The perspective of the International Treaty on PGRFA on monitoring process and data

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International Workshop on Crop Agrobiodiversity Monitoring
23-25 March 2015 Agropolis International, Montpellier, France

www.planttreaty.org

Overview

- Background on the Treaty
- Monitoring the PGRFA under the Treaty:
➢ The Multilateral System
➢ The Global Information System
➢ The Benefit Sharing Fund
➢ The Conservation and Sustainable use of PGRFA

What is the ITPGRFA?

An international legally binding instrument aimed at the

1) **conservation and sustainable use of plant genetic resources for food and agriculture** and

2) the fair and **equitable sharing of the benefits arising** out of their use for sustainable agriculture and food security.

In harmony with the Convention on Biological Diversity

The scope of the Treaty is _all_ plant genetic resources for food and agriculture

J.T.Esquinas

J. T. Esquinas

DIFFERENT TYPES OF SEEDS

J. T. Esquinas
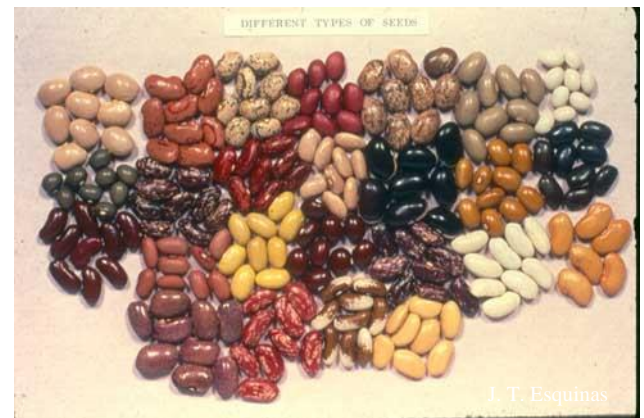
The Treaty's Main Systems

Article 5: Conservation, Exploration, Collection, Characterization, Evaluation and Documentation

Each Contracting party shall [...], in cooperation with other Contracting Parties [...], promote an integrated approach to the exploration, conservation and sustainable use of plant genetic resources for food and agriculture

Article 6: Sustainable Use of Plant Genetic Resources

The Contracting parties shall develop and maintain appropriate policy and legal measures that promote the sustainable use of plant genetic resources for food and agriculture.

Article 9: Farmers' Rights

- Recognition of the enormous contribution that farmers and their communities have made and continue to make to the conservation and development of plant genetic resources.

- Farmers' Rights include the protection of traditional knowledge and the right to participate equitably in benefit-sharing and in national decision-making about plant genetic resources.

- Governments are responsible for realizing these rights.

# The Benefit-sharing Fund

The Treaty's Benefit-sharing Fund:

• Supports projects aimed at smallholder farmers in developing countries who conserve and sustainably use plant genetic resources for food and agriculture.

• Priorities of the Benefit-sharing Fund:

- – sustainable use;

- – on farm management and conservation;

- – information exchange, technology transfer and capacity building.

• Three Calls already

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MLS: Daily Transfers of PGRFA

• 1.6 million documented samples in the System, from CGIAR alone

•information technology tools for managing System operations

•Easy-SMTA

•2 million records of accession transfer reported
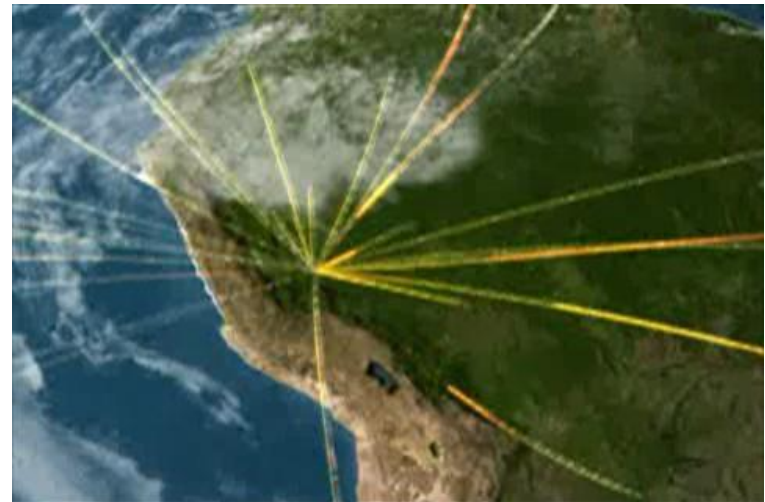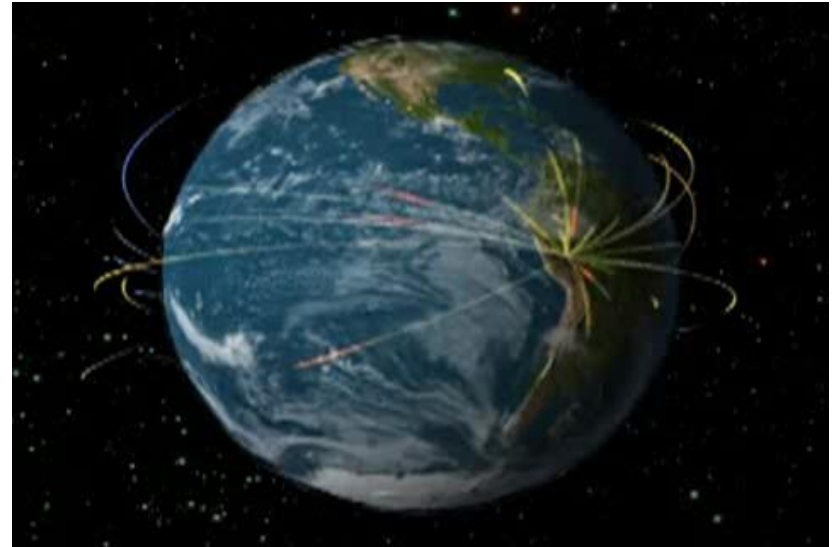
Easy-SMTA and the Data Store

