

TEA
A POPULAR BEVERAGE

Journey to a Sustainable Future



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“Reducing impacts all along the supply chain means working with many stakeholders and, we believe, sharing learning with others. This is the only way that the whole supply chain can become more sustainable.”

Antony Burgmans
and Niall FitzGerald,
Chairmen of Unilever



Sandy Morrison
Chair of the Unilever
Sustainable Tea Initiative

Since the mid-1990s, Unilever has worked with agricultural experts and NGOs (non-governmental organisations) on sustainable development programmes for fish, water and agriculture. This booklet focuses on the Sustainable Agriculture Initiative for Tea.

After water, tea is the most popular non-alcoholic beverage in the world long appreciated for its unique ability to refresh, relax and revive. Today, more tea is drunk around the world than coffee and carbonated soft drinks combined. By understanding the role that tea plays in peoples' lives and creatively applying our consumer insights, we have become the world's largest supplier of branded tea. Every year, consumers in more than 100 countries drink 177 billion cups of Unilever tea. Unilever also has 130 years experience of growing tea. In 2001 we produced 72,000 tonnes from our own estates in India, Kenya and Tanzania.

Unilever is developing and continuously shares sustainable farming practices across its own tea estates. We work with key stakeholders including the Unilever Sustainable Agriculture Advisory Board (SAAB) to establish good agricultural practice and the Tea Sourcing Partnership (<http://www.teasourcingpartnership.org.uk>) to meet our social responsibilities. We will work with the Tea Industry generally to encourage wider application of sustainable tea practices.

Our sustainability journey started out as a voyage of discovery. We have learned a lot. To mark our progress and to

promote further dialogue, this booklet outlines the approach which Unilever's supply chain is taking to safeguard our future tea supply, while promoting good agricultural practices, ecological benefits and social responsibility. With input from the SAAB we have developed two good practice guideline publications (one for tea estates and the other for smallholder farmers). We recognise that our guidelines are not definitive but are a way forward - an analysis of current knowledge. At the same time, we appreciate that many tea growers - estate owners and individual farmers - hold their own views and have also experimented with improving practices towards sustainable agriculture. We encourage all growers to help implement and improve upon these good practice guidelines, as we believe they can give us all a stronger framework for future sustainable tea production.

We will use these good practice guidelines as part of our sourcing of teas from our suppliers. Our immediate aim is to encourage our suppliers to use these guidelines, and our ultimate aim is to support the creation of market mechanisms that favour and encourage sustainable agriculture.

To make this a credible and successful journey we need your help and collaboration. We invite you to participate with us on this journey. We are always open for improvements and suggestions. Please contact us via e-mail: info.liptont teasupply@unilever.com

Our Consumers and Us

Unilever's Corporate Purpose is to meet the everyday needs of people everywhere, to anticipate the aspirations of our consumers and customers and respond creatively and competitively with branded products and services, that raise the quality of life.

Consumers are at the heart of Unilever's business. We bring our wealth of knowledge and international expertise



to the service of local consumers – a truly multi-local multinational. We provide an extensive range of consumer brands sold in over 150 countries and have operations located in more than 90 countries spanning every continent. Our proximity to local cultures enables us to understand local consumer needs and to be responsive with branded product solutions.



Applying our consumer insight in a relevant, creative and competitive way has been our success, making Unilever one of the largest consumer product businesses in the world. In 2001, we had a turnover of €52 billion and employed 265,000 people.



Unilever's range of consumer brands is divided into two main categories: Home and Personal Care, and Foods. Many of our brands are well known and are used everyday by consumers all over the world: including Lipton tea,



Dove soap, Magnum ice cream and Knorr savoury products. Our international Lipton tea brand is enjoyed by consumers in over 100 countries and we also have tea brands tailored to local consumer cultures and tastes, including Brooke Bond, Red Label, PG Tips, Bushells and Tchaie.

We believe that to succeed requires the highest standards of corporate behaviour towards our employees, business partners, consumers and the societies of the world in which we live. This is at the heart of Unilever's Code of Business Principles and our ongoing quest for sustainable, profitable growth and long-term value creation for our shareholders and employees.



Sustainability and Unilever

Our consumers trust us to supply them with high-quality products that are produced in an environmentally and socially responsible way.

Unilever relies heavily on the natural raw materials used in our products, such as vegetable oils, vegetables, tea and fish. As well as being major buyers of these items on world markets, we are also involved in agriculture, both directly, through our own estates, and indirectly, via contract growers and open markets. It is therefore in our business interests to ensure sustainable supply of these materials.

Our position in the market gives us some influence on how the materials are produced and considerable social responsibility to use our influence wisely. We also have a clear obligation to our shareholders, employees and business partners, to ensure continued access to agricultural produce.

Our consumers trust us to supply them with high-quality products that are produced in an environmentally and socially responsible way. It is our responsibility to act as agents for our consumers ensuring their expectations are understood along the supply chain. We judge that Unilever's Corporate Purpose will only be achieved and maintained in the long term if our actions are determined by the broader principles of sustainable development: ensuring we meet the needs of today without jeopardising the ability of future generations to meet their needs. This means we must align our economic goals with the social and environmental consequences of our work.

