The International Treaty
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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Overview of the International Treaty on Plant Genetic Resources for Food and Agriculture

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Secretariat of the ITPGRFA

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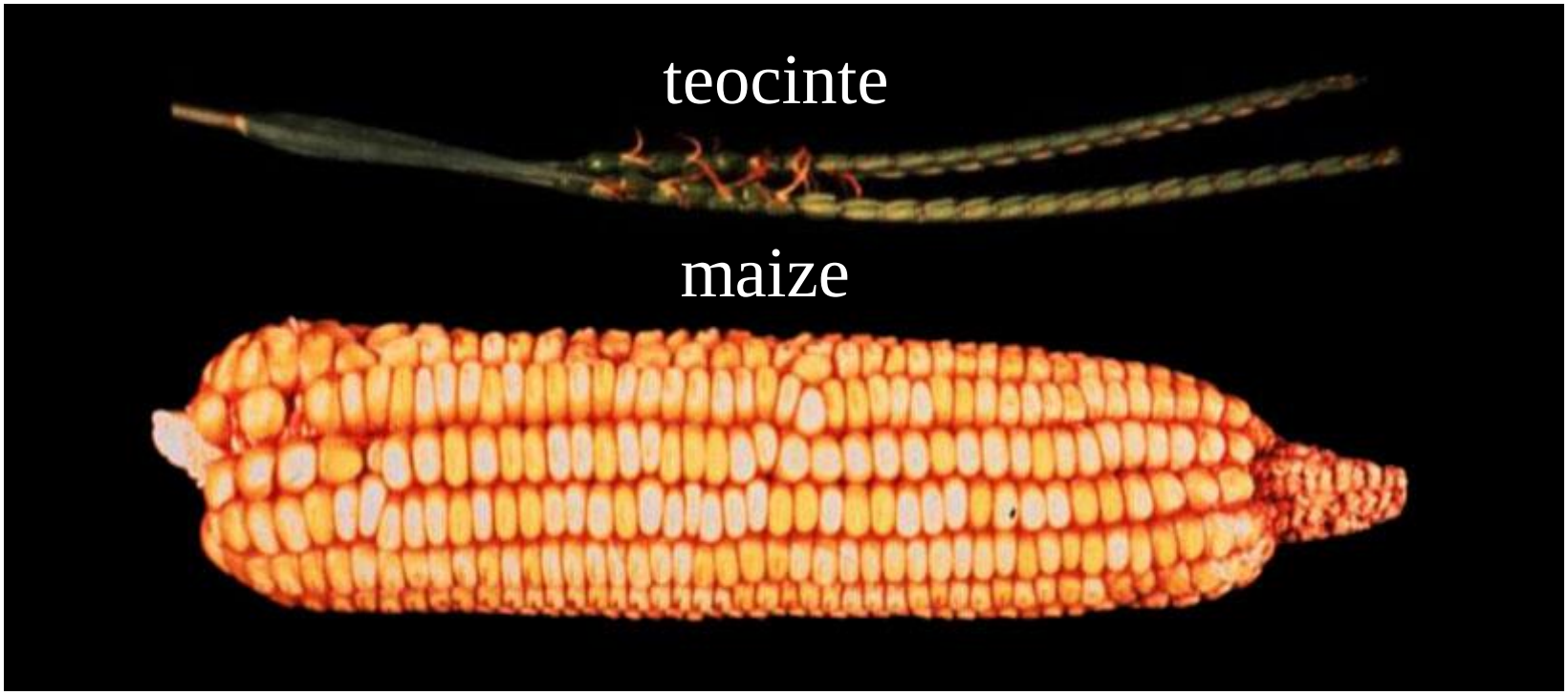
Importance of PGRFA for food security and Sustainable Development

- Over 1 billion people suffer from chronic hunger and malnutrition.
- The world population will increase to over 9 billion by 2050.
- Agricultural production must increase by 70%.
- 70% of the increase in cereal production is expected to come from increased yields.
- Plant genetic resources are essential for future food security and sustainable development.