- Easy-SMTA helps SMTA providers with their reporting obligations. It was developed and published in November 2010 by the Secretariat of the International Treaty. It is an information system that allows the on-line reporting, at accession level, for all PGRFA transfers.

- Since then, and based on the experience accumulated in assisting users of the Multilateral System, the tools have been further developed to offer users the acquisition of identifiers for ordering within the global genepool and for concluding agreements on-line.

- More than 2 million accessions were reported in January 2015 and more than 600 users registered globally. The aggregated statistics are available on-line.

The Global Germplasm Flow

- Easy-SMTA and the Treaty Data Store
- New module on statistics **online**:
  - Aggregated figures: SMTAs, Accession level information, PGRFA Under Development, Users of the System, regional germplasm flow, Contracting Parties/Non-Contracting Parties, Annex 1/Non-Annex 1 material, CGIAR Centers, etc.
  - Pie Charts
- What come next: Maps!
- Linking the MLS & the Global Information System

SMTA	
Total	23,664
Provider Countries	20
Recipient countries	157
Sent to CPs	17,826
Sent to non CPs	5,838
With non-Annex 1 crops to developing countries	517
Non Art.15 Providers	5,558
Updated 04-03-2015	
Execution time (msec) 78.9	

PGRFA Material (Accessions)		
Total	1,997,323	
Annex 1 crops	1,919,359	96%
Non-Annex 1 crops	77,964	4%
PGRFA under development	244,200	
Sent to CPs	1,468,132	
Sent to non CPs	529,191	
Non Art.15 Providers	155,935	
Updated 04-03-2015		
Execution time (msec) 925.7		

Users		
Total	602	
Registered last year	523	
Registered this year	79	
Individuals	339	56%
Legal entities	263	44%
Number of Providers	28	
Number of Recipients	6,215	
Updated 04-03-2015		
Execution time (msec) 1.2		

The International Treaty
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

SMTAs Sent by Region

North America: 2.8 %
Africa: 1.6 %
Asia: 19.7 %
Europe: 20.4 %
Latin America and the Caribbean: 55.5 %
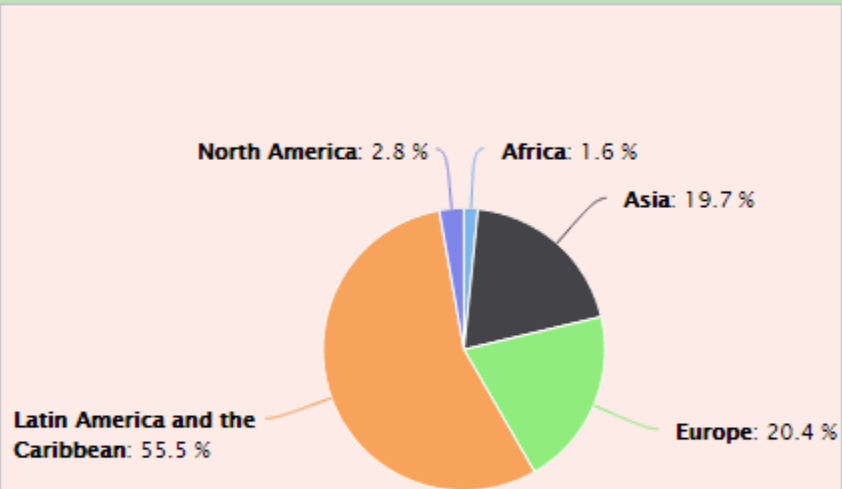
Highcharts.com

SMTAs Received by Region

Southwest Pacific: 1.0 %
North America: 7.1 %
Near East: 9.5 %
Africa: 11.5 %
Asia: 28.8 %
Europe: 26.8 %
Latin America and the Caribbean: 15.3 %

