in the final price. In Tanzania, the auctioning board is considering adding the certification label to the coffee. Certification

ENERGY

One way for businesses to reduce their ecological and carbon footprint is through improved energy efficiency and making use of clean technology. The Carbon Market provided for under the UNFCCC Clean Development Mechanism (CDM) provides an opportunity for businesses to reduce their footprint and make money by selling emission reduction credits. Improving energy efficiency also means significant cost reductions. According to the latest State of the Carbon Markets Report⁷ an estimated technical potential of more than 3,200 CDM projects, including 361 Programme of Activities (PoAs) exist for clean energy in Sub-Saharan Africa. If realized, this could provide more than 170 GW of additional power-generation capacity, which is more than twice the region’s current installed capacity.⁸ As of April 2009, two of the nine PoAs at validation

⁷ *State and Trends of the Carbon Market 2009*; The World Bank, Washington DC

⁸ C. de Gouvello, F.B. Dayo and M. Thioye (2008). *Low-carbon Energy Projects for Development in Sub-Saharan*

– include countries from sub Sahara Africa (South Africa and Uganda). These PoAs explore, among others, efficient lighting, solar heating and waste management potentials. The companies surveyed have a large energy footprint from a range of energy sources including hydropower, solar, thermal (via diesel generators) and fuel wood.⁹ The total estimated amount and types of energy used by each sector is laid out in table 4 below.

Table 4: Estimated Amount/Types of Energy Use by the Sectors Surveyed
(measured in kilowatt hours per day – kWh)

Sector	Hydro-Electric Power	Thermal Energy (Diesel Generators)	Solar	Total
Coffee	500	480		980
Tea	2635	480		3,115
Eco lodges			27.9	27.9
Hotels	1247			1, 247

**Some figures provided by respondents and others sourced from websites*

**N/A means figure not available or not reported.*

The Tea sector uses firewood to generate steam used for drying tea, hydro-power to fire electrical motors used for withering and rolling, and electrical lamps for factory lighting.

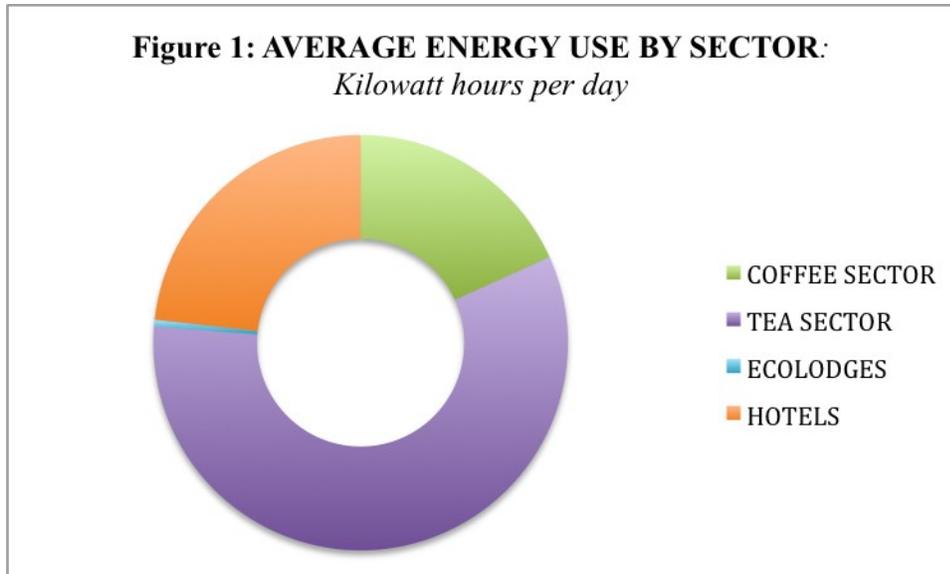
The Coffee sector uses energy mostly for the application of agrochemicals, which require: diesel driven machinery, electric field sprayers/pumps, security lights at the processing factories, hydro-electricity (low and medium voltage) either from the grid or micro hydropower electric units for farms diesel driven generators are used when the national electricity supply is down.

Both the Ecolodges said they rely only on solar energy. The Intercontinental Hotels Group (IHG) reported that their hotels globally use approximately 18.2 billion Kilowatt-hours (kWh) per annum. (Approximately 1,247 kWh per hotel per day). IHG estimated that in monetary terms this is equivalent to approximately US\$1.9 billion in energy purchases per year; and almost US\$500,000 in average hotel energy expenses. Hotel energy expenses at individual hotels are still being calculated.

On average, as illustrated by figure 1 below, the agricultural sector appears to be a high emitter compared to the tourism/hospitality sector.

Africa: Unveiling the Potential, Addressing Barriers. The World Bank

⁹ For example, A carbon footprint study done on Machare farm—the only one of the farms surveyed to have had one done—which found both, electricity supply and provision of thermal energy have a significant share of 65.5 % to the overall CO₂e emissions in the coffee roasting plant (including packaging). Finally, it should be noted that both the tea and coffee farms transport their products to the sea for shipping and therefore also contribute to transportation emissions.



All the companies surveyed have put in place a variety of energy saving measures ranging from using energy savers, replacing diesel generators with hydroelectric generators, reducing heating and cooling, to mention a few (See Annex 3 – Table 5 for more details). However, most of them were not aware of the opportunity to sell emission reduction credits through the carbon market. With the growing opportunities for Africa, the businesses need to be made aware of this market and assisted to calculate their baselines and both quantify and market their emission reductions.

WATER QUANTITY & QUALITY

Payments for watershed services (PWS) are an innovative way of using markets to provide incentives for better water management. Payment schemes link upstream land use and management with downstream water use and management. PWS schemes could involve a direct payment from a downstream user to an upstream land manager or a cap and- trade scheme, which establishes a cap for water abstraction or pollution and enables trading of permits among water users

All the companies surveyed cited water as a vital resource and some of them had a very large footprint. For example, Intercontinental Hotel’s annual average annual consumption per room was estimated at 347,000 litres in 2008 (approximately 950 litres per room, per day).¹⁰ Even though this data is an average only and does not capture the large range of use that exists in IHG global hotel estate, it is still indicative of the level of water use. Similarly, the tea factories depend on water for wash down of tea ‘chopping’ machinery and steam for drying and withering; while the Arabica coffee growers need water to pulp, ferment and wash the coffee in order to maintain the quality required.