Specificity of PGRFA

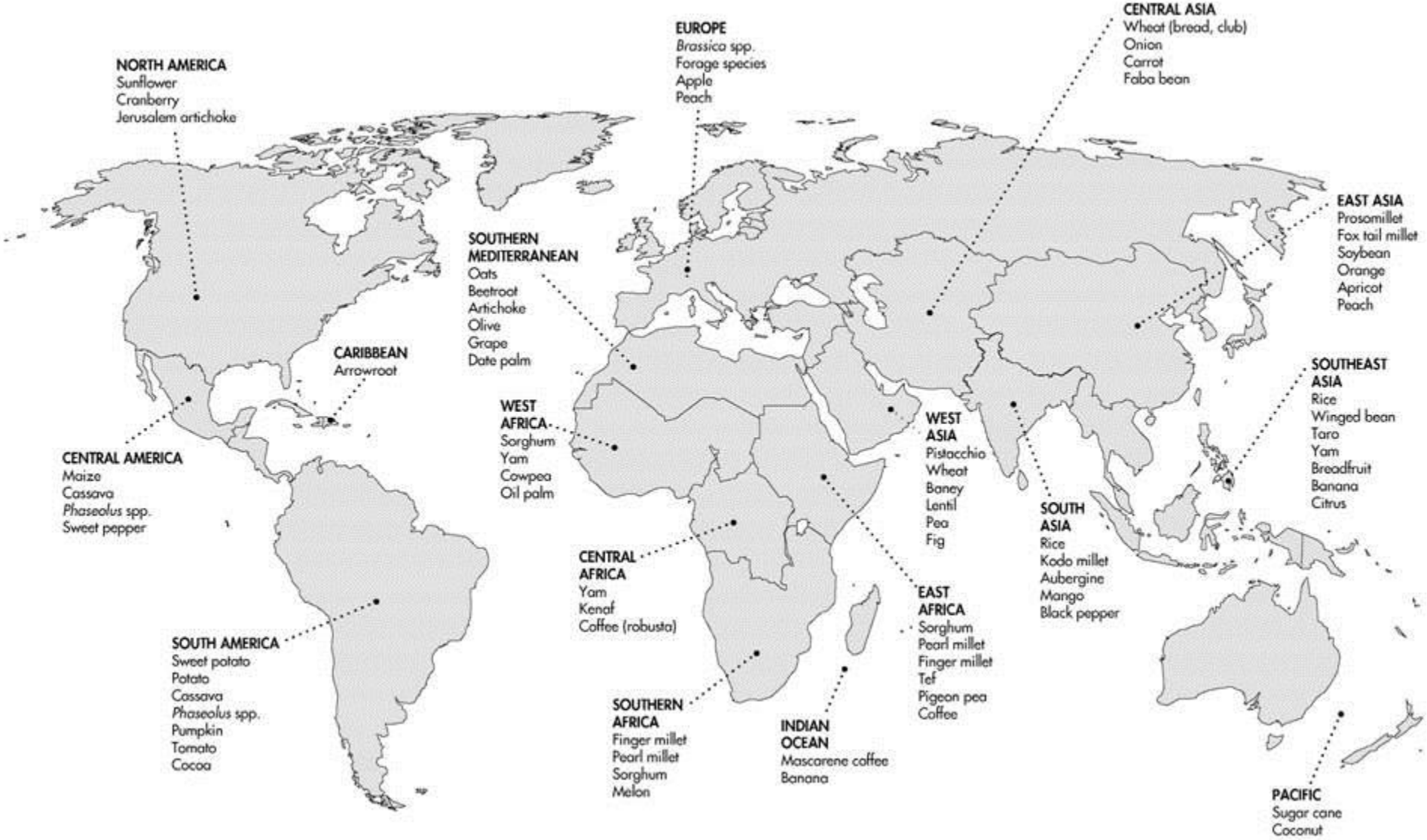
- Farmers altered original wild plants, and further developed by breeders;
- They created diversity by adapting crops to new ecosystems and new human needs;
- Countries and regions are “interdependent”: that is, they all depend for their food and agriculture on crops that originated elsewhere.

Many crops cannot survive in nature: maize, with its very tight ears, cannot seed itself. Compared to the original wild *teocinte*, maize is almost unrecognisable