Highcharts.com

The International Treaty

ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Accessions Sent by Region

North America: 0.9 %
Africa: 3.4 %
Asia: 21.1 %
Europe: 6.4 %
Latin America and the Caribbean: 68.2 %
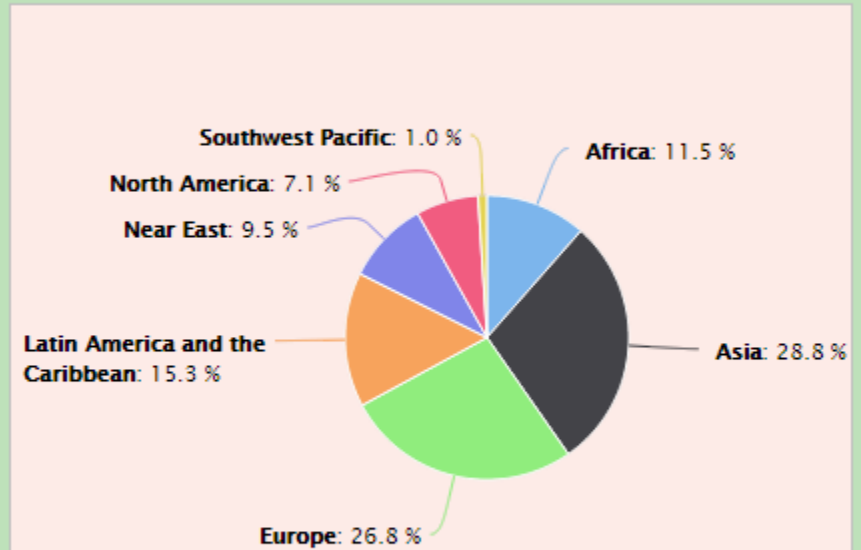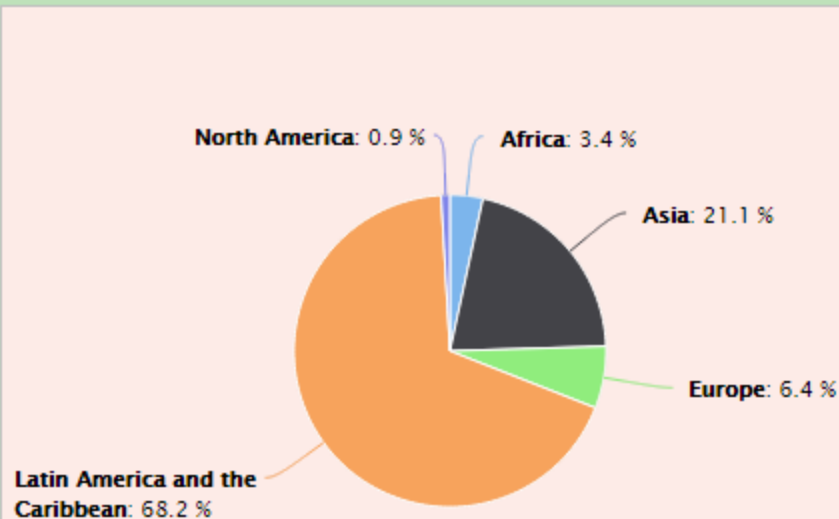
Highcharts.com

Accessions Received by Region

Southwest Pacific: 1.6 %
North America: 6.1 %
Near East: 12.0 %
Africa: 17.2 %
Latin America and the Caribbean: 15.5 %
Asia: 32.5 %
Europe: 15.0 %

Highcharts.com

The International Treaty
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Top 10 Provider Countries by number of SMTAs