Table 3: Estimated Amount of Water Use by the Companies Surveyed

¹⁰ www.ihg.com/environment

Company	Amount of Water (Litres per day)	Source
Igara Tea Factory	10,000	Rain, Reservoirs
Kayonza Tea Factory	50,000	Protected spring, community gravity scheme
KNCU	N/A	Rain, Furrow (ground) water
KILICAFE	N/A	Rain, Furrow (ground) water
Machare Coffee Estate	115,000	Rain, Furrow (ground) water, recycled waste water
Il Ngwesi Eco Lodge	10,000	Nearby river/ stream
Kigio Wildlife Conservancy (<i>including Malewa Eco-lodge</i>)	10,000	Nearby river/stream
Serena Hotels	N/A	
Intercontinental Hotels & Resorts	244,882	

**Some figures provided by respondents and others sourced from websites*

**N/A means figure not available or not reported.*

Both the agriculture and hospitality sectors face significant challenges in sustaining water quantity and quality required¹¹. The expansion of urban populations, as well as fertilizer run-off from industry and flower farms has affected the quantity and quality of water available to the farms and ecolodges. The eco-lodges near major cities are in direct competition with municipalities and electricity generating companies for the little available water.¹²

Given the high level of water scarcity and very many competing users, it may be possible to set up a *cap and trade scheme* which establishes a cap for water abstraction or pollution and enables trading of permits among water users. PWS could come from the competing sources: sources: hydroelectric power suppliers, large industrial users, municipal water suppliers, and irrigation water users.

It should be noted that setting up such a scheme would require existence of the right institutions to do the monitoring and manage the trading. Such institutions are currently non-existent in East Africa, however, with water quality problems increasing, both Government and the private sector

CLIMATE CHANGE

The market response to climate change has largely aimed at reducing the building concentration of

¹¹ Machare Estate, for example, illustrates the water stress that faces Tanzania. The Estate depends on both rain-fed and irrigated coffee farming. The Estate shares furrow water with the neighboring villages. This creates a shortage due to the fact the villages use surface irrigation while estates use overhead and drip irrigation. Furthermore, the irrigation technology used by the villagers, which is surface irrigation, can result in soil erosion and soil degradation due to runoff.

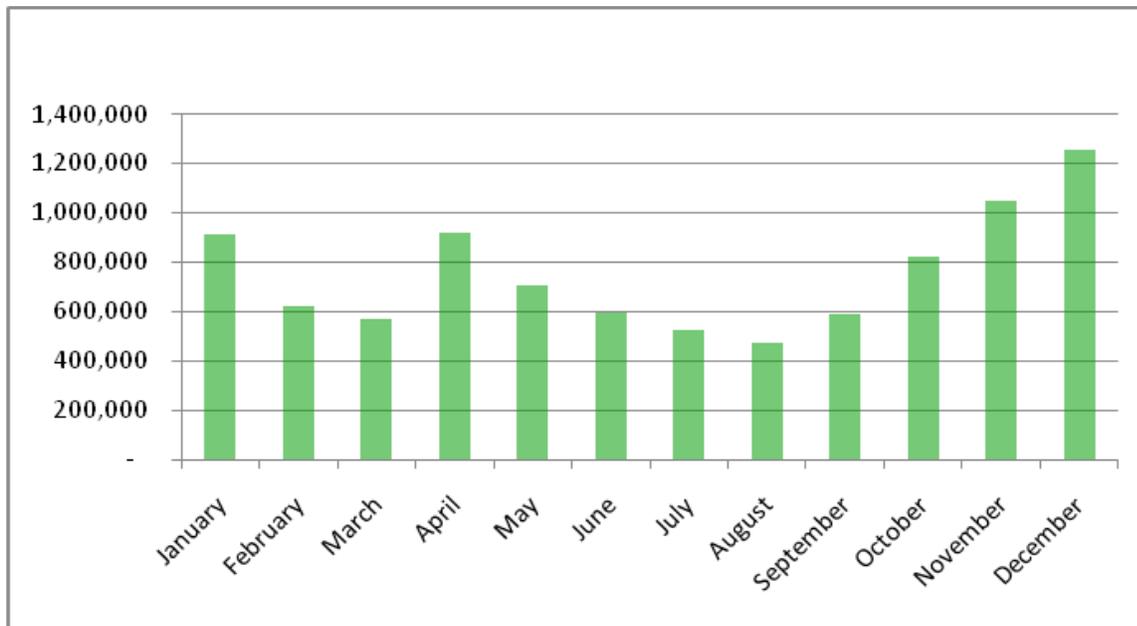
¹² For example the Malewa and Kigio Eco-lodges near Naivasha municipality, are in direct competition with the flower farms and Kenya Electricity Generating Company (KenGen) for water use. According to the respondents to the survey, hydroelectricity has led to drastic reductions in water levels in the eco lodges. The eco-lodges also said that water scarcity has led to the migration of wildlife to other areas of the conservancy with water points. This has affected the breeding seasons and impacted negatively on tourism revenue since the Maasai are forced to move with their animals in the search for water, yet it's the Maasai that most tourists are interested in.

carbon dioxide in the atmosphere through carbon trading. Rather than rigidly forcing the reduction of emissions company-by-company, the market creates a choice to either spend money to cover the costs of cutting emissions, or continue polluting (emitting), and pay someone else to cut their pollution.

Climate change has already had significantly impacts on agriculture in East Africa in light of the fact that most farmers depend on rain-fed agriculture. The tea and coffee farmers surveyed had already felt the impacts of climate change. Specifically, farmers said in some areas, too much rain had reduced flowering, which reduced production and hindered farmers' ability to dry the coffee beans properly. This had impacted on quality. At the same time too much rain increased diseases, pests and mould, which again affect both production and quality. In other areas erratic, rain, with periods of drought within either of the rainy seasons, shriveled flowers, aborted fruits and reduced soil fertility. Kayonza Tea Factory reported that short and scattered rainy seasons in 2008 had resulted in large variations in green leaf yields. Figure 2 below illustrates this variation. Also a hailstorm in Tanzania in February 2009 damaged the shade trees and coffee in some areas. Coffee yields are, therefore, expected to be low for 2009/2010 crop year– although the extent of the crop loss has not yet been established.