Since the mid-1990s, we have worked with stakeholders in the area of sustainability, including scientists, environmental organisations, farmers and suppliers in pilot programmes for our three sustainability initiatives: fish, water and agriculture.

The key objectives of our three sustainability initiatives:



Water: supporting efforts to improve the conservation of clean water, and understanding the water imprint of our activities, so that a sustainable balance of human and ecosystem needs may be achieved.



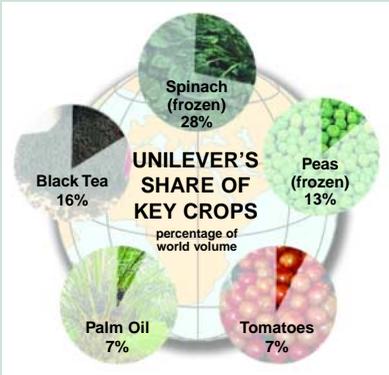
Fish: encouraging more sustainable fishing practices and meeting our commitment to buy all our fish

from sustainable sources by 2005.



Agriculture: establishing sustainability indicators, appropriate measures and standards for

our key raw material crops: peas, spinach, tea, tomatoes and palm oil.



Agriculture, which provides more than two thirds of the raw materials for Unilever's branded products, is increasingly under environmental and social pressure.

Globally, agriculture is under environmental pressure. There is growing competition for available land, valuable land is being lost through soil erosion and there is increasing agricultural impact on water supplies. Mounting environmental and social pressures challenge our supply chain, and growing consumer concerns about the food chain challenge our markets. We are therefore working with a broad range of sustainability stakeholders on a Sustainable Agriculture Initiative.

This programme's aim, which began in 1998, is to develop guidelines for sustainable farming practice that will ensure continued access for Unilever to key agricultural raw materials. In addition, for some crops, it is increasingly clear that more sustainable farming practices also generate greater productivity and better quality, leading to benefits throughout the supply chain.

The foundations of our programme include a definition of four principles of sustainable agriculture and an identification of ten broad indicators of sustainable development encompassing environmental protection, economic progress and social development.

Unilever believes that sustainable agriculture should support the following four principles:

- It should produce crops with high yield and nutritional quality to meet existing and future needs, while keeping resource input as low as possible.
- It must ensure that any adverse effects on soil fertility, water and air quality, and biodiversity from agricultural activities are minimised and positive contributions are made where possible.
- It should optimise the use of renewable resources while minimising the use of non-renewable resources.
- Sustainable agriculture should enable local communities to protect and enhance their well being and environments.

After worldwide consultation with sustainability specialists, we arrived at the following definition of Sustainable Agriculture:

"Sustainable agriculture is productive, competitive and efficient, while at the same time protecting and improving the natural environment and conditions of the local communities."



Tea is a popular, healthy, refreshing, beverage, an integral part of consumer culture in many parts of the world and an important crop and ingredient for Unilever.

Unilever brands have been in the tea business since 1869 (when Brooke Bond was established). Today, our value share of the world black tea market is over 20%. Enjoyed by consumers in over 100 countries Lipton is one of the world's most popular tea brands. We also have a family of tea brands that are unique to different countries and which address the taste and rituals of specific local tea cultures including PG Tips in the UK, Red Label in India and Bushells in Australia.



> A tea bush is productive for over 100 years, resulting in long term social, economic and environmental commitment

Unilever has tea estates in four tea growing regions of the world: Kenya, Northern India (Assam), Southern India, and Tanzania. Through the work of our estates we know that well-managed tea growing can be made sustainable.

Tea is a valuable crop for farmers in many parts of the tropics. It grows on mildly acidic (pH 4 to 5.5) land and at relatively high altitudes, where many other crops do not thrive. Once planted, a tea 'bush' can continue to produce for up to an hundred years. Tea is usually managed in such a way that nearly 100% ground cover is maintained during most years and prunings are used as mulch. Tea is effective for stabilising soil and reducing erosion on hilly land when good farming practices are followed.

Three main factors have resulted in the development of long-term stable social systems based around tea growing:

- the perennial nature of the tea bush, resulting in long-term commitment
- a pattern of growth and harvesting that is much less seasonal than many agricultural crops
- the practical need for close links between grower and tea processing factory.

Tea companies in the 19th and early 20th centuries were developed on a 'plantations' model. The best of these have made important contributions to sustainable development, the environment and rural communities through employment, infrastructure, housing, healthcare and education.

More recent developments have been based on farmer groups or co-operatives linked to specific tea factories - with a high potential for improving the economic, social and environmental status of farmers.



> Tea companies can ensure that the workforce and their families are provided with good standards of housing, health-care and education



Challenges for the Tea Supply Chain

Consumers currently look to tea for a refreshing experience that is good for them. We expect consumers to become increasingly concerned that the tea they buy is also good for tea growing communities and good for the environment.

