

Addressing the Effects of Climate Change, Kenya

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The effects of climate change will increasingly impact how and where tea can be grown, and this has serious ramifications for people that depend on tea for a living.

Smallholder farmers are particularly vulnerable because they have less money to spend on adaptation measures including more resistant tea clones, input materials like fertilisers and pesticides, and water management practices such as water harvesting and drip irrigation systems.



Smallholder farmers receive training on kitchen gardens

How did we help?

Together with German Development Agency, GIZ, we ran a three-year project to increase farmers' understanding of and resilience to the effects of climate change focusing suppliers to Kenya Tea Development Agency (KTDA) factories. In Kenya smallholder farmers account for more than 60% of production, and KTDA is the

largest tea smallholder cooperative with over 500,000 farmers supplying some 65 tea processing factories.

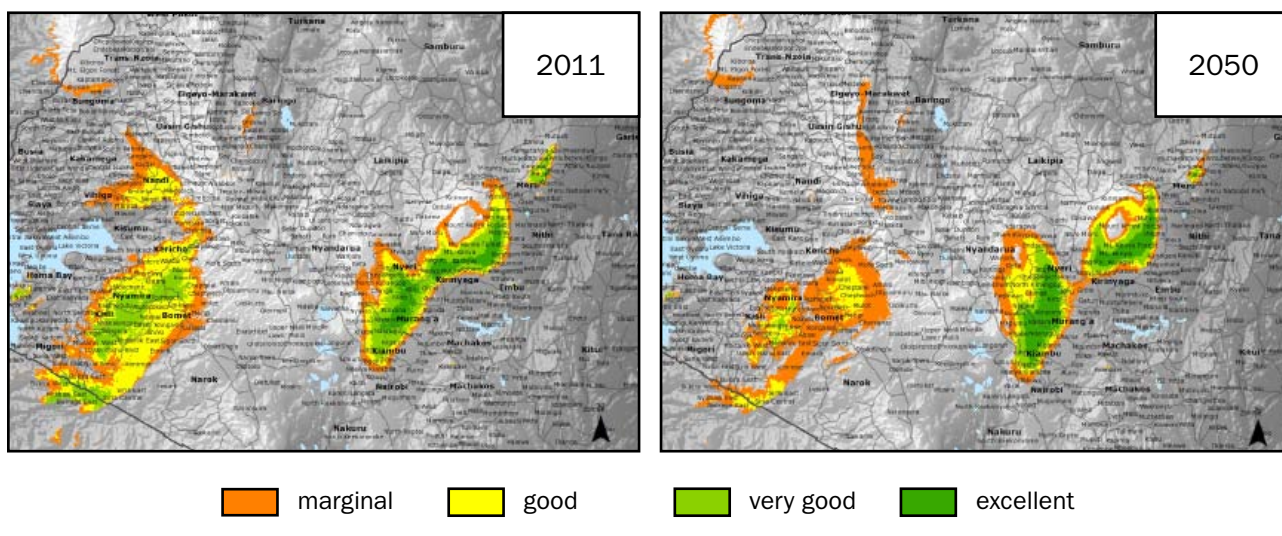
At the start of the project, modelling was carried out to identify which areas would be most affected by climate change by 2050 (see maps next page). The project initially focused on 5 KTDA factories and 50,000 smallholder farmers.

Additional partnerships with M&S (UK retailer) and the International Trade Centre (ITC) - a joint agency between World Trade Organization and United Nations - increased the project's reach to more than 100,000 farmers across a total of 10 factories.

Increasing farmers' resilience

The training focused on climate

Predicted changes in climate suitability for tea growing in Kenya



change adaptation (CCA) measures and good practice farming. It was disseminated to the smallholder communities using the KTDA training and support structures, lead farmers, and demonstration plots.

Training topics:

- Soil, water, and bush management
- Composting, mulching, and the use of shade trees
- Water harvesting, conservation, and drip irrigation

- Crop diversification and kitchen gardens
- Access to drought and frost resistant tea clones
- Fuel wood conservation and access to energy efficient stoves

To support the training, a comprehensive manual on Climate Change Adaptation (CCA) techniques was developed. The manual was written for KTDA's extension officers and covered climate change adaptation techniques and farming

practices that build resilience to the impacts of climate change. In addition, a number of posters were also developed to aid the farmers' understanding of climate change.