Last but not least, the Eco-lodges reported feeling climate change effects through water shortages as some of the streams they depend on for water supply had dried up due to the prolonged dry season in 2008.

Figure 2: Monthly variation of Green leaf received (in Kg) at Kayonza Tea factory for 2008



Source: Kayonza Tea Factory Files accessed during the survey; March 12, 2009

There are various opportunities for farmers and the hospitality sector to engage in the carbon market (some of which have already been discussed in the energy and land sections). Other opportunities to engage in markets are discussed in the next section

SECTION 4: NEXT STEPS TO ENGAGE BUSINESSES IN MARKETS FOR ECOSYSTEM SERVICES

Results of the survey show a large energy, water and carbon footprint by the businesses' in question. Businesses are becoming aware, however, and are beginning to explore reducing their footprint. Yet, few business decision-makers are aware of opportunities offered by markets and payments for ecosystem services in creating financial incentives to make further reductions and/or investments in ecosystem services upon which they rely.

Following on the research to date, the second phase of this work will focus on working with interested businesses to survey pathways forward within their companies, such as:

1. Quantification, Verification and Marketing of Emission Reductions

a) Emission Reductions from Fuel Switching and other activities: All companies surveyed reported fuel switching and other efforts to use clean energy that would most likely result in emission reductions. However, none of the businesses have calculated the emissions reductions and none were aware that a market for reductions existed. A feasibility study of two of Uganda's tea industries¹³ found that 465 tons of CO₂ emissions could be avoided on an annual basis¹⁴. Similar feasibility studies can be carried out on other factories if there is interest.

Next Step: Businesses need E&SA KG technical support to carry out a baseline of emission levels before the current energy reducing activities to determine the reductions.

b) Carbon Storage by Shade Trees: In principle the carbon storage by shade trees should be considered as it is directly connected to the coffee plantation but currently this is not the case. On most of the coffee farms, over 10,000 shade trees with up to 100 years age already exist. Additionally many new shade trees have been planted on the farm during the last years. The CO₂-fixation of the shade trees connected to the coffee cultivation needs to be taken into account, and the sold through the carbon market. This would provide an opportunity to compensate the GHG emissions directly inside of supply chains. Machare Coffee Estate is exploring this possibility with the Rain Forest Alliance and other coffee farms are interested in exploring the same possibility if they can be assisted.

Next Step: The Coffee sector needs ESA KG technical support and guidance to explore this possibility.

2. Carbon Offsetting for The Ecotourism Industry and The Airline Industry

a) An Ecotourism Industry Carbon Offsetting Service: All hotels and eco-lodges

¹³ Greening the Tea Industry in East Africa Small Hydro Power Plant Pre-feasibility Study- *Nchwera and Warugo* Uganda; 15th March 2006; www.greeningtea.unep.org

¹⁴ *ibid*

surveyed are members of the Eco-tourism Kenya and have been eco-rated based on minimizing waste, energy and pollution of natural resources, safely disposing of waste, participating in management of natural areas, educating visitors in local cultures, beliefs and values, promoting sustainable tourism, and seeking voluntary certification. The one item missing from the current scheme is a rating on carbon offsets. Therefore, one PES opportunity could be to upgrade the rating scheme to award more points or a higher rating for those entities that are offsetting their carbon footprint in addition to all the other requirements.

Participants suggested development of an eco-tourism industry carbon offset service with EK vetting the projects that are selected for offset. Something similar to the US tourism industry carbon offset service (TICOS) which is an industry wide programme aimed at stimulating the collective action of tour operators and travel agents selling holidays which include air or other forms of travel, to offset their emissions. Similarly, Ecotourism Kenya can stimulate collective action of all its members to do the same. This could stimulate action even in individual hotels to ask their guests to offset emissions.¹⁵ Serena and Intercontinental Hotels could do the same. Hotel guests greening their stay while in Kenya could contribute and pay in cash an agreed equivalent of one carbon offset per night that will go towards conserving Kenya's Aberdares or other identified forests.

Next Step: Ecotourism Kenya will carry out a baseline study on existing members' willingness to enter into such a scheme. There is a need ESA KG assistance to design the survey and to educate members.

b) An Airline Industry Carbon Offsetting Service: Even though the airline industry was not a focus of the survey, participants recognized the synergies it has with the hotel industry and they noted examples where carbon offsets are already happening in Kenya and can be replicated. For example, *Safari Link Aviation limited* (a medium sized commercial aviation company based in Nairobi) has taken the decision for their flights to be "carbon-neutral" from 2009. This will be achieved by a major involvement in an indigenous tree planting exercise on the foothills of Mount Kenya within the Mount Kenya National Reserve. The number of trees necessary to achieve the carbon-neutral target will be based on the a calculation linking the hours flown by the Safari link fleet, their fuel consumption rate, a documented conversion rate for Jet A1 fuel to carbon dioxide and the "lock up" factor for the trees has decided to offset its carbon emissions and become carbon neutral.

These seedlings are sourced from community members living upstream of this catchment area. The practical aspects of growing the saplings, their planting, and equally important, and their subsequent care is under the supervision of the Bill Woodley Mount Kenya Trust. A similar effort is also taking place between the Born Free Foundation and the Bill

¹⁵ For example, [guests at Marriott hotels can now offset the carbon created by their stay as part of Marriott's 'spirit to preserve' programme. This allows guests to offset their carbon emissions online, with a minimum contribution of \\$10 \(equivalent to ten nights\).](#) By greening a stay in a Marriott hotel, a guest can contribute to conserving the Amazon forest. For more see <http://www.business traveller.com/news/marriott-launches-carbon-offset-programme>

Woodley Mt. Kenya Trust. <http://www.bornfree.org.uk/campaigns/further-activities/carbon-offsetting/>

Next Step: Need E&SA KG to educate the Airline Associations in East Africa and work with them to set up an industry-wide scheme.