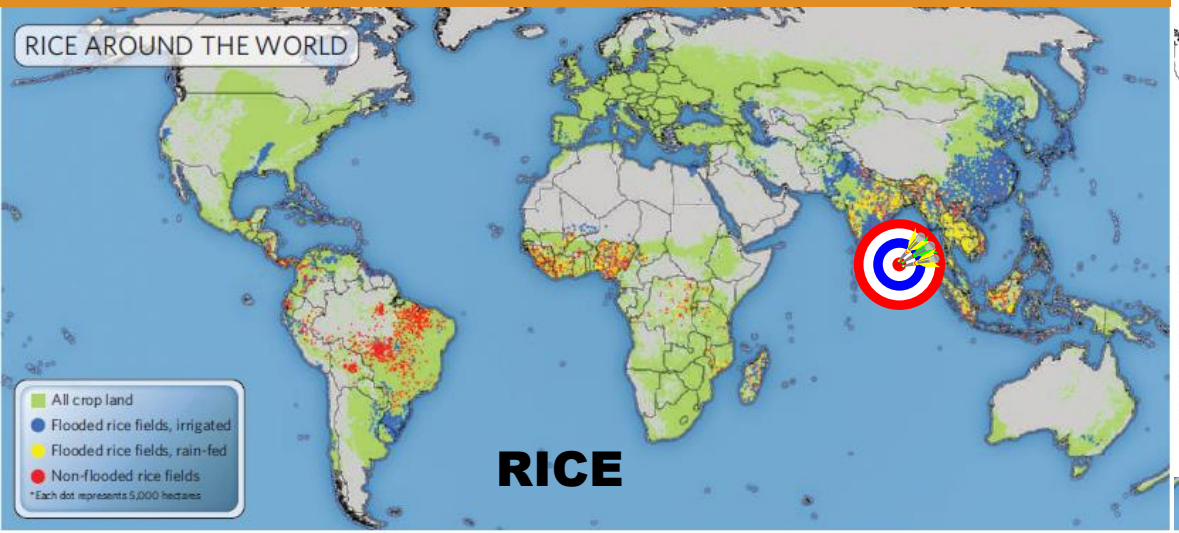
Agriculture depends on the diversity *within* crops

The centres of origin/diversity of some major plants

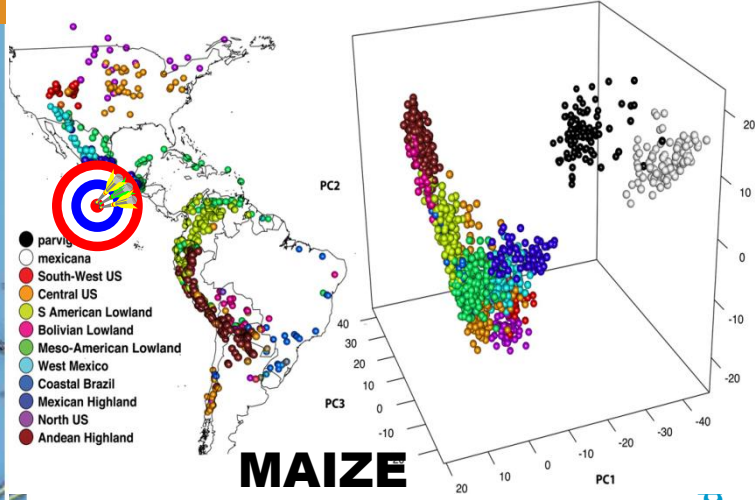


All countries interdependent on PGRFA

- As a result, all countries are now interdependent on each other for PGRFA: they all depend for their food and agriculture on crops that originated elsewhere.
- On average, 70% (and, in some places, up to 100%) of each country's agricultural crops originated elsewhere.



RICE



MAIZE

Genetic signals of origin, spread, and introgression in a large sample of maize landraces PNAS , 2011