Consumer groups and NGOs are voicing their concerns about the potential impact of large scale agricultural activities on local communities and the environment. Our research suggests that consumers will increasingly expect the products they buy to benefit farmers, their families and the environment. Tea growers therefore have a shared aim to satisfy current and future needs - to produce tea sustainably. Unilever has taken up the challenge to identify good practices in sustainable agriculture to enhance productivity, market value, environmental and social performance. Tea crops that are grown to these guidelines should yield well for many years. The land on which they are grown should also remain productive providing food and income for farmers and their families for generations to come. Unilever tea growing operations

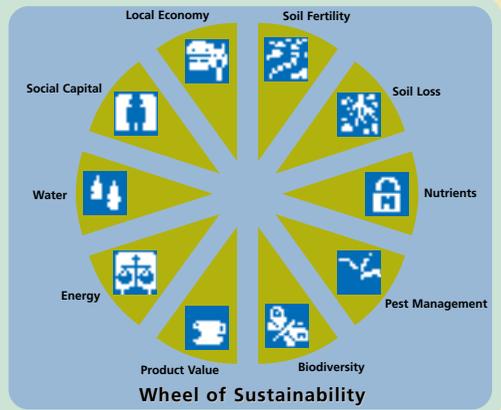
include Brooke Bond Kenya Limited (8,000 hectares of tea), Hindustan Lever Limited (10,000 hectares of tea in Assam and Southern India) and Brooke Bond Tanzania Limited (3,000 hectares of tea). The combined annual output of these estates is 72 thousand tonnes, enough tea to fill 29 billion tea bags! In addition the estate factories provide tea processing facilities for local farmers. Since 1998, these companies have been working on their tea estates to better understand sustainable production techniques through a series of pilot projects. We have used these findings with input from Unilever's Sustainable Agriculture Advisory Board (comprised of external specialists) to establish sustainable agricultural practice for tea, according to ten indicators.

Tailored solutions for different environments, countries and farmers

A wide-range of factors can contribute to sustainable tea production. We have built flexibility into our framework to allow for a balanced trade-off between agricultural and social development and conservation.

The use of the ten sustainability indicators and subsequent assessment has enabled our tea estate companies to prioritise activities for their individual environments.

(For a detailed explanation of indicators, please refer to fold out back cover.)



Bringing together good practices from several tea growing operations has shown us many areas where we can learn from each other to improve sustainability.

We have been able to use pilot projects in different parts of the world to identify good practice guidelines that will result in sustainable tea production. Each of our pilot projects has had something to contribute in terms of:

- improving soil fertility
- managing steep slopes and minimising erosion
- tuning nutrient applications to crop requirements
- implementing Integrated Pest Management (IPM)
- enhancing the biodiversity value of the farm
- increasing efficiency of water use and energy utilisation
- improving the working environment
- helping local communities and the local economy

We are now in the process of publishing our guidelines for the sustainable production of tea and sharing these with the tea industry. To aid communication we have produced two detailed manuals, one for large-scale growers and one for local farmers. We are planning to work with relevant organisations to develop participative learning schemes, first in Kenya and India then in other countries, to help individual farmers implement these practices. Working with growers, organisations and farmers we will introduce more sustainable methods of production and continually improve on current practices.

Our intention is to increasingly incorporate these guidelines into discussions and agreements with suppliers of tea for Unilever. This will be phased in over time.

All tea growing areas have different challenges to face due to climate, landscape, social and economic differences and the next few pages show how we are rising to these and starting to address the issues:

- firstly by outlining Unilever's Sustainability Roadmap and illustrating how it is being applied to tea (page 08),
- secondly by specifying challenges facing each of our tea estate companies with examples of the sustainability work that they are undertaking (pages 09-11),
- finally focusing on some of the major initiatives that have resulted from our pilot projects. These are indigenous tree planting, fuelwood cultivation, Integrated Pest Management and HIV/AIDS programmes (pages 12-15).



Making Sustainability Happen

We have dilemmas to face in dealing with short-term business issues and longer-term sustainability concerns. There are no easy answers.

Unilever provides branded tea products to consumers in over 100 countries and to remain a viable business we must continue to do this at a price that consumers can afford. We have to ensure both the current profitability of our business and the future sustainability of our raw material supplies. The route to a profitable sustainable supply of tea is complex, largely undefined and requires close collaboration with sustainability experts, other interested parties in the tea industry and from NGOs/environmental organisations. We have embarked on tea pilot projects in several locations to

help us understand the complexities of sustainability and develop ideas to achieve our goals. The roadmap for the tea pilot projects is set in the context of Unilever's overall sustainable agriculture programme as shown in the table below.

Many organisations and other tea industry players are also beginning to embrace sustainable production techniques. By encouraging openness and transparency across the industry we can help each other make a real impact faster, gain real practical experience in the supply chain and develop market mechanisms that favour and secure a sustainable future for tea.