3. Recognizing Environmental Services through Premium Prices

a) Educating the National Auctioning Boards: Despite the fact the most of the coffee estates are certified, the coffee sold through the national auctioning boards does not recognize any certification. In fact, at the moment, such coffee is not labeled with a certificate. Unfortunately, this constitutes about 70% of what farmers produce as “Café Direct”, Starbucks, Peets Coffee, and other external buyers. Therefore, the coffee, which has gone through all the processes required by certification bodies is sold at the auction price – which has no premium.

Next Step: Need ESA KG assistance to educate Auctioning Boards about the environmental services associated with the conservation friendly practices that lead to such certification and the payments for such environmental services through premiums.

ANNEX 1: OVERVIEW OF SURVEY ORGANIZATIONS

Igara Growers Tea Factory (IGTF- Uganda) was established in 1969 by the Uganda government to process the smallholder farmers' leaf within Bushenyi district in Southwestern Uganda. The management of the factory, like all other smallholder tea factories in Uganda at the time, was by Uganda Tea Growers Corporation (UTGC), a government parastatal. In 1995 the factory was privatized by the government and sold to the farmers who are now the shareholders of the factory company. They are 2,900 shareholders that manage the company through a democratically elected Board of Directors. The teas of Igara are produced at a high altitude of 5,800 feet above sea level, which makes them bright, brisk and strong enough to compete with most blends around the world. The factory has four nuclear estates that receive 1,612 millimeters of rainfall. Last year (2008), the quantity of tea was affected by the dry season as well as chemical fertilizer shortage due to post election violence in neighboring Kenya, the main transport route for Ugandan goods.

Kayonza Tea Growers Factory (KGTF-Uganda) is 100% farmer owned with 4,237 shareholders and a total of 200,000 shares. Only farmers can buy shares. The supreme governing body is the shareholders' Annual General Meeting (AGM) that elects a Board of Directors responsible for overseeing management affairs. KGTF is managed through Uganda Tea Development Agency Limited (UTDAL) which is a management agency owned by both Kayonza & Igara factories. About 600 other employees support management. The factory is located in a remote area in Kayonza sub county, Kanungu district in southwestern Uganda bordering with Bwindi Impenetrable National park that is home to the famous and endangered mountain Gorillas. The company obtains its green leaf for tea processing from two core estates and 4,500 smallholder tea farmers currently producing tea over a total area of 1,604 hectares. Average area for the smallholder tea farmers is 0.3 ha with 50% of the farmers cultivating below 5 ha, 45% between 5 and 10 and only 15% above 10 ha.

Kilimanjaro Native Co-operative Union (KNCU-Tanzania), Africa's oldest coffee cooperative, was founded in 1924 as a marketing organization for the indigenous farmers of the Chagga tribe living on the slopes of Mount Kilimanjaro, Africa's highest mountain. Along with all of Tanzania's coffee cooperatives, KNCU was abolished by the government in 1976, but then reinstated in 1984. Today, KNCU collects coffee from 96 village societies, representing over 150,000 small-scale farmers. Due to the perfect climate in Kilimanjaro for coffee and the fertile volcanic soils, the area produces one of the best Mild Arabica coffees. Their smooth, mild beans are considered to be among the finest in Africa. Coffee is usually intercropped with bananas. KNCU trades more than 5,250 tons of Arabica coffee, or about 11 percent of the national production. KNCU is certified as both "Fairtrade" and "Organic" and exports most of its coffee as such. Total production is approximately 225,000 bags and export volume is estimated at about 30,000 bags. For more visit www.kncutz.com

Machare Coffee Estate (Tanzania) is privately owned by two families that took on the adventure of leasing a run down coffee farm on the slopes of the Kilimanjaro in 1988. Today Machare Estate is to 85 % rehabilitated. The farm is located right below the rainforest at an altitude of 1350 m to 1550 m above sea level. The total size of the farm is 145 hectares, with about 38 ha under river & nature reserves; a fully productive area of about 50 ha; and a newly planted area of 20 ha. Coffee varieties produced on the farm are *Bourbon* and *Kent* grown under shade tree species *albizia* and *grevillia*. Production is approximately 70 metric tones. Machare Estate was the first *Utz certified* coffee farm in Tanzania from 2004 to 2007. It became *Rainforest Alliance* certified in September 2007 – and is once again the first coffee estate in Africa to obtain that certification. The certification stands for high social standards, environmental protection and sustainable farming. For more visit www.macharecoffee.com

Association of Kilimanjaro Specialty Coffee Growers (KILICAFE-Tanzania) is a smallholder

association that was launched in 2001 by 10 groups. By 2006, the association was representing 102 groups with 8000 Smallholder members groups in Tanzania 's three Arabica-growing areas; Kilimanjaro, Mbonga and Mbeya, each committed to producing high-quality coffee for the specialty market. The association supports coffee producers particularly in three dimensions; raising and promoting better coffee quality, securing access and obtaining finances (credit facilities) and securing and linking to better paid coffee markets. Like all coffee originating from Kilimanjaro, KILICAFE coffees benefit from volcanic soils and high altitudes ideally suited to the cultivation of exceptional mild Arabica coffee. Kent and Bourbon varieties are grown at altitudes between 1500m and 1800m. KILICAFE has been a “fairtrade-certified” producer since September 2004. KILICAFE has also acquired “Café Practice verification” after being critically inspected by Starbucks. *For more visit www.kilicafe.com*

Kigio Wildlife Conservancy is a 3,500-acre conservancy between Nakuru and Naivasha in Kenya with wide ranging habitats, from riverine and euphorbia woodlands to short grass and Leleshwa shrub, holds approx. 3,500 heads of wildlife (including the endangered Rothschild Giraffe, a 200 strong herd of buffalo, impala, Grant's and Thomson's gazelle, eland, hyena, leopard, hippo and over 250 bird species) which are protected by an electric fence on three sides and the Malewa River on one. The Conservancy's rich bio-diversity has been recognized internationally by *Tusk Trust, Born Free Trust, Lewa Wildlife Conservancy* and several private donors who have provided funds to improve the infrastructure in the conservancy and to help wildlife conservation and surrounding communities. The Conservancy is at the forefront of eco-tourism in the Rift Valley lakes area. *For more visit <http://www.kigio.com/>*