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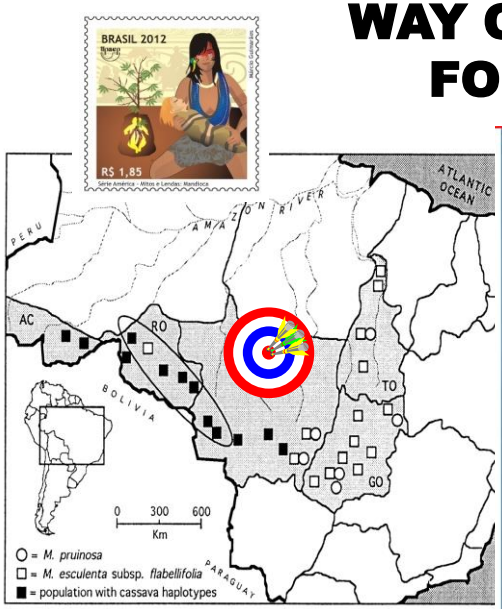
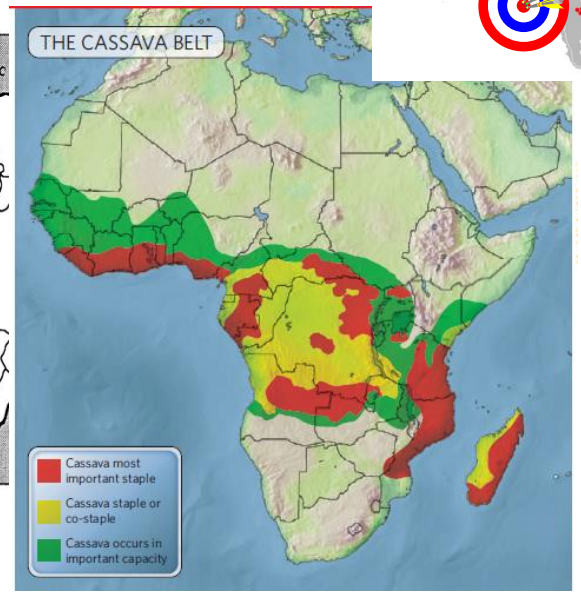
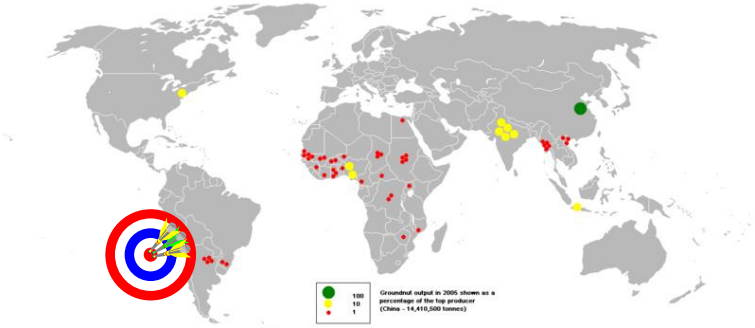
GLOBAL INTERDEPENDENCY REQUIRES A DIFFERENT WAY OF ABS FOR FOOD CROPS



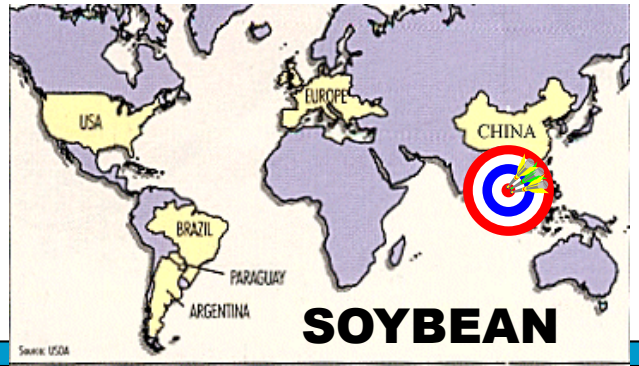
CASSAVA





PEANUTS

Soybeans originated in Southeast Asia and were first domesticated by Chinese farmers around 1100 BC. By the first century AD, soybeans were grown in Japan and many other countries.