Applying the Unilever Sustainability Roadmap to Tea

UNILEVER ROADMAP	TEA PILOT PROJECTS	TEA OUTPUTS
<p>1998</p> <ul style="list-style-type: none"> > Development of mission statement > 4 principles of SA > 10 sustainability indicators proposed > Choice of 5 key crops for piloting 	<ul style="list-style-type: none"> > Decision to include tea in pilot > Kenya (BBK) starts pilot project on own estates > India (HLL) starts pilot project on Assam estates 	
<p>2000</p> <ul style="list-style-type: none"> > Sustainable Agriculture Advisory Board (SAAB) established > Agreed steps <ul style="list-style-type: none"> • Overall approach • Standards • Stakeholder engagement 	<ul style="list-style-type: none"> > Tanzania (BBT) pilot project started in Mufindi > Indices, definitions and methodology progressively developed > Draft SA Standards prepared from multi-country learning on Unilever estates > Internet research study to assess concerns of non-governmental organisations (NGOs) and consumer groups 	<ul style="list-style-type: none"> > Build expertise through pilot projects > Quantify sustainability indicators > Build operational confidence
<p>2002</p> <ul style="list-style-type: none"> > Sustainable Agriculture Initiative > Propose <ul style="list-style-type: none"> • Shared learning • Knowledge sharing • Open to all in food industry 	<ul style="list-style-type: none"> > SA Standards agreed with SAAB and guidelines developed > Support documents published for communication to the Tea Trade and wider community > Standards broadened to include SA, GMP and CSR 	<ul style="list-style-type: none"> > Communication with the tea trade (Unilever, LTS, BBK, BBT, HLL) continues in different ways > LTS discusses adoption of SA standards with suppliers for Unilever Tea > LTS to pursue pilot applications on SA, GMP and CSR with key suppliers
<p>2003-2006</p> <ul style="list-style-type: none"> > Evolution of market mechanisms to support raw material sourcing from sustainable agriculture worldwide 	<ul style="list-style-type: none"> > Develop dialogue with Tea Sourcing Partnership on CSR > SA standards continually improved with input from tea industry, smallholders and NGO stakeholders > Phase in commitment from suppliers to measurable criteria for SA, GMP and CSR 	<ul style="list-style-type: none"> > Widen supplier base > Build industry consensus on way ahead > Encourage market mechanisms for tea sustainable agriculture

Key: SA - Sustainable Agriculture CSR - Corporate Social Responsibility GMP - Good Manufacturing Practice
 LTS - Lipton Tea Supply BBK - Brooke Bond Kenya BBT - Brooke Bond Tanzania HLL - Hindustan Lever



“Our biggest challenge is persuading smallholder farmers of the benefits of sustainable agriculture because of their large number (200,000+) and the variable level of education and agricultural/ environmental understanding.”

Dr. James Onsando, Field Research and Development Manager, Brooke Bond Kenya Limited

Brooke Bond Kenya (BBK) has over 8,000 hectares of tea gardens and was the first Unilever tea estate company to embark on a sustainability programme. The project started in 1999 originally focused on documenting and fine tuning good practices. Input came from a multidisciplinary in-house team with assistance from Kenyan and international research institutions.

Having monitored BBK operations against Unilever’s sustainability indicators they have identified areas for focus.



> Restoring indigenous trees to Riverine areas

Some aspects are good:

- Levels of organic matter are well-maintained and natural biological methods control pests and diseases.
- No pesticides are used on mature plants except for one or two herbicides on field edges.
- The estate generates most of its energy needs from cultivated fuelwood and hydroelectricity.
- Over 10% of the estate is kept as riverine strips and conservation areas.
- Active involvement in the planting of 50,000+ indigenous trees throughout the estate and support to associated community projects.
- BBK continues to lobby strongly on conservation issues, particularly forests.

BBK has prioritised a programme to address current concerns. These are:

- Soil pH is becoming more acidic in older fields due to prolonged use of acidifying inorganic fertilisers.
- Emissions of sulphur dioxide from factory boilers need to be reduced.
- BBK has a weak performance on the “local economy” indicator because it imports machinery, fuel and fertilisers, rather than obtaining them locally.
- The incidence of HIV/AIDS among BBK workers is a serious problem and the company has maintained programmes of education and support to help contain the spread of this illness.

Persuading over 200,000 smallholders of the benefits of sustainable agriculture will be a huge challenge. BBK is planning to start work with some of these farmers, the Kenya Tea Trade, and other interested parties to customise the communication of the good practice guidelines to suit local farming situations.



> Hydroelectric plants provide the majority of the company’s power requirements



“Our biggest challenge is unpredictable income due to the drop in global tea prices. We are responding to this by breeding tea hybrids which meet sustainability values, give good yields and high quality.”

Dr. M. R. Chandra Mouli, Field Development Manager,
Hindustan Lever Limited

Hindustan Lever Limited (HLL) is involved in tea cultivation and processing on its estates in Assam and South India covering 10,000 hectares. HLL established a sustainability programme in 2000. The HLL good practice sustainable agriculture framework has been developed with input from Unilever pilot projects. They consult the M.S. Swaminathan Research Foundation who have specific expertise in sustainable development in India.