Malewa Wildlife Eco-Lodge is situated within the Kigio Wildlife Conservancy. It is set within yellow acacia woodland along the Malewa River that attracts over 250 species of exotic birds. Once a rudimentary lodge, it has been transformed into a luxury eco-lodge incorporating traditional African building methods and concepts. Accommodation comprises of 6 bedrooms all offering en-suite bathrooms within an acacia forest filled with wildlife. To comply with the eco-footprint, electricity is generated by solar power, waste recycled, water drawn using hydro power, hot water supplied by efficient 'kuni' boilers, cooking done with gas and eco-bricks from sustainable sources and food sourced from local farmers. The lodge and the conservancy work closely with the surrounding communities to offer wildlife courses, placements to students and assistance to schools, clinics and local enterprise. *For more visit <http://www.kigio.com>*

Il Ngwesi Eco lodge (Kenya) was built in 1995 using funds donated through the Kenya Wildlife Service. Il Ngwesi which means “**people of the wildlife**” was Kenya 's first community-owned and managed lodge in the country. It has proved enormously successful, and has won many awards, including a *British Airways 'Tourism for Tomorrow' award, Conde Nast Traveler 2003 Eco Tourism winner in the Hotel/Lodge category and Harpers and Queens "Best 101 Hotels 2003"*. Il Ngwesi Group Ranch is a collectively owned initiative of 499 local households that incorporates the eco-tourism lodge and a locally led committee responsible for land and resource management. With the revenue from the lodge, the Il Ngwesi community has paid for many social developments, such as the provision of school bursaries and the construction of a primary school and three nursery schools. Funds have also been directed into water maintenance and health schemes. The Il Ngwesi project won the **2002 UNDP Equator Initiative Award** for their success in tapping the biodiversity of their environment for economic gain and community development. Training and awareness workshops have become an important part of the picture as they cover wildlife conservation project management and the further development of sustainable resources. It is the supporters' objective to make Il Ngwesi entirely self-supporting, except in areas where there are economies of scale in LWC continuing to provide services. This will be achieved by additional training programmes and by moving the lodge up-market in order to generate additional revenue. *For more visit <http://www.ilngwesi.com>*

Serena Tourism Promotion Services Ltd operating under the “Serena” brand name owns and manages 32 hotels in Africa and Asia. The mandate of Tourism Promotion Services is to realise tourism's potential in

selected areas of the developing world, in an environmentally sensitive manner. According to their 2007 annual report, Serena recognizes that it has a responsibility to contribute towards improving and preserving the environment in which it operates. It exercises this responsibility by contributing to conservation and educative programmes that assist communities to manage and preserve their environment. *For more visit www.serenahotels.com*

Intercontinental Hotels and Resorts Ltd has over 4,000 hotels globally (including a 376-room hotel in Kenya and 6 others in Africa) Intercontinental Hotels & Resorts contributes a large part to the building emissions worldwide, which are estimated at 38% of carbon; 19% of NOX; and 52% of SO₂.¹⁶ IHG and other hotels are facing increasing pressure to balance its economic, social and environmental performance as more attention is given to their impacts in the context of climate change, impacts on local communities and how they should respond to the current economic downturn. For its part, IHG in 2007 and early 2008 commissioned a carbon footprint study based on a sample of their brands. The results estimated the group's carbon dioxide emissions at 9 million tonnes each year or approximately 63,000 return flights from London to Miami. IHG has responded by launching an online sustainability system called '**Green Engage**' which assists general managers across their hotels to manage hotel energy, water and waste consumption more effectively. Early trial models show that IHG could potentially achieve energy savings of as much as 10% to 20%. *For more visit www.ihg.com*

Ecotourism Kenya is a civil society organization founded in 1996 to promote ecotourism and sustainable tourism practices in Kenya. Ecotourism Kenya manages an Eco-rating Scheme that certifies tourist accommodation facilities in Kenya. The scheme is an initiative of the Kenyan tourism industry that is designed to further the goals of sustainable tourism by recognizing efforts aimed at promoting environmental, social and economic values. Eco-rating is a systematic approach for verifying a tourism organizations performance when evaluated against an agreed suite of criteria. The scheme is voluntary; any hotel, lodge, camp, bush home or banda can participate. Being awarded a label under the scheme is confirmation that the facility has invested time, money and other resources in betterment of the environment, resource use and the welfare of local communities. *For more visit www.ecotourismkenya.org*

¹⁶ The US Department of Energy – Hotel Life Cycle Figures (2006)

ANNEX 2:
BACKGROUND ON TOURISM & AGRICULTURE SECTORS IN
KENYA, TANZANIA, AND UGANDA

Kenya's Tourism Sector

Tourism accounts for 10% of Kenya's Gross Domestic Product (GDP), making it the third largest contributor to Kenya's GDP after agriculture and manufacturing, as well as the third largest foreign exchange earner after tea and horticulture. According to Kenya's Ministry of Tourism website (www.tourism.go.ke), the tourism sector recorded approximately 2 million visitor arrivals in 2007, which represents an increase from 1.6 million arrivals in 2006 or 12.5% growth.

Consolidated tourism earnings expanded from US\$ 670 million in 2006 to about US\$ 842 million in 2007, reflecting an 11.6% growth. Tourism is now the leading economic sector in Kenya recording the highest growth in the economy at 13%. It contributes about 12% of the country's Gross Domestic Product and accounts for over 9% of total wage employment, and is also a major source of Government Revenue in the form of taxes, duties, licence fees, entry fees, etc¹⁷. The main tourist attractions include photo safaris through the 19 national parks and game reserves; the renowned scenery of the Great Rift Valley; and beaches along the Indian Ocean to mention a few.

