

## Introduction

The Genetic Resources Unit (GRU) of CIAT was established as such in late 1977, and inherited the bean collections from the breeders. In 1978-79, collections of tropical pastures were progressively passed to the GRU for their conservation and study. With world mandates for *Phaseolus* beans and lowland tropical forages, the GRU conserves mostly as seed collections 34,617 and 20,753 accessions of these crops, respectively (CIAT, 2005). Because germplasm activities - namely distribution - have been on since 1973 (surely on a formal basis since 1980) to date, some analysis of trends is possible.

The signing of an agreement in October 1994 between the Food and Agriculture Organization (FAO) of the United Nations and CIAT confirms further the curatorship role of GRU. Since 1995, distribution of germplasm to external users has been systematically done under the acceptance of a Material Transfer Agreement (MTA). In 1995-1996 the first designation to FAO (i.e. the sending of an electronic file about all accessions maintained in-trust by CIAT) took place, with subsequent updates every two years since. As per the last update in 2005, 61,311 accessions have been designated (for beans: 34,617; cassava: 5,941; and tropical forages: 20,753).

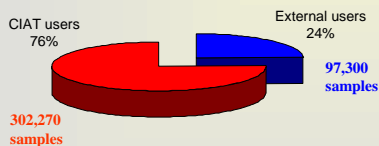
## Methods

Pending on seed availability, CIAT GRU distributes to recipients small samples of seeds, once the following conditions are fulfilled: i) the user is identified, ii) the requested material is defined, iii) the purpose of the request is spelled out, iv) the user has agreed on the MTA, and v) the obligations as per the phytosanitary regulations are met.

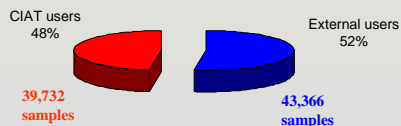
## Results

Over the period 1973-2005 (Figures 1-4), CIAT GRU has distributed 482,668 samples (399,570 of beans to institutions in 98 countries, and 83,098 of forages to 104 countries), over 8.5 times the size of the collection. The main users of CIAT genebank have been the commodity programmes of the Centre (76 and 48%, respectively).

**Figure 1a. Distribution of Bean Germplasm in 1973-2005 (399,570 samples)**

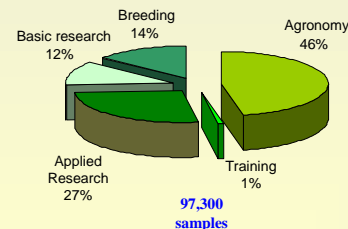


**Figure 1b. Distribution of Forage Germplasm in 1980-2005 (83,098 samples)**

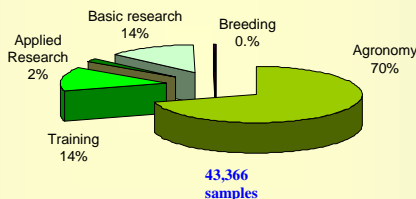


Next to CIAT programmes are the national programmes of agricultural research: they have received more than 50% of distributed accessions, followed by universities with 20-36% of distributed accessions. NGOs, networks, other genebanks, and individual farmers represent less than 4% of distributed germplasm. Commercial companies have a share of 1-2% of total distributed.

**Figure 2a. Distribution of Bean Germplasm to External Users in 1973-2005 by Purpose**

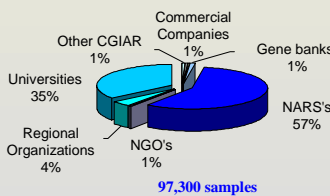


**Figure 2b. Distribution of Forage Germplasm to External Users in 1980-2005 by Purpose**



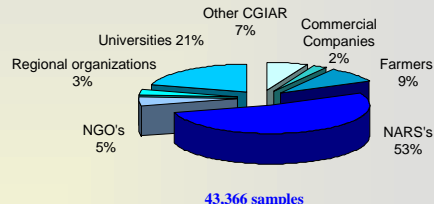
Testing germplasm for yield and adaptation through agromony trials has been the main purpose of external users to ask CIAT for germplasm (70 and 46% of the accessions distributed to external institutions, for forages and beans, respectively). Breeding is important for bean, but less so for forages. Basic research (e.g. phylogeny, studies of gene pools, gene mapping) and applied research (e.g. reactions to diseases and pests) are important purposes of external requests, particularly over the last decade. Training is an important purpose only for forages. On the other hand, the entry into force of MTAs since 1995 has not affected distribution rates in contrast with the reduction of network activities for germplasm evaluation (IBYAN for beans, RIEPT for pastures) due to financial constraints.

**Figure 3a. Distribution of Bean Germplasm to External Users in 1973-2005 by Type of User**



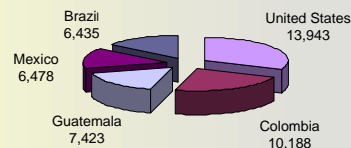
Poster presented at the first meeting of the Governing Body, ITPGRFA, Madrid, Spain, 12-16 June 2006.

**Figure 3b. Distribution of Forage Germplasm to External Users in 1980-2005 by Type of User**



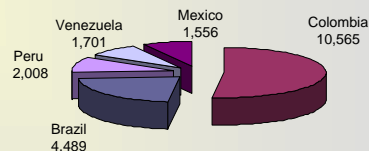
In both beans and forages, the top five country recipients received less than 50% of distributed germplasm (46 and 47%, respectively), while the numbers of countries are significant (98 and 104, respectively), indicating that CIAT GRU is an important provider of genetic resources for those commodities. As reported by FAO (1998), the collections of this genebank rank first in size and diversity. Beyond doubt, countries in Africa could make wider use of such collections. Interestingly, the five accessions with highest distribution rate (wrongly called "best sellers" because this service is free of charges for recipient institutions) for both commodities represent a very small fraction of total distributed, indicating that the distributed material has been diverse. The sort of materials distributed has also been changing over time; for instance, the forage legume *Cratylia* of no priority in the 1970s was the No. 1 in distribution in 2005, and wild beans with almost no demand in early times have been increasingly studied recently.

**Figure 4a. Five top users of Bean Germplasm in 1973-2005**



46% of total distributed; 97,300 samples; 98 Countries

**Figure 4b. Five top users of Forage Germplasm in 1980-2005**



47% of total distributed; 43,366 samples; 104 Countries

## Acknowledgements

These distribution and related research activities have been supported by grants of CIAT core budget (with contributions of, namely, USAID and the EU), the International Board for Plant Genetic Resources, and the Systemwide Programme on Information for Plant Genetic Resources, and the Ministerio de Agricultura y Desarrollo Rural de Colombia.

## Literature cited

CIAT (2005). Annual report. International Center for Tropical Agriculture. Cali  
FAO (1998). *The state of the world's plant genetic resources for food and agriculture*. Food and agriculture organization of the United Nations. Rome