> Soil conservation with *Citronella* grass along field and drain edges

Use of the good practice sustainable indicators has led HLL to prioritise the areas of soil loss and fertility, pest management and biodiversity. Action plans for each of these indicators have been developed.

- Soil Loss and Fertility

Measures to reduce soil loss include sowing cover crops such as horse gram, *Crotalaria* and other legumes and planting field margins with soil binding plant species such as Nilgiri / Yellow daisy and *Citronella*. A reduction of nitrogen input by over a third in two years has been achieved by using organic matters and biofertilisers, and experimenting with timing and methods.

- Pest Management

The introduction of Integrated Pest Management (IPM) has led to a 20-30% reduction in pesticide use. Fungal biocontrol is being tested and pheromone traps are planned.

- Biodiversity

HLL supports NGO biodiversity conservation efforts through the Anamallai Biodiversity Conservation Association and the Meghamalai Wildlife and Environment Association. In Assam and Southern India the company is working to protect natural areas surrounding tea estates such as forests, swamps, waterways and grasses. Biodiversity plots have been established and over 25 thousand indigenous tree saplings planted in pilot sites. Researchers from the Rain Forest Research Station carry out botanical surveys to monitor wildlife in the biodiversity plots, and a number of rare and endangered species have been recorded.



> Hand pollination techniques to help develop new disease and pest resistant varieties

There is a continual need to increase the value of tea crops through higher quality, yields, drought tolerance and pest/disease resistance. The team is monitoring yield and quality to ensure that there is no adverse effect from the reduction in use of synthetic fertiliser or an increased use of IPM rather than pesticides. Another response is their development of new hybrid tea varieties to increase the diversity of the crop.



“Our biggest challenge is convincing all farmers to use the good practice guidelines and carry out sustainable activities because of low tea prices resulting in unpredictable income.”

Sylvia Rutatina, Field Officer, Brooke Bond Tanzania Limited

Tea in Brooke Bond Tanzania (BBT) covers 3,000 hectares of which 300 hectares is mechanically harvested. The BBT Sustainable Agriculture project was launched in 2001 with full evaluation of the estate against the ten sustainability indicators. Working closely with national and international research



> Prunings left in field

institutes, estate employees and local communities has helped the team to prioritise future initiatives.

Tea is pruned after 4 years and all pruning trash is retained in the field to boost soil organic matter.

Soil compaction in the mechanised area is monitored and a new machine with a smaller compaction effect was purchased in 2002.

An environmental impact assessment is updated regularly to assess nitrogen and phosphate status to focus on minimising leaching and run-off of fertilisers. No pesticide is used in the crop to be harvested. Manual weeding as well as use of herbicides (low volume, spot spraying) is practised with a target of reducing herbicide use.

Rainwater is stored in 67 dams for irrigation from May to November. In addition to normal conservation areas associated with watercourses and estate boundaries, the company also maintains some 14,000 hectares of natural forest. This is a major environmental undertaking for BBT, which benefits the whole region, as the forest is a natural water catchment for the two major rivers in Tanzania (Ruaha and Kilombero).

The areas for current concern are:

- Irrigation still relies mainly on diesel pumps, although hydroelectricity powers almost all of the manufacturing operations.
- Fertiliser and machines are not available from local sources and have to be imported.
- HIV/AIDS is a serious problem and programmes are in place to provide: 1) information and education to all employees and their dependants and 2) prevention advice and care for patients in company clinics/hospitals.

BBT is still at a comparatively early stage in this project. Currently the biggest challenge they face is uncertain income caused by the unpredictable prices of tea, making sustainability planning difficult. With the help of the sustainability indicators assessment, areas have been identified and prioritised where long term solutions are required. These include minimising the use of non-renewable energy sources, increasing fuelwood energy efficiency and enhancing the tea quality.



> Forest conservation is critical to management of water catchment areas and benefits the biodiversity of the region



Tea estates can contribute to biodiversity and be at the forefront of the lobby to retain the world's remaining indigenous forests.

The Issue

In many countries we continue to see the loss of natural forests due to logging and settlement with a consequent impact on both rainfall and land degradation. Tea, often criticised for being planted as a monocrop, can result in limited diversity within the tea fields.



> Native trees are planted more widely through estates and tea fields to benefit the environment

Addressing the Issue

Indigenous trees play a critical role in our environment, as a component of water catchment areas (assist water retention and stabilise soil profiles) and as a contributor to biodiversity. Tea estates should be at the forefront of the lobby to retain the remaining indigenous forests of the world. There are also actions that estates can take within their own boundaries to support both water catchment conservation and biodiversity.

In Kenya, a project initiated in Year 2000 had the specific objective to plant indigenous tree species within the tea company's estates. With the co-operation of relevant stakeholders the project was extended to include plantings in adjacent rural areas, along forest edges and riverine strips, along roads and around housing, schools and hospitals. The plantings were intended to promote environmental awareness,

increase biodiversity, help replenish depleted reserves of indigenous trees and provide resource and amenities for local people.