SOYBEAN

Food security and climate change

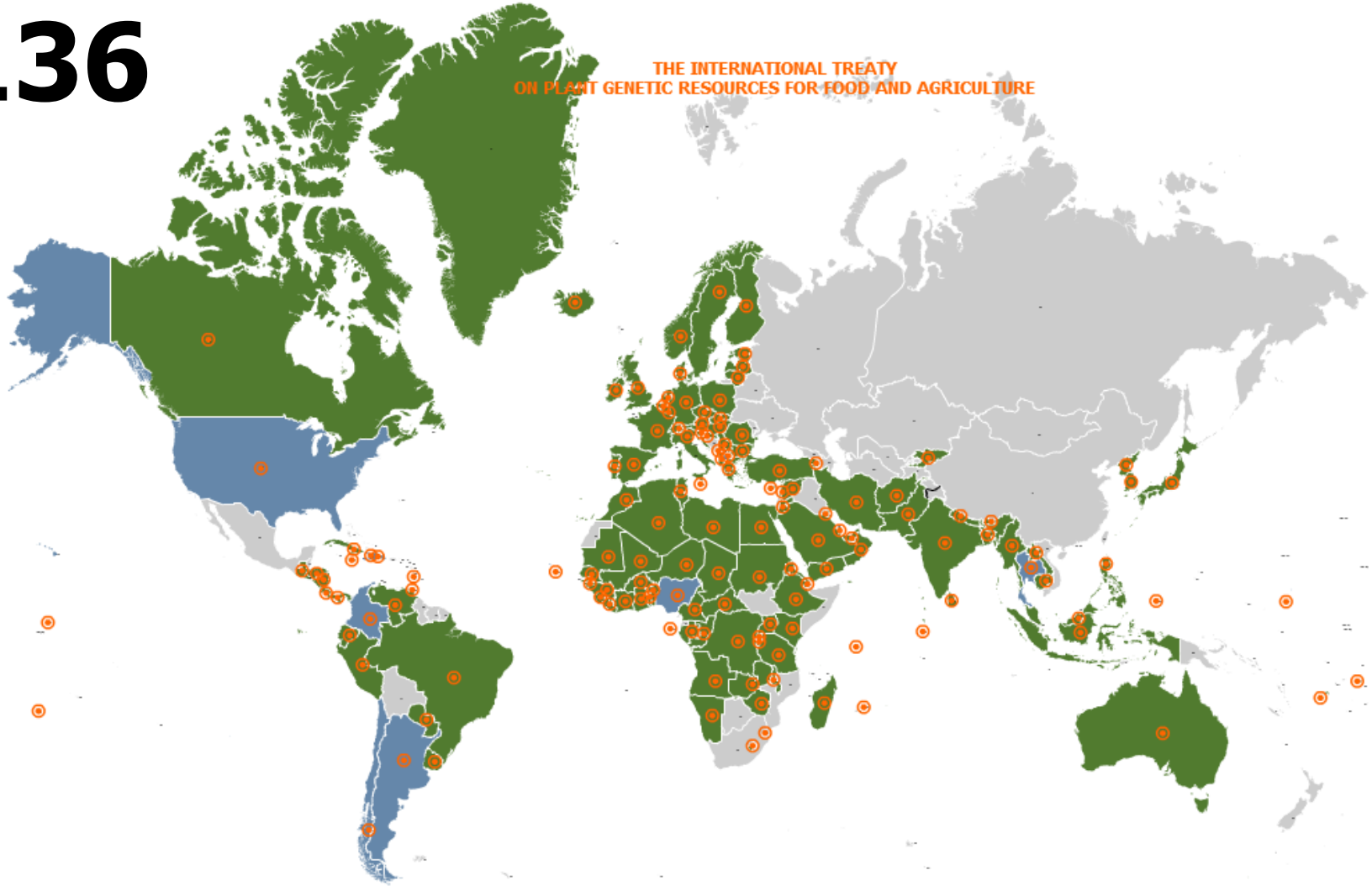
- Climate change will alter growing conditions for crops;
- Abiotic and biotic stresses associated with climate change are exceeding the adaptive capacity of many traditionally grown crops;
- Countries will need to look for sources of adaptive traits in genetic diversity in other parts of the world: different varieties within species, or new species;
- **Climate change will increase the interdependence of countries on PGRFA**.

The International Treaty on PGRFA

GLOBAL INTERDEPENDENCY REQUIRED A DIFFERENT WAY OF DEALING WITH FOOD CROPS

- hence the Treaty;
- Adopted in 2001;
- Entered into force 2004;
- Treaty Systems fully operational since 2007;
- Membership: 136 Contracting Parties so far;
- About 40 countries from Africa.

136



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What are the Treaty's objectives?

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- The conservation and sustainable use of plant genetic resources for food and agriculture
- The fair and equitable sharing of benefits derived from their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security

Article 1.2

- These objectives will be attained by closely linking this Treaty … to the Convention on Biological Diversity

Article 3: the scope of the Treaty is all plant genetic resources for food and agriculture