The Hotel sector is estimated to contribute to 7% of commercial energy use worldwide¹⁸. There are various opportunities for PES in the tourism/hospitality sector that could be explored including paying premiums for environmentally friendly hotels and eco-lodges, offsetting carbon emissions for travel and so on. A survey of tourists visiting Kenya carried out in 2003 found 66% of respondents were willing to pay a higher rate for an environmentally friendly hotel.¹⁹

The Coffee Sector in Tanzania

Coffee is Tanzania's largest export crop. It contributes approximately US \$115 million to export earnings, and provides employment to some 400,000 families.²⁰ Over 90% of Tanzanian coffee is grown on farms of smallholders on average holdings of 3 hectares. The remainder comes from co-operative and privately owned estates. There are many opportunities for PES in agriculture including markets and payments for "biodiversity friendly" commodities. Such commodities may be recognized through certification and they fetch a premium price. The demand for certified or 'sustainable' coffee is increasing worldwide (see table below) and in Tanzania. By end of 2005 a total of only 18 metric tones were purchased as "Utz certified"²¹ from Tanzania;

¹⁷ Kenya's Ministry of Tourism website; www.tourism.go.ke

¹⁸ The US Department of Energy – Hotel Life Cycle Figures (2006)

¹⁹ 2003 P. Masau & B. Prideaux; Sustainable Tourism: A Role for Kenya's Hotel Industry; 1368-3500/03/03 0197-12 ©; Current Issues in Tourism Vol. 6, No. 3, 2003

²⁰ International Coffee Partners, Tanzania project profile; http://www.coffee-partners.org/project-profiles.html?file=tl_files/ICP-Toolbox/Projects/Project_Profiles/Tanzania+Project+Profile.pdf.

however, by mid 2007 the quantity increased to 27 metric tons²². The share of Tanzania’s Utz certified coffee sales from African countries that export Utz certified coffee was only 0.7% in 2005. By mid-2007, it was 2.8%. All the coffee sales originated from certified coffee plantations that were certified in 2005 and the average premium was 5 US-ct. /lb of green coffee²³.

<i>Type of certification</i>	<i>Percent increase in 2006 over 2005</i>
Fair Trade	53
Utz Certified	25
Rainforest Alliance	106
Organic Coffee	15

A recent study by researchers at *Sokoine University of Agriculture*²⁴ identified sales to emerging, niche and value-added markets such as speciality, fair trade, organic, and Utz-certified coffee as a possible venue for increasing the value of coffee and other agricultural exports from Tanzania. However, the study also notes that there is currently no evidence that premiums paid on sustainable coffee justify investments for compliance. Producers that are not certified are yet to be convinced that these investments can offer them satisfactory returns. There is need to demonstrate that such niche markets do indeed pay-off²⁵.

The Tea Sector in Uganda

The Uganda Tea Association has identified 200,000 hectares of land as suitable for commercial tea production, however only 24,000 hectares of land is under tea production- which leaves a lot of room for expansion. About 50,000 people are employed directly or indirectly in the industry. The smallholder tea sector produces about eight million kilos of made tea representing about 20 per cent of the country’s total made tea production. In 2007, Uganda exported 41 million kg, earning about US \$75 million. Volumes have been steadily increasing from 37,000 tonnes in 2003 to 45,000 tonnes in 2007. In 2006, there was a drop to 34,000 tonnes from 38,000 in 2005 because of poor weather. Volumes are expected to increase as more farmers put land under tea. About 70 per cent of Uganda’s tea is sold by auction in Mombasa, and 20 per cent through direct sales, while the remainder is sold locally. The price is determined by brokers who test the quality of the made tea and then value it. On average, farmers earn about US\$ \$11 per kilogramme of green leaf. A hectare

²¹ **Utz Certified** coffee standard is a worldwide certification programme for ‘responsible coffee’. Coffee producers certified by the Utz Foundation comply with the Utz Code of Conduct, which covers: good agricultural and business practices, social criteria based on the International Labor Organization Conventions, and environmental criteria.

²² Evelyne A. Lazaro and Jeremiah A. Makindara (2008) Sustainable Coffee’ Exports from Tanzania; Sokoine University of Agriculture, Tanzania; January 2008

²³ *ibid*

²⁴ *ibid*

²⁵ *ibid*

of tea plantation produces 6,000 kilos.

The Tea Industry is fully reliant on fuel wood and electricity for drying- which means the industry contributes significantly to carbon emissions. Uganda is set to benefit from the *Greening the Tea Industry in East Africa project* which aims to reduce the electrical energy in the tea processing industries in countries covered by the East African Tea Trade Association, while increasing power supply reliability and reducing greenhouse gas emissions.²⁶ A project feasibility study²⁷ found on average, two of the largest tea factories pay US\$ 0.09 per kWh for every unit of electricity power drawn, and about US\$ 0.35 for every unit produced by their diesel generators. About 6 kWh of thermal equivalent per kg of made tea are needed. About 1.2 tons of wood are required for every ton of made tea and the cost to each company amounts to about US\$ 19 USD per ton of wood. The annual consumption of wood amounts to 5,500 tons. The aggregate electricity bill for both tea factories was found to amount to US\$ 280,000 per year and in addition a diesel bill of about US\$ 145,000. In total about 155 000 liters of fuel are consumed by the tea factories per year. The study proposes that if the greening tea industry project is successful, 465 tons of CO2 emissions can be avoided on an annual basis²⁸. The two largest tea factories will be the focus of the Uganda survey.

For both the tea and coffee sectors surveys, there are several factors to consider. Businesses could, for example, add carbon credits where the alternative to conservation friendly coffee or tea may result in negative carbon impacts (e.g., less shade, more chemical inputs). In some situations and countries there may be an economic case for “double certification” – adding a carbon credit, which requires a certification process in the form of a validated or certified Project Design Document (PDD), to certified agricultural or forestry products. Forest Trends is investigating how to add carbon credits in such situations, for example, in FSC certified community forestry in Honduras, and for certified ‘organic cocoa’ from cooperatives in Costa Rica.

Also, if tea or coffee farmers are organised into producer cooperatives, there could be a strong basis for 'aggregation' and thus lower transaction costs for carbon credits. The best situation is where a carbon payment demonstrates additionality – for example where a carbon payment for certified tea or sustainable coffee could make the difference between a viable and non-viable land use; or where certification would not have happened without the carbon payment.