Progress

Locally indigenous tree species have been identified, seed collected and nurseries established to raise seedlings. Appropriate methods have been developed for successful germination, seedling care and field planting. Within just two years, the project has planted 50,000 indigenous trees and produced a further 50,000 seedlings. In addition to widespread plantings and the development of new forest blocks, an existing arboretum has been renewed and a new one planted. The team has also involved neighbouring communities to extend awareness.



> Local schools are supplied with books about indigenous trees and school children are actively involved in planting trees at their schools

Challenges

- Ensuring that the trees planted are carefully maintained through the first five years to secure their survival to maturity.
- Progressively extending beyond the tea estates into neighbouring areas by providing support and methodologies which others can adopt.



Productive fuelwood plantations have an important role in building self-sufficiency in renewable energy resource.

The Issue

Tea production requires large amounts of energy for running the

factories, and especially drying the tea. The heat for drying comes from boilers, which are normally fired by either a renewable resource, such as wood from industrial plantations or a non-renewable resource, such as coal or oil. Increasing economic demand to plant more tea and increase tea yields is leading to potential energy shortages. At the same time industrial fuelwood plantations have not had the same agricultural emphasis as the tea crop itself and productivity levels have been relatively poor.

> Defining the appropriate balance between tea, fuelwood and natural forest is a key part of the program



Addressing the Issue

A full review of fuelwood production and utilisation was undertaken to define a good practice protocol. The study started with the initial planting material and worked through all aspects of production to the harvesting and storage of wood before boiler use. Information was collected from all sources, including visits to known



> Cultivated fuelwood provides a renewable resource of energy for drying tea

centres of excellence in timber production, such as South Africa. The estates developed clear plans with details of planting time to meet factory requirements, the planting material, the timing of harvest, coppicing, replanting and time spent stored in the field and under cover.

Progress

Eucalyptus is retained as the principle genus for fuelwood production. Seed is selected from 'mother' trees against specific criteria. Nursery practices enable field planting within 4-5 months of seed sowing, minimal soil use and the re-cycling of polythene sleeves. The fuelwood crop is grown on an 8-10 year cycle. The yield has increased by 50% after five years and it is expected that a 100% yield increase is achievable over the full growing cycle. This is equivalent to an annual output of 100 cubic metres of wood per hectare. Post harvest the wood is initially field stacked and then moved to covered storage prior to boiler use. The time from harvest to burning is reduced by up to 50%, to below six months.



> Moisture reduction through storage under UV polythene has achieved 30% improved fuelwood energy efficiency

Challenges

- Exploring new planting material including a selection of high-yielding clones.
- Developing a better understanding of the variations required in field practices for different climatic zones.
- Increasing boiler efficiency.

Integrated Pest Management



The IPM programme in India has reduced the use of conventional pesticides by up to 30%. Further research into biological and fungal control is in progress.

The Issue

Several pests and diseases attack tea in India, these include *Helopeltis*, spider mites, blister-blight and shot hole borer. If pests are not managed, outbreaks can significantly reduce the crop. Conventional methods of control based on pesticide application may result in product contamination and require the purchase of expensive safety equipment (and training in its use). Excessive application can have effects on local wildlife and water supplies.



> If pesticide use is necessary, spot spraying requires access to appropriate pesticides, application equipment, protective clothing and training

Pesticides can upset the biological balance by reducing the predator population and worsening the pest problem. At the same time consumers are concerned about pesticide levels in food and regulatory controls are increasing.

Addressing the Issue

Many pests have natural enemies that normally keep their numbers under control. Research is underway to find these predators and understand how they can be helped to control the pests. For example, providing predators with alternative food sources at times when there are fewer pests around. The present research on selective pesticides (that will kill the pests and not other beneficial organisms) needs to be intensified. Such pesticides need to be made available in the relevant country and registered for tea use.

Progress

A program to introduce IPM control for mites in India reduced the use of conventional pesticides by up to 30% of 1990 levels. Although selective pesticides are widely used there are still occasions when non-selective pesticides must be used to contain local outbreaks. This is now always done using well-defined economic threshold levels in confined areas, designed to stop the spread of the pest. Natural enemies have been harder to find for other pests (*Helopeltis*) but better knowledge of the pest life-cycle and requirements will help reduce the amount of pesticide used. A program to replace the susceptible varieties with resistant stock is being undertaken.

Challenges

- Increasing knowledge of pest and disease 'risk factors' and cultural practices to reduce the frequency and intensity of outbreaks.
- It is essential that pheromone traps are developed, predators for *Helopeltis* are found, biological control of blister blight is instigated and fungal parasites for shot hole borer are found.

Steps in IPM for mites in India

- Establish a system for assessing mite density (select and train people).
- Define threshold levels for each species of mite (red spider mite over 10 adults/leaf, others over 20 adults/leaf).
- Choose pesticides that are selective and safe (Lime, Sulphur, Mineral oil, Neem, *Verticillium lecanii*).
- Use recommended spray machinery (check machine condition, concentration, dosage discharge and walking speed).
- Reassess pest levels at regular intervals (spray only the affected areas).