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

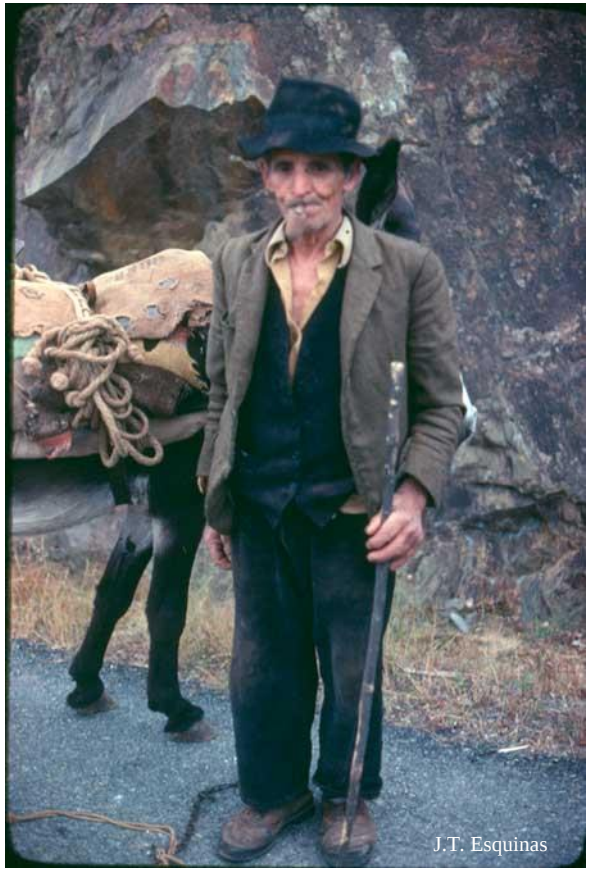
Each Contracting party shall … , in cooperation with other Contracting Parties …, promote an integrated approach to the exploration, conservation and sustainable use of plant genetic resources for food and agriculture

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.



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Article 17: Global Information System

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.

[…]

The Multilateral System of Access and Benefit-sharing (MLS)

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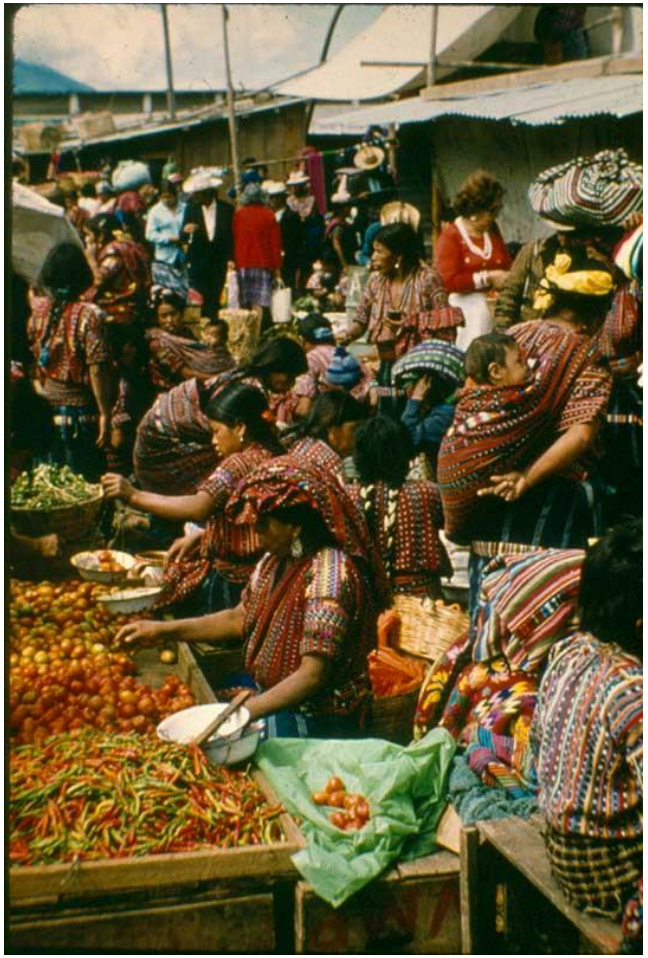
The Treaty establishes a multilateral system, both to facilitate access to plant genetic resources for food and agriculture, and to share, in a fair and equitable way, the benefits arising from their use.

The Multilateral System ...

- ... consists of genetic material of a set of crops, listed in *Annex I* to the International Treaty, and other crops;
- Those crops provide about 80% of our food from plants.



