Thirty Years Distributing Impact in Beans and Forages Germplasm

L.G. Santos[1], M.C. Lima[1], O. Toro[1], A. Ciprián[1], S. Castaño[2] & D.G. Debouck[1]

[1]Genetic Resources Unit, [2]Agroecosystem Project; Centro Internacional de Agricultura Tropical, Apartado Aéreo 6713, Cali, Colombia

✉l.g.santos@cgiar.org

The Genetic Resources Unit (GRU) of CIAT was established as such in late 1978, 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 35,898 and 23,140 accessions of these crops, respectively (CIAT, 2008). 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 2008, GRU has received bean accessions from 111 countries and has distributed 102,447 samples to 103 countries (Figure 1). A total of 76 countries have provided and received bean accessions, in many cases more than twice (Table 1). As well known, bean gene pools originated in the American tropics. Countries like Guatemala has provided Meso-American accessions, and has introduced more Andean accessions to improve traits such as seed size and disease resistances thanks to complementary alleles found in the other region. Table 1 shows the 30 main providers of bean accessions to CIAT.

GRU also has received forage accessions from 72 countries, and has distributed 44,263 samples of forage germplasm to 105 countries. A total of 58 countries have been both providers and recipients (Figure 2). Table 2 shows the 30 main providers of forage germplasm to CIAT. As a general observation, neotropical countries have provided legume germplasm to African countries through CIAT GRU, while African countries have provided grass germplasm to South America again through CIAT GRU.

Many countries have provided CIAT GRU with germplasm accessions of beans and forages. The same countries and many more have either received different accessions of beans and forages from CIAT, or have received more materials, or both, thanks to the mechanisms of access and benefit sharing established by the International Treaty on Plant Genetic Resource for Food and Agriculture, with which CIAT has an agreement since October 2006.

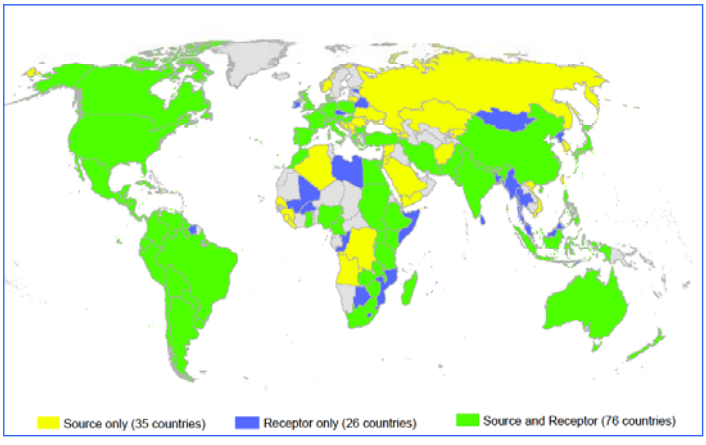

Figure 1. Movement of bean germplasm from countries to CIAT, and from CIAT to Countries.

Table 1. Holdings of bean germplasm at CIAT-GRU and distributed to countries.

COUNTRY OF ORIGIN	NUMBER OF ACCESIONS		COUNTRY OF ORIGIN	NUMBER OF ACCESIONS	
	RECEIVED FROM	DISTRIBUTED TO		RECEIVED FROM	DISTRIBUTED TO
MEXICO	6,052	6,709	PORTUGAL	479	128
PERU	3,663	3,865	THE NETHERLANDS	447	503
COLOMBIA	3,407	8,790	RWANDA	406	646
GUATEMALA	2,759	12,867	INDIA	395	2,796
USA	1,831	17,124	CHILE	391	1,494
BRAZIL	1,721	8,005	FRANCE	374	715
ECUADOR	1,070	1,826	BOLIVIA	364	218
TURQUIA	1,067	43	NICARAGUA	347	901
MALAWI	948	1,113	SPAIN	334	649
HONDURAS	703	1,457	ARGENTINA	330	1,747
COSTA RICA	639	7,766	CAMEROON	330	52
HUNGARY	593	158	VENEZUELA	326	589
ZAMBIA	568	2,598	BURUNDI	304	198
IRAN	515	715	EL SALVADOR	281	3,637
BULGARIA	514	1,003	NIGERIA	255	205

Table 2. Holdings of forage germplasm at CIAT- GRU and distributed to countries.

COUNTRY OF ORIGIN	NUMBER OF ACCESIONS		COUNTRY OF ORIGIN	NUMBER OF ACCESIONS	
	RECEIVED FROM	DISTRIBUTED TO		RECEIVED FROM	DISTRIBUTED TO
BRAZIL	6,017	7,463	PERU	241	4,811
COLOMBIA	4,860	12,390	BURUNDI	223	75
VENEZUELA	2,285	2,201	COSTA RICA	160	1,339
INDONESIA	1,370	585	BELIZE	157	39
THAILAND	1,093	309	ECUADOR	156	1,212
MEXICO	782	1,661	CAMEROON	146	127
KENYA	769	550	MALAYSIA	104	80
PANAMA	701	641	RWANDA	90	88
ETHIOPIA	510	1,227	EL SALVADOR	69	65
ZIMBABWE	486	88	SOUTH AFRICA	58	4
ARGENTINA	448	701	BOLIVIA	55	693
HONDURAS	445	522	PARAGUAY	53	755
TANZANIA	392	35	ANTIGUA AND BARBUDA	46	106
CHINA	314	519	USA	39	1,473
VIETNAM	265	33	NIGERIA	38	887

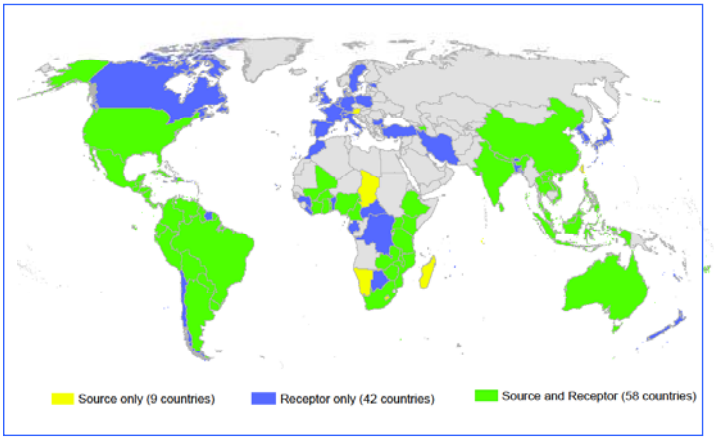

Figure 2. Movement of forage germplasm from countries to CIAT, and from CIAT to Countries.

Acknowledgements

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