



Consultative Group on International Agricultural Research

International Center for Tropical Agriculture (CIAT)

Cali, Colombia
www.ciat.cgiar.org

Background Information on CIAT Shipment to Svalbard Global Seed Vault

By 1 February 2008, from its headquarters in Palmira, Colombia, the Genetic Resources Unit of CIAT will send to the Svalbard Global Seed Vault in Svalbard, Norway, 30,000 accessions of its in-trust seed collections. This will be a security backup of 21,000 accessions of *Phaseolus* beans and 9,000 accessions of tropical forages, all registered into the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture. This shipment will be the first one out of four, representing 55 percent of its current holdings, and will be made of 118 boxes, summing 1,652 kg.

When signing the agreement with the Governing Body of the International Treaty on 16 October 2006, CIAT confirmed the registration of 35,682 accessions for 44 bean taxa, of 6,499 accessions of cassava, and of 23,140 accessions of tropical forages for 668 taxa (mainly tropical legumes and grasses). The three collections are the largest and the most diverse in the world for the respective crop commodities, as the next in-the-line genebank in size and diversity holds one third or less accessions.

With the exception of some islands of the Caribbean and the Guyanas, every country of the Western Hemisphere (often beyond it) has some germplasm of beans, cassava and tropical forages in CIAT. In many cases, this is where their germplasm has been maintained since mid 1978, when the Genetic Resources Unit had been formally established. Some collections obtained through informal exchanges among breeders and agronomists were actually made in the 1940s, and are already extinct in the original fields or natural habitats, but maintained in the genebank of Palmira. This is the case of two old clones of cassava collected in the 1980s on the coast of Peru and Ecuador that were found resistant to white flies when that pest became a major constraint in northern Colombia in the late 1990s. When, over the last decades, there were major climatic failures ('El Niño,' or hurricanes 'Kathryn' or 'Mitch') in tropical America and the Caribbean, or political turmoils devastating rural economies, the collection of Palmira was the actual seed of international efforts to restore farmers' varietal stocks of beans or cassava. The Lima beans pictured on the pre-Columbian Moche pottery of AD 600 years are no longer in the fields of Lambayeque, but are in Palmira.

The genebank of CIAT also has resources for new agribusiness. It has the largest collection in the world of popping beans (305 accessions) of the hardy forage legume *Cratylia* (50 accessions) and different special sources of starch in cassava (for bioethanol, biodegradable plastics.) More traditionally, it has been the backbone for thirty years of continuing crop improvement, and this is reflected in the level of distribution of germplasm accessions. To date, the GRU has distributed 516,694 samples to institutions and farmers worldwide (402,027 of beans to 98 countries, 83,820 of tropical forages to 104 countries, 30,847 of cassava to 66 countries) where the top five country recipients represent less than 50 percent of the requested accessions. Agronomy trials have been the overwhelming top purpose, but accessions are requested for a large variety of purposes (e.g. gene regulation, pathogenic variation in fungi diseases, human nutrition in minor minerals, growth of root systems, study of pollen). With coming climate changes or new food or biofuel markets, our best available options for progress, if not survival, will be in what we have conserved and studied, often against all thinkable predictions.

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