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Benefit-sharing includes

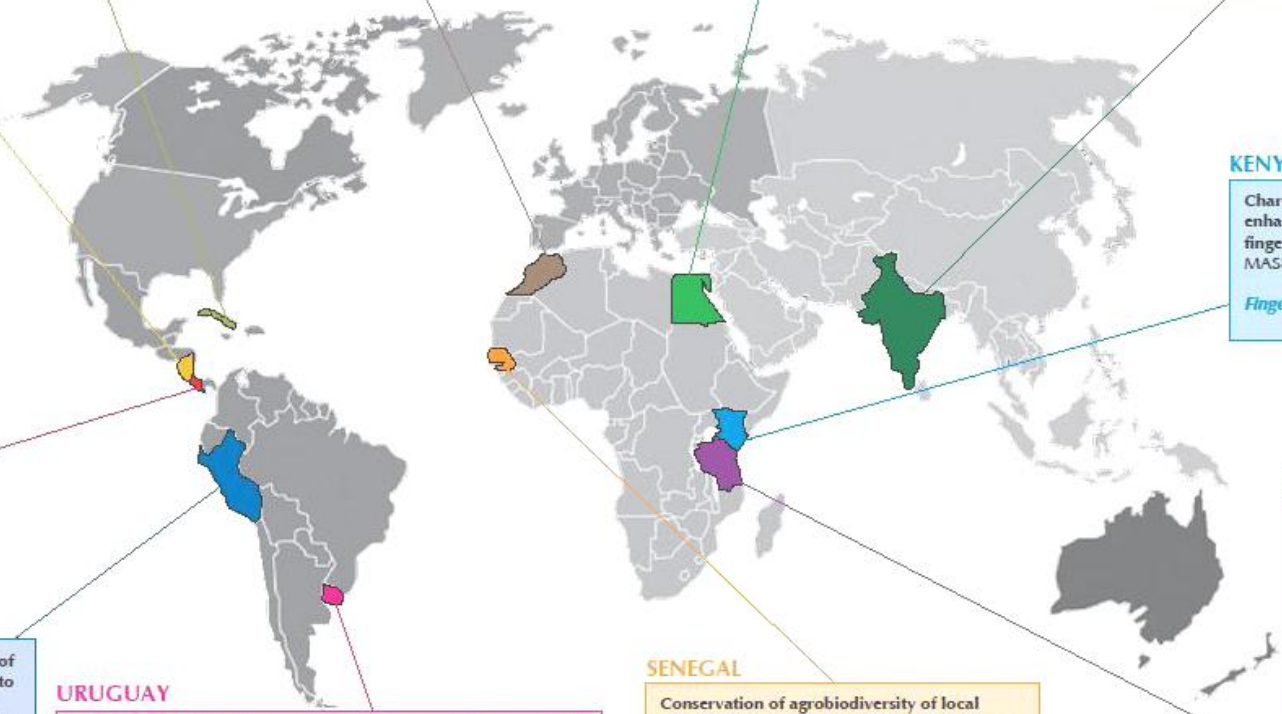
- Facilitated access, which is, itself, a major benefit
- Exchange of information
- Access to and transfer of technology
- Capacity building
- The sharing of monetary and other benefits of commercialization

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 funding cycles already

Projects 2009-2011 under the Benefit-sharing Fund



CUBA

Contribution of traditional methods for *in situ* conservation and management of maize (*Zea mays* L.) and bean (*Phaseolus* spp.) to agricultural families in Cuba
FUNDAMENTAL RESEARCH INSTITUTE ON TROPICAL AGRICULTURE

Maize, bean

MAROCCO

On-farm conservation and mining of local durum and bread wheat landraces of Morocco for biotic stresses and incorporating UG99 resistance
NATIONAL AGRICULTURAL RESEARCH INSTITUTE

Wheat

EGYPT

On-farm conservation and in vitro preservation of citrus local varieties and sustainable utilization in Egypt
NATIONAL GENE BANK AND GENETIC RESOURCES

Citrus

INDIA

Conservation, dissemination and popularization of local specific farmer-developed varieties by establishing village level enterprises
PEERMADE DEVELOPMENT SOCIETY

Cassava, yam, bean, pea, ash guard, durumstick, pepper, ashwati, cardamom, nutmeg

NICARAGUA

Rescue, conservation and sustainable management of teocintle of Nicaragua (*Zea nicaraguensis* Iltis & Benz) in the Apacunca Genetic Reserve
AGRICULTURAL NATIONAL UNIVERSITY

Wild relative of maize

KENYA

Characterization, genetic enhancement and revitalization of finger millet in western Kenya
MASENO UNIVERSITY

Finger millet

COSTA RICA

Identification of useful potato germplasm adapted to biotic and abiotic stresses caused by global climate change
UNIVERSITY OF COSTA RICA, AGRICULTURAL RESEARCH CENTRE (CIA)

Potato

TANZANIA

Strengthening on-farm conservation and use of sorghum, finger millet, lablab beans and yam crop diversities for improved food security and adaptation to climate change in Tanzania
NATIONAL PLANT GENETIC RESOURCES CENTRE