Another important factor to consider is the end buyers or processors of these products. Buyers such as *Cadbury* for coffee or *Twinings* for tea may very well be interested in supporting the certification of the plantations since (a) it helps assure sustainability of supply (*for example, in Ghana, Cadbury has raised concerns that cocoa production will begin to dry up with current more chemically-based production systems*); and (b) companies can offset their carbon footprint and demonstrate themselves as “environmentally friendly”.

²⁶ For more see <http://greeningtea.unep.org>

²⁷ Greening the Tea Industry in East Africa Small Hydro Power Plant Pre-feasibility Study- *Nchwera and Warugo* Uganda; 15th March 2006; www.greeningtea.unep.org

²⁸ *ibid*

Annex 3: Current Strategies by Businesses to Address Environmental issues

Water Quantity and Quality Improvements:

A range of water quantity and quality improvement measures were reported by the various companies surveyed including:

- construction of lagoons to treat waste water (effluent) at the tea farms,
- protection of catchments areas for the rivers that run through the farms or estates,
- introduction of ‘ecological pulpers’ as well as mucilage removers as part of reducing water use at the coffee estates and improved technology for irrigation (using hydro-electricity) at one of the coffee farms resulting in a reduction of 2% water use compared to previously used traditional surface irrigation.
- Installing rainwater collecting systems W
- Treatment of water by reverse osmosis and adding minerals to provide drinking water for guests. This also eliminates the pollution generated by importing water and plastic as reusable glass bottles are used.

Waste Control and Recycling: While most companies surveyed did not report their waste impacts, they reported various waste control measures such as:

- using biodegradable waste as organic manure;
- donating used flour boxes to community members to make beads, necklaces and bracelets for sale to tourists visiting the ecolodges;
- sorting of garbage; and glass and plastic recycling.
- reduce packaging and use natural products
- using the reverse side of printed paper reduces the volume of paper
- Turning waste to wealth’ - Or useable products such as bio-char, and bio-gas. This reduces imports of soil and fertilizers used for the resort’s herb and vegetable gardens.

Responsible purchasing:-.Choosing local, fair trade and organic products ensures that money stays with the local people and reduces the carbon footprint of food and

Control of Soil Erosion: The tea factories particularly reported challenges to do with soil erosion and they are handling these through construction of terraces, controlling bush burning, protection of water catchment areas located adjacent or within tea plantations.

Shade Trees & Trees for Firewood: The shade trees on the coffee estates are important for microclimate creation, which is crucial for coffee quality maintenance. The coffee estates also reported that the high shade tree density is providing a home to several rare bird species. Recognising their dependence on fuel wood, the tea factories have planted over 150 hectares of eucalyptus on their estates that are harvested for firewood. The eco-lodges have also planted woodlots for firewood in the nearby villages.

Certification: Most of the tea and coffee factories are certified by the *Fair trade Labeling Organisation* (FLO) International (<http://www.fairtrade.net>), which guarantees the end consumer that the coffee or tea bought meets “**Fair-trade standards**”²⁹ and contributes to the socio-economic wellbeing of the cooperative members. The farms are regularly inspected for complying with Flo-Cert certification scheme's regulations. Machare Coffee estate is also “**Rainforest Alliance**”³⁰ Certified, while Kilicafe has achieved “**C.A.F.E Practice**”³¹ verification after being inspected by Starbucks Corporation.

Partnerships with Technoserve (www.technoserve.com): KILICAFE in Tanzania is a beneficiary of the *Technoserve* Regional Coffee Initiative³² which is helping small-scale farmers increase their incomes by producing higher-quality coffee for the lucrative specialty coffee market. *TechnoServe* helps farmers to organize themselves into business groups, obtain credit, processing equipment and link them directly to overseas buyers such as *Starbucks* and *Peet's Coffee & Tea*.

Species Protection: The eco-lodges have taken deliberate efforts to protect and conserve rare species such as the Rothschild giraffe that is one of the most endangered giraffe species in Africa.. The Mombasa Serena Hotel Beach Front is a traditional turtle nesting ground. Serena Hotel is carrying out a turtle conservation programme by providing a safe haven to eggs laid and providing incentives to local fishermen to protect turtles and turtle eggs. A turtle adoption scheme has enabled guests to adopt turtles and cash donations are used for paying local fishermen who report and protect the turtles and their nests

Premiums for Social Development: Respondents reported that using Fair Trade premium money, the coffee and tea estates have been able to establish education funds to help farmers' families to go to school; and train groups of producers in organic cultivation methods in selected primary societies. The hotels and eco-lodges have also made a deliberate effort to source most of their supplies from the local community. Dish soaps are made from locally planted aloe Vera; honey comes from a local women's beekeeping group; and the carpets used for interior décor come from local artisans. This reduces shopping trips to the city, boosts the local economy and reduces emissions.

Promoting Eco-Tourism: The hotels and eco-lodges actively promote and encourage encouraging guests to visit the local villages. A resident naturalist is employed by the ecolodges to guide guests, tourists and school children round the conservancy, where they are introduced to, and educated

²⁹ Fairtrade standards set clear minimum and progressive criteria to ensure that the conditions for the production and trade of a product are socially and economically fair and environmentally responsible. For more visit http://www.fairtrade.org.uk/what_is_fairtrade/fairtrade_certification_and_the_fairtrade_mark/fairtrade_standards.aspx

³⁰ Rainforest Alliance Certified seal is a guarantee that coffee is grown on farms where forests are protected, rivers, soils and wildlife conserved; workers are treated with respect, paid decent wages, properly equipped and given access to education and medical care. For more details visit <http://www.rainforest-alliance.org/agriculture.cfm?id=coffee>

³¹ C.A.F.E Practice is a sustainable coffee initiative from Starbucks that encourages and fosters the sustainable production of green coffee; that is, in a way that “meets the needs of the present without compromising the ability of future generations to meet their own needs. For more details see http://www.scs certified.com/csr/docs/CAFEPRACTICESGenericEvaluationGuidelinesV2.0_010307.pdf

³² For more information see http://www.technoserve.org/work_impact/locations/tanzania.aspx#moreabout

about, wildlife, birdlife, indigenous plants and habitats. Tourists contribute a separate fee, which is donated to the community.