FRA: 0.5 %
BEL: 1.2 %
TUN: 1.5 %
IND: 1.6 %
PER: 1.9 %
CAN: 2.8 %
NLD: 5.0 %
DEU: 13.0 %
PHL: 17.9 %
MEX: 54.5 %
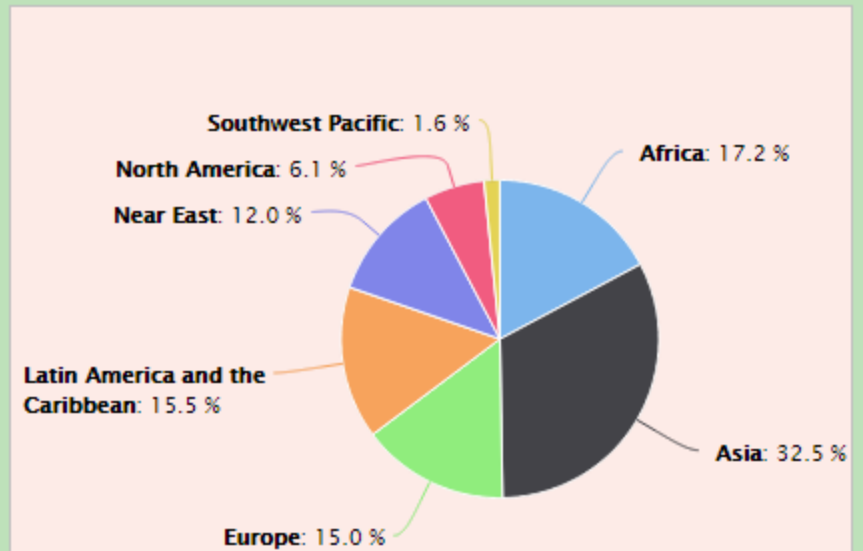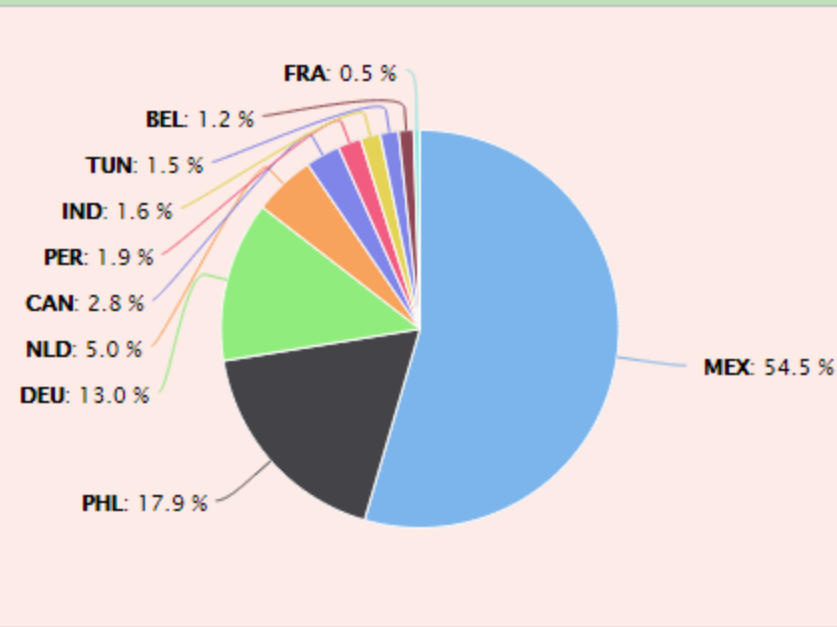
Highcharts.com

Top 10 Recipient Countries by number of SMTAs

NLD: 6.1 %
CAN: 6.2 %
PAK: 6.6 %
IRN: 6.7 %
PHL: 6.8 %
CHN: 7.2 %
USA: 7.9 %
MEX: 12.0 %
DEU: 19.4 %
IND: 21.1 %
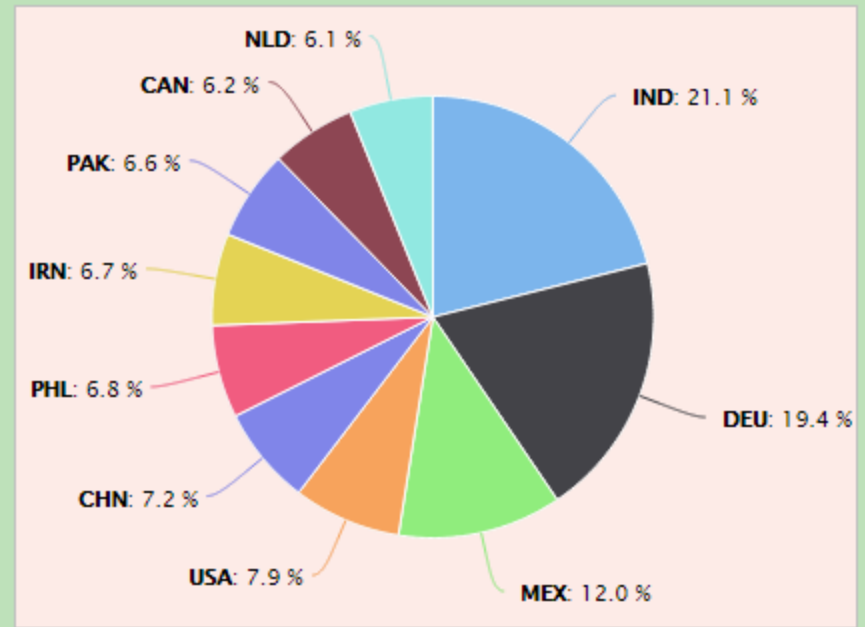
Highcharts.com

Capacity Development

- The Programme CAPFITOGEN has focused on innovative scientific strategies for conservation and efficient use of agricultural biodiversity.

- Particularly in recent years, several techniques and methodologies have emerged that incorporate ecogeography and Geographic Information Systems (GIS) for the collection, conservation, characterization and efficient use of plant genetic resources, which has aroused great interest among curators and technicians.

- These methodologies include simplicity, scientifically proven efficiency and low cost.

