

# TaCRI Contributing to the Transformation of Tanzania's Coffee Industry



**T**he Tanzania Coffee Research Institute (TaCRI) was set up in 2000 with the aim of contributing to the rejuvenation of Tanzania's stagnating coffee industry to a position of sustainable prosperity. The Institute's Headquarters is based at Lyamungu on the fertile slopes of Kilimanjaro, and the Institute operates three sub-stations supporting coffee research in the other major coffee growing areas of the country.

TaCRI's major focus involves the development and distribution of relevant technologies and coffee varieties that will improve coffee productivity and reduce costs of production for coffee farmers.

The long-term goal is to increase competitiveness of Tanzanian coffee on the world market, and to improve profitability and therefore livelihoods, for the country's 400,000 smallholder and 110 large-scale, coffee producers.



## The History

Coffee has been a mainstay of Tanzania's agriculture-based economy since its introduction as a cash crop about 100 years ago.

However, since the mid-1990s, the industry has fallen into steady decline. The reasons for this are diverse: falling world coffee prices have eroded farmers' incomes and profit margins, threatening livelihoods; this has dented the motivation and confidence of farmers to invest in inputs and improved crop husbandry; costs of production are high further reducing competitiveness in the world market; existing varieties are not resistant to diseases; coffee trees as well as coffee growers are aging. It has become a vicious circle.



## A Bright Future

Saying this, Tanzania's expansive volcanic highland areas and the Lake Victoria Basin provide ideal conditions for producing the world's finest coffees - coffees which fetch the highest prices at auction and for which there is far less volatility on the world market.

There is massive potential – potential that is now being unlocked by TaCRI through the development of practical research, which is so essential to support a vibrant coffee industry in Tanzania.

## Sustainability

TaCRI derives its income from a variety of sources. These include members' contribution through cess; government and donor contributions; collaborative activities; and the sale of materials and services. The Institute has received major EU funding which has and will continue to be instrumental in getting TaCRI fully established and operational. The Institute will also benefit from a STABEX sinking fund that will generate steady income for the next 15 years.





**TaCRI has developed a structure and development strategic plan identified by stakeholders. The five distinct res**

## Crop Improvement



This department is focusing on the development of high yielding, disease resistant coffee cultivars (Arabica & Robusta), with good bean size & cup quality. These hybrids (of which 36 'best-bet' varieties have been identified) are being mass multiplied (through vegetative multiplication and tissue culture multiplication) for

distribution to coffee growers around the country.

This is a major rehabilitation and replanting programme that aims for the eventual replacement of all the estimated 200 million coffee bushes in the country.



## Crop Productivity and Primary Processing



The focus in this research area is to identify best crop husbandry and integrated pest management practices that will meet the different requirements and constraints of Tanzania's diverse coffee farming systems.

The outputs from the department will improve productivity per unit area or tree, reduce costs of production and enhance the quality of Tanzania coffees.

## Technology Trans

This department is TaCRI's mouthpiece, providing a crucial role in the dissemination of results to the industry in ways that are meaningful and appropriate to different stakeholders. The department will play a pivotal role in the multiplication and mass distribution of improved coffee varieties to farmers, and will provide the literature & training required.

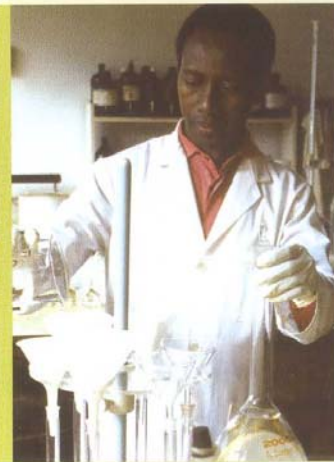


and long-term practical research, based directly on the needs plan has been segmented into research areas:-



## Crop Nutrition

This department's focus is to address the impact of declining soil fertility associated with a lack of affordable inorganic fertilisers or availability of organic manures. The department is working to develop relevant soil and nutrient management systems that will help farmers make balanced and cost-effective decisions about how they can best manage soil fertility.



## Farmer and Training



## Livelihoods and Income Security

Little is known about the social and economic factors that contribute to the success of the contrasting agricultural and livelihood systems of Tanzania's 400,000 smallscale coffee farmers. The focus here is on understanding their diverse livelihood systems, evaluating the constraints to productivity, and identifying and promoting possible solutions to farmers.





## A STUDY IN COFFEE RESEARCH

### The Challenge of Mass Multiplication of New Varieties

One of TaCRI's most important aims is the development and mass distribution of new disease resistant, high quality and high yielding coffee varieties. The ultimate aim is to replace all of the estimated 200 million coffee bushes currently growing in Tanzania.

This is a long process and the Institute is tackling the challenge in the following ways.

#### Selecting New Varieties

Firstly, TaCRI is working to identify specific coffee varieties that perform in terms of disease resistance, high yield, large bean size and good cup quality. This work involves on-farm trials of selected hybrids, as well as experimental trials at TaCRI's headquarters at Lyamungu, to assess performance of the new varieties in 'real farm' scenarios against existing commercial varieties.

#### Mass Multiplication of New Varieties

Once the best varieties have been identified (and several have already been released into the market) the task is then to mass multiply the plants for distribution to coffee farmers.

#### Tissue Culture Method

The most efficient way of mass-production is through tissue culture. This method reproduces identical plants (clones) using leaf tissue (somatic embryogenesis) taken from a selected mother plant. The great advantage of this technique is that it allows simultaneous production of thousands and thousands of offspring from one mother tree. No tissue culture facilities for coffee currently exist in Tanzania but TaCRI is working closely with CIRAD, a specialist tissue culture centre in France, to assess the viability of tissue culture for mass multiplication in Tanzania.

#### Vegetative Cuttings Method

In the meantime, the more traditional method involving vegetative cuttings has been adopted. A one-hectare clonal garden has been developed at Lyamungu, which has capacity for 10,000 mother trees of the best performing varieties. New shoots from the mother trees are harvested and taken as cuttings for propagation into clones of their parent for eventual distribution to coffee growers. At its optimum, the clonal garden will produce 500,000 clones annually.

To escalate the process and replace old varieties with new as quickly as possible, it is planned that farmer groups across Tanzania will take seedlings from TaCRI and create their own clonal gardens & low cost propagation units. The target is to have production of 5 million cuttings of the new varieties annually by 2007.

#### A Major Priority

The development and distribution of new improved hybrids is key in achieving TaCRI's goal for rejuvenation of the country's coffee industry. The TaCRI Board has therefore made the accelerated multiplication of new varieties, the Institute's top priority.

Tanzania's coffee growing areas encompass diverse geographic and climatic conditions, and a variety of farming systems. TaCRI has sub-stations in strategic locations across the country. These not only provide localised distribution points for training and information dissemination to farmers but are also used as research centres for identifying the best varieties for their own specific growing areas.

Map of the main coffee growing regions of Tanzania showing TaCRI coffee research centres



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