Coffee farms are in negotiations with their trading partners to establish a “**Green Bean Coffee Project**” which will involve growing trees within coffee farms and/or establishing tree farms in areas bordering coffee production in an attempt to sequester carbon and reduce the impacts of global warming. KNCU is also discussing with a UK based company *Twin Trading* on possible establishment of carbon sequestration projects in river valleys in some of the coffee producing areas. Most of these are still in negotiations so no details are available.

Intercontinental Hotels also announced the introduction of '**Green Engage**', software that allows the group to automatically compare hotels of a similar nature across the world and lists a series of actions that each hotel can take to reduce waste and the consumption of energy and water. IHG believes this tool can help an average hotel conserve between 10% and 20%, depending on temperate zones, and could help IHG save upto \$200m per year. Intercontinental Hotels said Holiday Inn, one of its members, will serve Rainforest Alliance Certified Coffee 100 % Arabica coffee bean blend at its nearly 1,000 Hotels in USA. This makes IGH the largest hotel brand to serve Rainforest Alliance Certified Coffee. The aim is to support environmentally and socially responsible practices on farms where biodiversity is conserved and communities working in these farms are protected and taken good care (quality welfare programs).

Serena Hotels said that they have already engaged an external consultant to review and calculate their carbon footprint.

Table 5: Energy Saving Measures Reported by Companies Surveyed

Sector	Energy Saving Measure Reported	Cost Savings
Tea	<ul style="list-style-type: none"> ○ Proper loading of machinery, which were previously under loaded or overloaded; ○ Regular servicing of electrical mortars; ○ Segregation of lights to avoid idle lighting during day time; ○ Replacing incandescent bulbs with energy savers; ○ Installing translucent iron sheets to use natural light for longer period during the day; ○ Painting of walls with colour increase light from bulbs; ○ Stacking wood fuel more efficiently, ○ Installing a diesel fuel savers ○ Forming energy committees to do regular energy audits to monitor performance 	Not known
Coffee	<ul style="list-style-type: none"> ● Using energy savers ● Replacing diesel generators with hydroelectric generators. 	Not known

	<ul style="list-style-type: none"> • Running irrigation systems on entirely on gravity; • Using the sun to dry the coffee 	
Hospitality	<ul style="list-style-type: none"> • Installation of twin speed motors in the air conditioning cooling towers to ensure the motor operates at a lower speed when the temperature is cold • Installation of a capacitor bank to prevent voltage loss when receiving power from the national grid • Installation of inverter systems that have led to reduced fuel usage and a reduction of noise and air pollution • Heat conversion systems whereby heat exhaust from the incinerators is converted into energy to heat water for the staff camp leading to a reduction in energy required for the boiler. • Ecologies switched entirely to solar power for lighting and cooking is carried out with gas and eco-bricks 	US\$ 28,800 per annum*

**Only Intercontinental Hotels and Resorts reported – these are worldwide figures/ individual hotel figures are not yet available*

ANNEX 3:

SEMI STRUCTURED INTERVIEW GUIDE

1. Company's Interface Points with the Environment:

- Tell me about how your company interfaces with the environment
 - i. What resources do you rely on, as critical to the business?
 - ii. What resources are indirectly important to the business?
Ask for details related to why, how, and where.
- What is the current status of those resources, particularly in your country?
 - i. Do you have any concerns about the availability of these resources over time?
 1. If yes – what?
 2. If no – move to next question.
- What is the anticipated future status of those resources on a 2, 5 or 10-year timeframe *if concerns stated, then:* how are you planning to address these challenges? *Is climate change, energy use or greenhouse gas emissions an issue, and if so, do you have a strategy to address it (e.g., have you thought about, or would you consider, carbon trading opportunities)?

2. Company's current approach to natural resource use:

- How much of the natural resources/inputs identified above does your organization depend on per year? E.g.: *acres of land, gallons of water, firewood, megawatts of electricity or other energy sources, fertilizer inputs, etc.*
- Who supplies the natural resources?
 - i. Is it one supplier or are there various suppliers in the chain?
- How much do you spend for the resources (indicate rate and volume)?
 - i. Is that a stable price or does it fluctuate annually?
 - ii. Is the structure problematic or OK?
- Do you experience any shortages / or has there been a sharp increase in price of the inputs or resources?
 - i. If yes, what is the cause?
 - ii. If no, do you anticipate any in the future – are there plans to expand?

. Investments in the Environment/Natural Resources

- Does your company have a corporate environmental policy? – Provide details
- Does your organisation pay or contribute money or other resources to institutions or individuals in any way to ensure that:
 - the amount and quality of natural resources (e.g the amount of land, water volume and quality, soil, etc.) is maintained;
 - any loss in natural resources is compensated;
- If yes,
 - i. What are the terms of payment?
 - ii. Which institutions are paid?
- If no,
 - i. What other investment programs and/or philanthropic programs do you have? (do you have a CSR policy?)
 - ii. What drives decisions to invest in other natural resource programs? For

example, has the company bottom line improved as a result of environmental investments (e.g., certification)? If not, do you anticipate making an environmental investment? Have you discussed your ideas with the government or other parties?

3. Corporate strategy – looking forward:

- When you look forward, what is the corporate strategy vis a vis natural resources in general - and particularly for those resources that your company depends on most?
- How is that strategy being implemented?
- What are you interested in doing/implementing that has proven difficult to date? (Why? How?)
- What assistance would you need to improve your corporate strategy towards the environment?

4. PES opportunities identified

[If time is limited, this discussion could be tabled for the follow up phase]

- If the discussions above identify a potentially attractive PES strategy (e.g., carbon trading, payment for watershed services provided by upstream communities, etc.), discuss the potential benefits and costs, challenges, constraints, etc., to establishing a PES mechanism (or linking in to a PES mechanism already operating in the country); this would involve an extended list of questions appropriate to the type of PES investment.