Tea estates have a unique opportunity to access a significant population to help limit the spread of HIV and provide support to those affected.

The Issue

Acquired Immuno Deficiency Syndrome (AIDS) is a serious and growing problem worldwide, especially in Africa. It is caused by the Human Immuno Deficiency Virus (HIV) which has



already infected over 40 million people. Tea estates employ large numbers of people and often provide housing for their families. Estates can be especially vulnerable to the impact of AIDS.

Addressing the Issue

Tea estates have a unique opportunity to access a significant population to help limit the spread of HIV and provide support to those affected. They should recognise the potential impact of the HIV epidemic and put in place programmes to train, educate and care for their workforce. The principle components of a programme include:

- Establishing the policies, responsibilities and management
- Awareness, education and prevention measures
- Treatment and care
- Impact assessment
- External interactions and contributions.



> Tea growing companies provide much of the social and economic needs of employees

What can be achieved in a given location will depend upon a range of factors, including the status of national programmes and facilities available for treatment and care. However, every estate has a responsibility to set-up

initiatives and to work with Government, non-governmental organisations (NGOs) and their business associates to develop an appropriate activity.

Progress

Several businesses, including Unilever, are supporting HIV/AIDS programmes within



> Many tea estates supply free hospital and care facilities for employees and their dependants

their own workforce and extending the impact to the community in which they operate. Unilever have provided a resource manual to guide programme managers and this is supported by a road-map which can be used to assess progress and plan next steps. Business groups have been formed to support the sharing of ideas and good practice on HIV/AIDS, including the use of specific industry groups, such as the tea growers' associations. Assessment of the impact of the programmes is currently difficult. It is clear that there is increased understanding of how HIV infection can be avoided, and some progress is shown by a measurable decline in the occurrence of other sexually transmitted diseases.

Challenges

- Behavioural change, which can effectively limit the further spread of HIV/AIDS, is taking time to achieve.
- Continued emphasis on encouraging other businesses to establish programmes and extend those that exist.
- Building capacity to deliver counselling, testing, treatment and care, both in the public and the private sector.

By sharing what we learn, we aim to be a catalyst for the adoption of sustainability practices for ourselves, our suppliers and the tea industry.

Tea has an important role in the life of many consumers, and in the social structures, economy and environment of producing farmers and countries. We would like our tea business to become more sustainable and we can only achieve this when our suppliers are able to produce their tea sustainably.

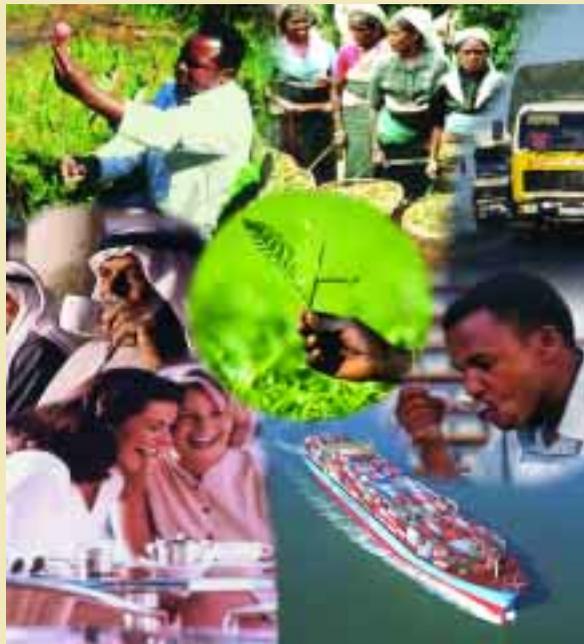
Our starting point was a collation of good practices to share between our estates. The next stage is to communicate these guidelines widely. We have produced two manuals, one for large-scale growers and one for local farmers (details opposite). We will continue to share our learning and encourage all those involved in the tea supply chain to adopt sustainable agriculture good practices and also communicate with us.

Unilever will gradually start applying these guidelines in the sourcing of teas from all its suppliers. This will include working closely with suppliers and

providing their management teams with practical support and guidance to embed sustainable agricultural practices into the supply chain.

It will take time, but our ultimate aim is to support the creation of market mechanisms within the tea trade that favour and encourage sustainable agriculture. This will enable consumers and customers to influence the sourcing of raw materials through their buying habits.

To make this a credible and successful journey we need your help, collaboration and commitment. As a stakeholder to this initiative (either because of your involvement in the tea business, the food industry or because of your concern for sustainability) please join us on this journey. We are open to your contributions and suggestions. You can contact us by e-mail at info.liptonteachsupply@unilever.com.



Sustainable Agriculture Indicators

1. Soil Fertility/Health

Soil is an absolute fundamental to agricultural systems. A rich soil ecosystem improves the performance of crops and livestock. Sustainable agriculture practices can improve beneficial components of the soil's ecosystem.