- More than 160 users have been trained during the first two years of the Capfitogen Programme. The analysis and quality tools will be integrated in the Global Information System.
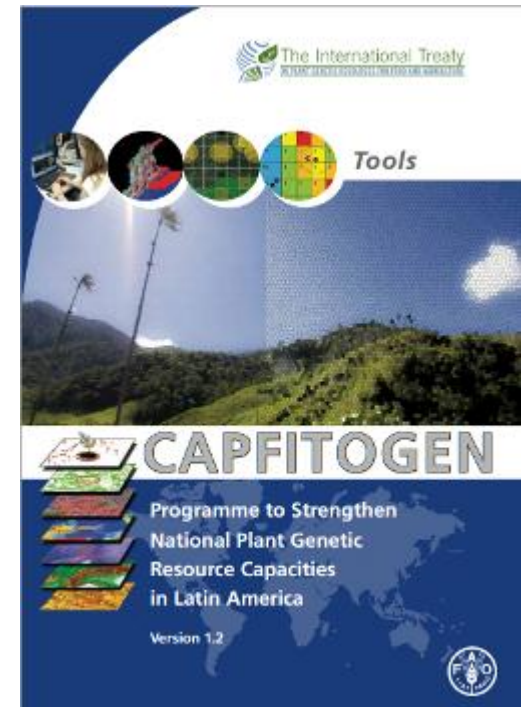
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Global Information System (Article 17 - ITPGRFA)

Contracting Parties shall cooperate to develop and strengthen a global information system to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture.

Current Process

- In 2009, the Treaty Governing Body requested the Secretary to initiate, in collaboration, work on the development of the Global Information System on PGRFA

- In 2013, the Governing Body has established a 'Global Consultation on the Development of Article 17'

- On January 2015 a Expert Consultation in San Diego on Article 17

- February-March, Online Task Forse on PUIDs

- In 2015 the Secretary will Report to the next Governing Body Session and will present a vision paper- October

The Vision

The Global Information System for PGRFA integrates and augments existing systems to create the global entry point to information and knowledge for strengthening the capacity for PGRFA conservation, management and utilization.

Components

The development of a truly effective Global Information System as foreseen in the International Treaty involves, *inter alia:* strengthening existing systems and, where gaps remain, establishing new systems and initiatives; promoting inter-connectivity among systems; and providing overarching mechanisms to ensure ready access to the information and services provided.

Objectives 1/2

- **1-To create a web-based platform with use-oriented entry points to PGRFA information**

- **2-To provide a comprehensive overview and facilitate access to sources of PGRFA and associated information**

- **3-To promote and facilitate interoperability among existing systems by providing clear principles, technical standards and appropriate tools**

Objectives 2/2

- **4-To promote transparency on the rights and obligation of users for sharing and accessing PGRFA associated information**

- **5-To create and enhance opportunities for communication and international and multidisciplinary collaboration to increase knowledge about and add value to PGRFA**

- **6-To provide capacity strengthening opportunities to conserve, manage and use PGRFA and associated information and knowledge**

The Expert consultation on the GLIS San Diego , USA January 2015

The GLIS will make available passport descriptors and other associated non confidential information such as:

- *Characterization*
- *Evaluation*
- *Genotype and genomic information: sequence data and high resolution genomic information*
- *Phenotype and currently non digitized data*

The GLIS will have to be capable of:

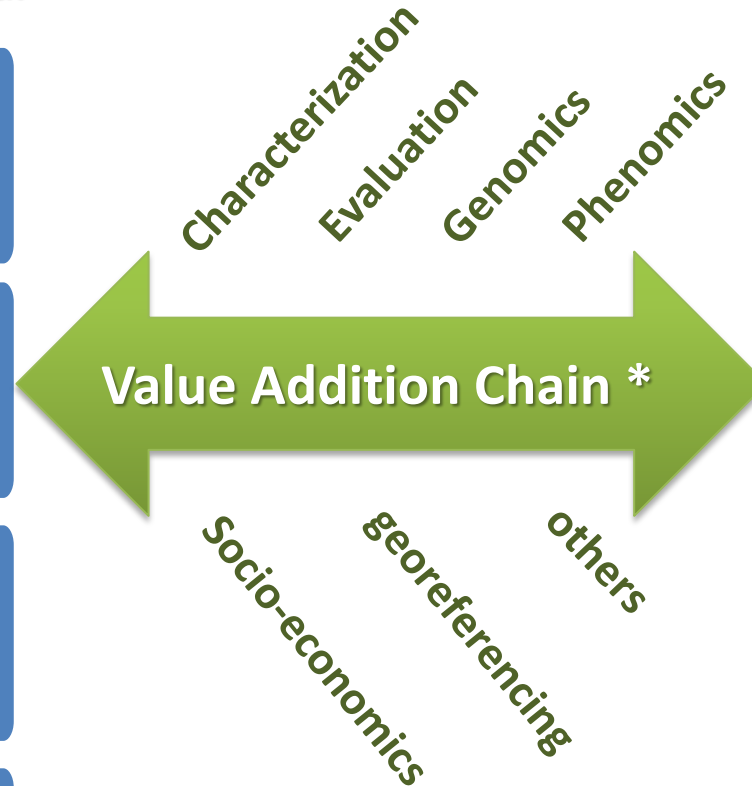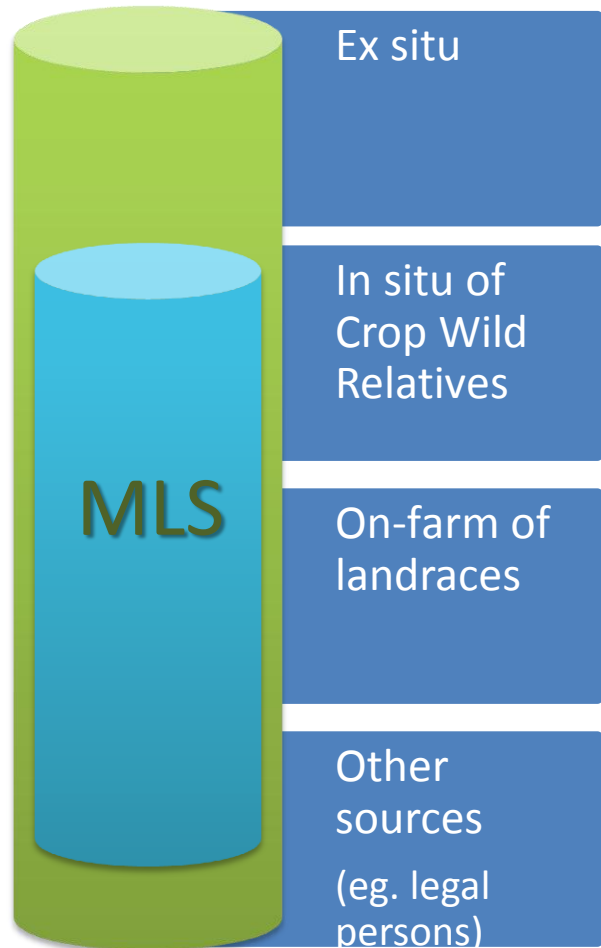- *Receiving, collating and data from diverse and decentralized sources*
- *Closely interact on overlapping activities such as capacity building and dissemination of information*
- *Strengthening existing networks, initiatives and partnerships (Metanetworks)*
- *In-situ conservation and on-farm management*

-Urgency to adopt some sort of Permanent Unique Identifiers
-Task Force (Feb-March 2015): Digital Object Identifiers

Workflow Diagram on Value Addition Chain within the Gobal Information System

Sources of PGRFA material

Uses

MLS

Ex situ

In situ of Crop Wild Relatives

On-farm of landraces

Other sources

(eg. legal persons)

Characterization · Evaluation · Genomics · Phenomics

Value Addition Chain *

Socio-economics · georeferencing · others

-conservation
-research
-breeding
-farming
-administration
-training
-others
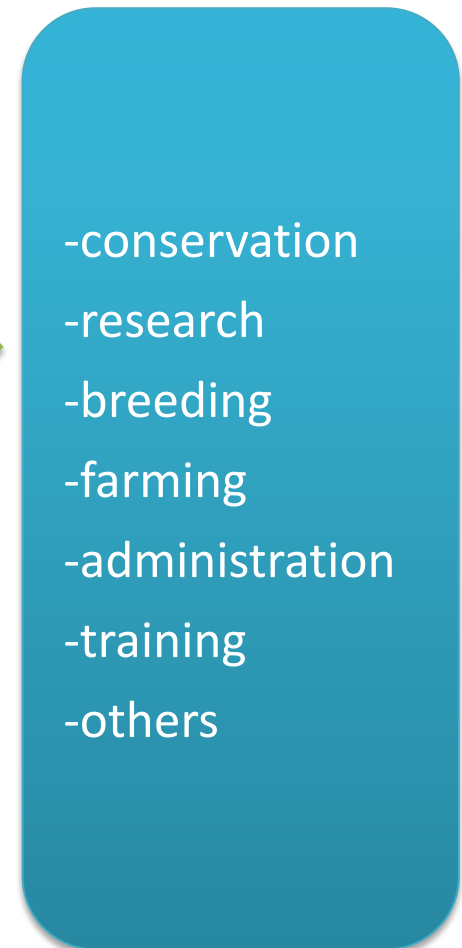
* The value and impact may be higher if resources are concentrated on particular PGRFA material

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• Priorities of the Benefit-sharing Fund:

  – sustainable use;

  – on farm management and conservation;

  – information exchange, technology transfer and capacity building.

