International Coffee Organization
Organización Internacional del Café
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Executive Board/
International Coffee Council
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Renovation of CATIE's international coffee collection

Project proposal

Background

1. This document, submitted by the PROMECAFE, contains a summary of a project proposal that aims to put a halt to the process of genetic erosion that CATIE's (Tropical Agricultural Research and Higher Education Centre) international coffee germplasm collection has suffered during past decades. CATIE's collection in Costa Rica is the third largest coffee field genebank in the world, after those in Côte d'Ivoire and Cameroon; it is the only one in the public domain and includes a large part of the genetic diversity of Arabica coffee (*Coffea arabica)* with a total of 1,992 accessions and over 9,000 coffee trees.

2. The proposal has been circulated to the Virtual Screening Committee (VSC) for assessment and will be considered by the Executive Board in September 2007. A copy of the full project proposal is available in English upon request.

Action

The Executive Board is requested to consider this proposal together with the recommendations of the VSC, and if appropriate, to recommend approval by the Council.

PROJECT SUMMARY

Project title:	Renovation of CATIE's international coffee collection
Duration:	6 years
Location:	Worldwide
Nature of project:	The proposal aims to put a halt to the process of genetic erosion that CATIE's international coffee germplasm collection has suffered during past decades. This collection is of high importance for future breeding efforts as it includes a large part of the genetic diversity of Arabica coffee.
Brief description:	The activities of the project can be divided into three phases: (1) recuperation of the material in the existing collection for subsequent propagation; (2) propagation in the nursery; and (3) planting of the rejuvenated material at the new site(s). Support activities have to be considered as well, such as the codification and field identification of the individual coffee plants and the planting locations, and the processing of this information in a corresponding database for efficient management and use of the new collection.
Estimated total cost:	US$418,793
Financing sought from the fund:	US$418,793
Mode of financing:	Financing is expected as grant
Co-financing:	US$0
Counterpart contribution:	US$0
Project Executing Agency (PEA):	PROMECAFE
Supervisory body:	International Coffee Organization (ICO)
Estimated starting date:	tbd

Background

1. For well over a century, coffee has been a major export commodity from Latin America, shaping both the economy and the natural landscape of the region. Recent changes in coffee production methods, driven by increased and changing demand criteria and the desire to boost yields threaten to erode many of the benefits of traditional coffee culture in small plantations.

2. Globally, in dollar value, coffee can be the most important traded commodity after oil and is the primary export commodity of many developing countries, accounting for as much as one third of export earnings in several Latin American countries. It is also a significant source of employment, with some 20 million to 25 million people – most of them small farmers – dependent on income from the world coffee crop. More than two thirds of the current world coffee production is exported from Latin America and the Caribbean.

3. Coffee production has grown by nearly 200 percent since 1950 (Rice & Ward, 1996), and recent years have seen a surge in consumer demand for specialty coffees such as gourmet blends, flavoured coffees, and organically grown coffees. Farmers have to adjust to the new international trends, if they want to remain competitive in coffee production. There is a need to reduce production costs through the use of new, well-adapted varieties with resistance to a variety of pests and diseases, taking into account the possible consequences of climatic change and providing at the same time high bean and cup quality as well as good yields.

4. Most traditional varieties released in Latin America have a narrow genetic base, originating from only a few wild plants. This narrow genetic base has led to varieties with desirable homogenous traits, but at the same time these also present disadvantages, such as high susceptibility to a wide range of diseases and pests and low adaptability to specific agro-ecological conditions. The constant threat caused by the emergence of new strains of existing diseases/pests and climate change makes it mandatory to broaden the genetic base of modern varieties. CATIE's international coffee collection, the only one that is in the public domain and which offers a wide range of genetic variability, will be a strategic asset for future breeding programmes at least throughout Latin America and the Caribbean.

Objective(s)

5. To renovate and relocate the entire CATIE coffee collection in a new, more appropriate site for long-term conservation, and to restructure the collection into a **base collection** and an **active collection** to facilitate adequate germplasm management and support future national and regional breeding efforts in Latin America.

Project activities

- Coffee plants will be reproduced by horticultural means through grafting or the rooting of cuttings. Multiplication of the homozygous materials through seeds will not be considered as this requires a lot of time to carry out the self pollinations and to remove the new flowers.

- The two collections (base and active; 3,910 and 4,692 plants, respectively) will be established at distinct sites within CATIE's research farm. Management will be adapted to the needs of the individual plants in each category; for example, dense and almost permanent shade will be needed for the wild genotypes from Ethiopia, while full sunshine is required for some introductions from East Africa.

- Priority will be given to the propagation of the wild genotypes, followed by the selected materials, and finally by the F1 hybrids. The research material will not be considered for multiplication. After evaluation of these materials has been completed, the most valuable individuals can be incorporated into the active collection.

- Propagated material will be planted at densities that correspond to the size of the coffee plants of each introduction.

- To facilitate the management and use of the 8,602 plants (1,992 introductions), an appropriate design will be applied and computer tools will be used.

- It is proposed to apply a rational strategy, based on the available scientific knowledge concerning the existing genetic diversity in the various categories and the experience derived from the management of other coffee collections.

Budget

Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**TOTAL**
Equipment (greenhouse)	13,000	1,500	2,000	1,000	500	0	18,000
Staff							
1 Agronomist*	22,000	22,880	23,795	24.747	25,737	26,767	145,926
1 Field/Computer Assistant*	6,010	6,250	6,500	6,760			25,520
1 Field Assistant*	6,010	6,250	6,500	6,760	7,030	7,311	39,861
Field workers (3; 5; 6; 6; 4; 3)*	14,250	24,700	30,828	32,064	22,232	17,340	141,414
Subtotal staff	*48,270*	*60,080*	*67,623*	*70,331*	*54,999*	*51,418*	*352,721*
Small equipment and materials	2,000	2,500	2,000	1,500	1,000	1,000	10,000
Overhead (10%)	6,327	6,408	7,162	7,283	5,650	5,242	38,072
TOTAL	**69,597**	**70,488**	**78,785**	**80,114**	**62,149**	**57,660**	**418,793**

* Salary and social benefit increase of 4% per year.