Typical parameters include: soil organic matter, soil pH, soil compaction.



2. Soil Loss

Sustainable agriculture practices work to reduce soil erosion.

Typical parameters: soil cover index (percentage of soil covered by crop), soil erosion.



3. Nutrients

Both crops and livestock need a broad balance of nutrients. Some of these, such as nitrogen, can be created locally but others have to be brought in from other sources. Nutrients are lost through activities such as cropping, erosion and emissions to air. Sustainable agriculture practices can enhance locally produced nutrients and reduce losses.

Typical parameters: proportion of nitrogen/phosphate/potassium applied that is exported with the crop, proportion of nitrogen that is fixed on site as part of the cropping system, losses of nutrients to water.



4. Pest Management

A small but significant proportion of pesticides used on crops and livestock can escape to the environment, harming wildlife and accumulating in foods. Sustainable agriculture practices can substitute natural controls for some pesticides, so reducing dependence on externally introduced substances.

Typical parameters: risk to operators and the environment from pesticides applied, adoption of Integrated Pest Management approaches.



5. Biodiversity

Agriculture has shaped many ecosystems in the world, and the diversity of biological systems (biodiversity) can be improved or reduced by agricultural practices. Sustainable agricultural practices can improve biodiversity.

Typical parameters: crop genetic diversity, proportion of land managed as natural habitat, habitat quality.



6. Product Value

This is the measure of the desired outputs of an agricultural system. Sustainable agriculture practices should be able to maintain or improve the value of the product and reduce wastage between the field and processing.

Typical parameters: total value of the produce per ha, ratio of solid waste re-used/recycled to solid waste disposed to landfill.



7. Energy

Energy in the form of sunlight is absolutely essential to plants and animals, but agriculture also uses energy from non-renewable sources, such as tractors for ploughing and the energy needed to make agro-chemicals. Energy use is usually the major source of polluting gaseous emissions and greenhouse gases. Sustainable agriculture can improve the balance of energy inputs and outputs, and ensure that the process produces more energy than it uses.

Typical parameters: total energy input per tonne of product, ratio of renewable to non-renewable energy inputs, production of polluting emissions.



8. Water

Some farming techniques require irrigation and other practices can lead to the pollution of ground and surface waters. Sustainable agriculture practices ensure that water is conserved and possible pollutants are carefully controlled to reduce the risks of pollution.

Typical parameters: amount of water used, sustainability of water source, pollution of watercourses by factory effluent.



9. Social/Human Capital

Fair employment practices, collective action, the sharing of knowledge, and the intensity of local social networks help ensure that natural resources are conserved for future use. Some conventional farming techniques have undermined local networks and located knowledge outside the farming communities. Sustainable agriculture works to improve both social and human capital. The prime responsibility for their livelihoods should remain with the local community.

Typical parameters: fair employment practices, agricultural knowledge and training, relationships with local communities, health and education status of employees.



10. Local Economy

Sourcing agricultural inputs (such as goods, labour and services) locally helps to sustain local businesses and livelihoods. Sustainable agriculture practices make the best use of local resources and help to improve the efficiency of the local economy.

Typical parameters: amount of money/profit spent locally, employment level in the local community.



Other Sustainable Tea Publications from Unilever

- **Sustainable Tea: Good Agricultural Practice Guidelines.** A framework for the sustainable management of tea production based on good practice identified on Unilever's tea estates in Kenya, Northern India (Assam), Southern India and Tanzania.
- **Sustainable Tea: Good Agricultural Practice for Farmers.** A practical guide for the smallholder farmer.
- **Sustainable Tea: Methods for Sustainable Agriculture Indicator Assessment.** A detailed technical guide to the methodologies recommended for the measurement of sustainability indicators.

Sustainability Publications from Unilever

- **Growing for the Future:** Unilever and Sustainable Agriculture.
- **Growing for the Future II:** Unilever and Sustainable Agriculture.
- **Fishing for the Future:** Unilever's Sustainable Fisheries Initiative.
- **Our Everyday Needs:** Unilever's Water Care Initiative.
- **Palm Oil:** A Sustainable Future.
- **In Pursuit of the Sustainable Pea:** Forum for the Future and Birds Eye Wall's (Unilever).

Copies of these booklets can be obtained from <http://www.unilever.com> or can be requested by e-mail from info.liptonteasupply@unilever.com.

For general background on Unilever and Sustainability visit <http://www.unilever.com> (click link for environment & society) or visit <http://www.growingforthefuture.com> for specific information on the Unilever Sustainable Agriculture Initiative.

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Notes

This document has been discussed with the members of the Unilever Sustainable Agriculture Advisory Board (SAAB). The SAAB is a group of individuals, specialists in agricultural practices or representatives of non-governmental organisations (NGOs), who have expertise in different aspects of sustainability. They have agreed to critically assist Unilever in the evolution of Sustainable Agriculture indicators and good practices for a range of raw material crops. The contents of this document and the choices made herein are, however, the responsibility of Unilever only.

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