• Three Calls already - Disbursed almost 9.6 million USD to directly help 50,000 farmers stay ahead of climate change in more than 45 countries through 39 projects since 2009

• *22 new projects approved in March 2015*

Categories defined for the analysis of the activities proposed in its first and second rounds of funding (2009 and 2010)

Activity category	Project activities which fall within the category
Capacity Building	Training on agronomic practices (including farmer field schools)
	Training on climate change, gender, nutrition, processing, participatory learning
	Training on PGRFA (collection, evaluation, handling, storage, drying)
	Training and support to seed registration processes
	Training, seminars or dialogues on policies
Adding value to ex situ collections	Collection of new materials
	Duplication of materials across genebanks
	(Molecular) characterization of germplasm materials
Information Exchange	GIS-based prediction models
	Databases or inventories about PGRFA conservation or use
	Publications and communication tools
Institutional Support	Stakeholder platforms and/or networks (establishment or strengthening)
	Strengthening of local/informal seed systems (including establishment of CSBs)
Technology Transfer	Introduction of agronomic practices
	Multiplication and distribution of improved varieties for cultivation
	Exchange of PGRFA for (participatory) research or experimental purposes
	Technologies for new/improved food products

Categories defined for the analysis of the activities proposed by applicants to the technology transfer window of the BSF's third call for funding (2014).

Technologies in the form of new or improved PGRFA

Genomic and phenotypic data

Technologies related to the collection and conservation of PGRFA

Technologies related to PGRFA characterization, including molecular marking and genotyping

Technologies related to PGRFA evaluation

Technologies related to breeding

Technologies related to PGRFA information management, including software

Technologies related to the production and distribution of seed (for cultivation)

Technologies related to the cultivation of PGRFA, including agronomic practices

Technologies related to processing of products of PGRFA

Germplasm Inclusion Facility

Crop	No. of Samples
Wheat	25
Rice	7
Vegetables	17
Mustard	4
Flax seed	3
Barley	2
Maize	3
Legumes	13
Finger millet, proso millet and barnyard millet	3
Total	**77**

TRADITIONAL RICE VARIETIES BEST ADAPTED TO LOCAL CONDITIONS AND CHANGING CLIMATE

Description: - Desi Dhan is of medium height and the maturity period of this variety is 5 months.

DESI DHAN

	CLAVE	NOMBRE COMUN	CP: Color predominate	ICP:Intensidad Color predominate	CS: Color secundario	DCS:Distribución Color secundario	CP: Color predominate	CS: Color secundario	Distribuc Color secunda
1	RFOLOGICA DE TUBERCULOS DE LA COLECCIÓN DEL GERMOPLASMA DE PAPA NATIVA DE LA PROVINCIA DE ANDAHUAYLAS								
2	CLAVE	ANDH: Andahuaylas							
3							CARACTERISTI		
4			COLOR DE PIEL DEL TUBERCULO				COLOR DE PULPA DEL TUBERC		
6	ANDH1	LLAMASENQA	9	3	0	0	1	7	
7	ANDH2	GUINDA LLUMCHUYWAQACHI	8	2	7	2	3	0	
8	ANDH3	PUKASUYTU	6	3	0	0	2	8	
9	ANDH4	WIRAPASÑA	2	2	6	4	2	0	
10	ANDH5	SIRENITA	2	2	7	4	2	6	
11	ANDH6	YANA WICHKI	1	2	8	6	2	0	
12	ANDH7	CUCHI AKA	8	1	3	4	2	0	
13	ANDH8	GASPAR	8	1	0	0	2	0	
14	ANDH9	VACAPA LULUN	9	3	0	0	1	0	
15	ANDH10	SANGRE DE TORO	7	3	2	1	2	8	
16	ANDH11	YANA AYACHAKI	9	2	0	0	3	7	
17	ANDH12	PUKA AYACHAKI	7	2	0	0	1	8	
18	ANDH13	CAMOTILLO	2	2	7	6	3	0	
19	ANDH14	WENCCOS	8	2	0	0	2	7	
20	ANDH15	PEPINO SUYTU	2	1	8	6	2	0	
21	ANDH16	MURU WAQRILLO	8	1	5	3	2	7	
22	ANDH17	YANA HUAYRO	8	2	5	1	3	7	
23	ANDH18	MURO HUAYRO	2	1	6	4	2	0	
24	ANDH19	YANASUYTU	9	2	0	0	1	7	
25	ANDH20	PUCA MILLQU	6	2	0	0	1	6	

TRADITIONAL RICE VARIETIES BEST ADAPTED TO LOCAL CONDITIONS AND CHANGING CLIMATE

BIHAR

Description: - The plant of Dudhiya Bakol is a tall variety and the maturity period is from 140-150days. It is resistant to floods.

Dudhiya Bakol

Description: - Poornima variety is of medium height. The maturity time is 100-110 days. It is suited to rainfed areas and is disease resistant.

Poornima

Description: - The Danteshwari variety is disease resistant. It matures in 105 days and has long slender grains.