A complementary manual on climate change mitigation was also produced. The manual provides a set of tools and resources to support the tea sector, particularly tea factories and tea farmers on how to reduce energy use and carbon emissions.

The manual was produced in close association with Rainforest Alliance and FLO-CERT as part of a project funded by the ITC.



Training on biogas production

Links with other initiatives

As part of the project, KTDA's microfinance scheme, 'Greenland Fedha,' was promoted by extension officers at a number of training events. The scheme's mandate is to provide affordable finance to small-scale tea farmers, and to increase access to financial services among lower income and rural households in Kenya's tea growing areas. Ultimately this link gives farmers access to finance and increases their ability to respond to the challenges of climate change.

An agreement was also reached with the Tea Research Foundation of Kenya (TRFK) and other similar organisations so that farmers have increased access to tea bushes that are more tolerant to extreme weather (especially drought resistant varieties) now and into the future. TRFK staff have been leading training on which clones are best suited to drought and frost conditions. They also provided advice on how the farmers can access the clones.

Links were also made with Kenyan Institute of Organic Farming (KIOF) and the Kenyan Forestry Research Institute (KEFRI). KIOF provided training on sustainable agricultural practices that can help farmers adapt to climate change, and attended a number of training events to explain how farmers can access their low cost training. KEFRI supported the project by giving advice on the use of shade trees and which varieties are most suitable to use in tea growing areas.

Key awards

In recognition of the project's overall success our work has won two awards. The first was the Marks and



Planting indigenous trees to prevent soil erosion

Spencer (M&S) Plan A Environmental Award, and the second was from the Tea Board of Kenya for Best Practices in Climate Change.

The Future

The results of the programme have been so beneficial that KTDA have decided to include CCA training within their Farmer Field School curriculum. This means that 560,000 farmers within KTDA will have access to climate change adaptation support over the next few years, therefore

helping them to be better prepared for the future.

In Malawi and Uganda, climate change adaptation is also a key focus of the farmer field school curriculum that is being implemented as part of the ETP, Tata Global Beverages, and IDH-the Sustainable Trade Initiative partnership to improve smallholder livelihoods.

The climate change adaptation manual has been adjusted for Malawi by the Tea Research Foundation of Central Africa to fit the local context.

In Uganda, the International Trade Centre is funding a climate change adaptation and mitigation training workshop for four key producer groups in Uganda. The workshop will focus on energy efficiency and mitigation measures for factories and adaptation techniques to help smallholder farmers.



Instructions on making compost

Key Achievements

- 100,000+ farmers trained on climate change adaptation (CCA) and good agricultural practices (GAP)
- 600,000+ drought and frost resistant tea bushes planted or in nurseries
- 3,500,000+ shade and other trees planted or growing in nurseries
- 25,000+ energy efficiency stoves installed
- 2,500+ farmers installed rainwater harvesting and/or drip irrigation
- 500,000+ farmers will benefit now that the training is being embedded in KTDA's training curriculum.
- Modelled likely impacts of climate change on tea-growing areas in Kenya (see maps)
- Developed climate change adaptation training manual, which is being used across Kenya and has been adapted for other countries

Thomas Makaya: A Smallholder Farmer's Story

Thomas Makaya farms four acres of tea on an eight-acre plot in the Mudete catchment, 400km west of Nairobi. There, climate change is forecast to reduce land suitable for tea production by 40% by 2050. He has implemented most of the strategies he learnt through the climate change adaptation programme.

He has made bench terraces and water retention troughs throughout his farm to conserve his soil and water, and to improve its fertility he is composting all the waste from his kitchen and animal beddings.

To reduce water stress on his tea bushes he uses tea prunings as mulch and has planted shade trees. He has partitioned his farm into plots with Napier grass, which attract insect pests away from his crops.

Thomas diversifies his tea income by selling milk from his three goats and one cow. He sold his two indigenous cows, which produced three litres of milk a day and bought a dairy cow which produces nine litres. His trees provide fodder for his animals. A new energy saving stove has reduced his need for firewood by 70%.



Thomas Makaya

“The sensitisation training on climate change really motivated me to implement change.”

Thomas Makaya

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