Danteshwari

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The Global Plan of Action for PGRFA

Supporting component of the Treaty

Article 14 - Global Plan of Action

Recognizing that the rolling Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture is important to this Treaty, Contracting Parties should promote its effective implementation, including through national actions and, as appropriate, international cooperation to provide a coherent framework, inter alia, for

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

COMMISSION ON
GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE

Tratado internacional
SOBRE LOS RECURSOS FITOGENÉTICOS PARA LA ALIMENTACIÓN Y LA AGRICULTURA

![The International Treaty — ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE]

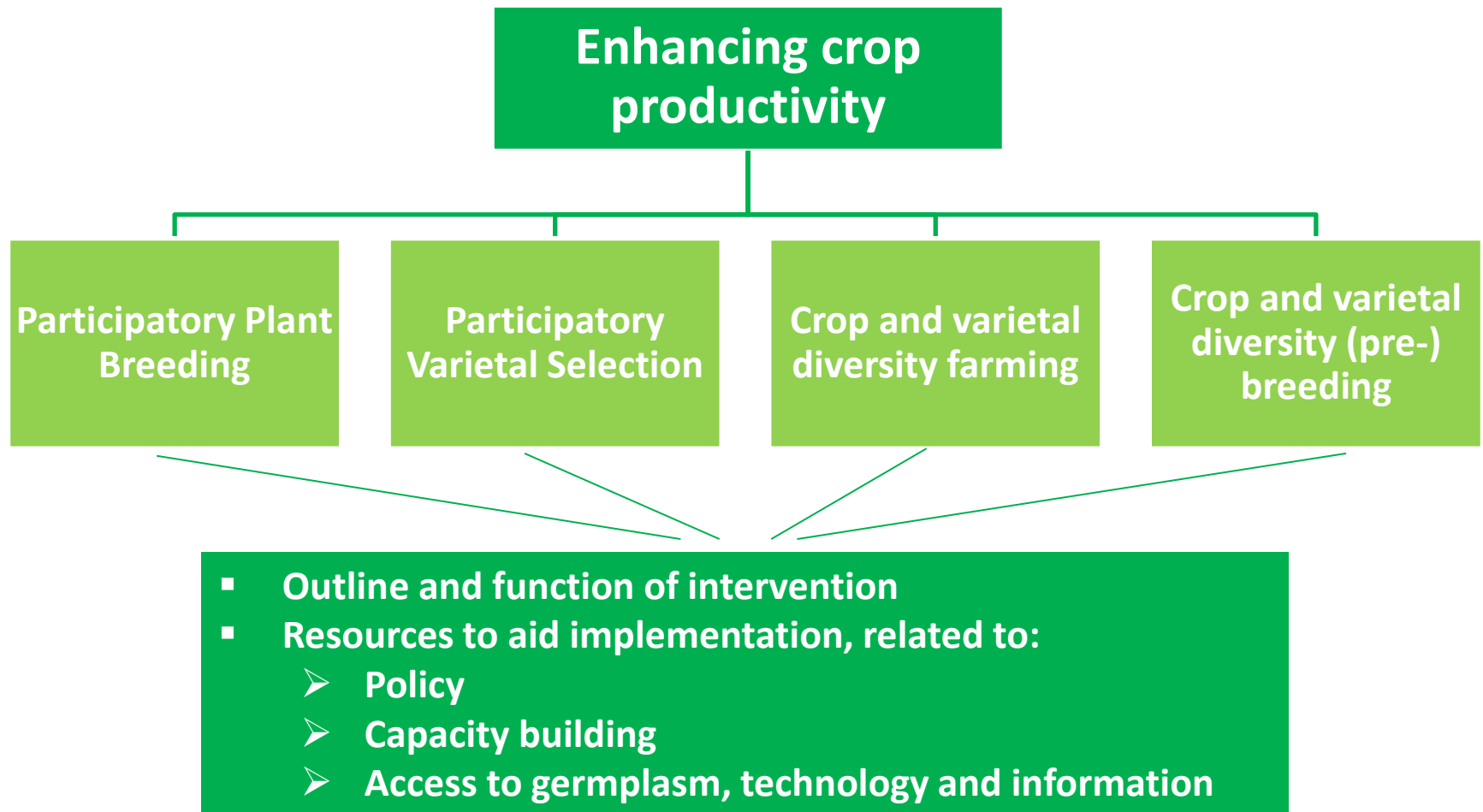# CONCEPT OF THE TOOLBOX ON SUSTAINABLE USE OF PGRFA

Tools

- A collection of tools accessible to the user and not set out in a defined sequence or pattern

Resources

- Technical information, policy options, regulatory guidelines, training opportunities, decision tools, and other materials

Conclusions

- The Treaty provides policy guidance on the conservation and sustainable use of all plant genetic resources for food and agriculture
- It directly operates mechanisms dealing with conservation and sustainable use with contracting parties and stakeholders
- It generates and helps to exchange information and knowledge
- There are yet gaps and opportunities at policy and operational level

Thank you!

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