Sorghum, finger millet, lablab bean, yam

PERU

Conservation and sustainable use of native potato diversity in the Potato Park, Cusco
ASSOCIATION FOR NATURE AND SUSTAINABLE DEVELOPMENT (ANDES)

Potato

URUGUAY

Broadening of potato (*Solanum tuberosum*) genetic basis through introgression of local wild species, *Solanum commersonii*
NATIONAL INSTITUTE OF AGRICULTURAL RESEARCH (INIA)

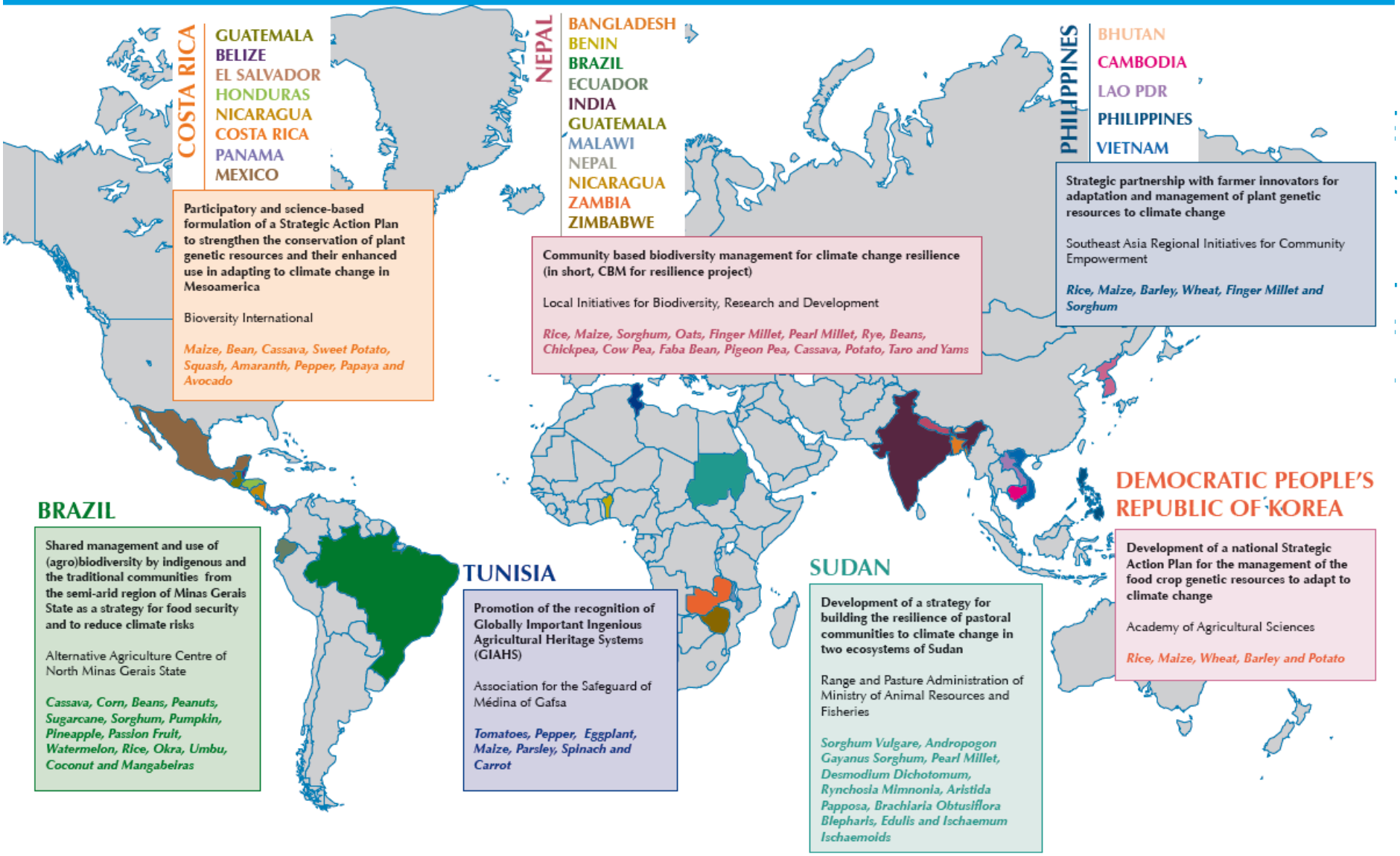
Potato

SENEGAL

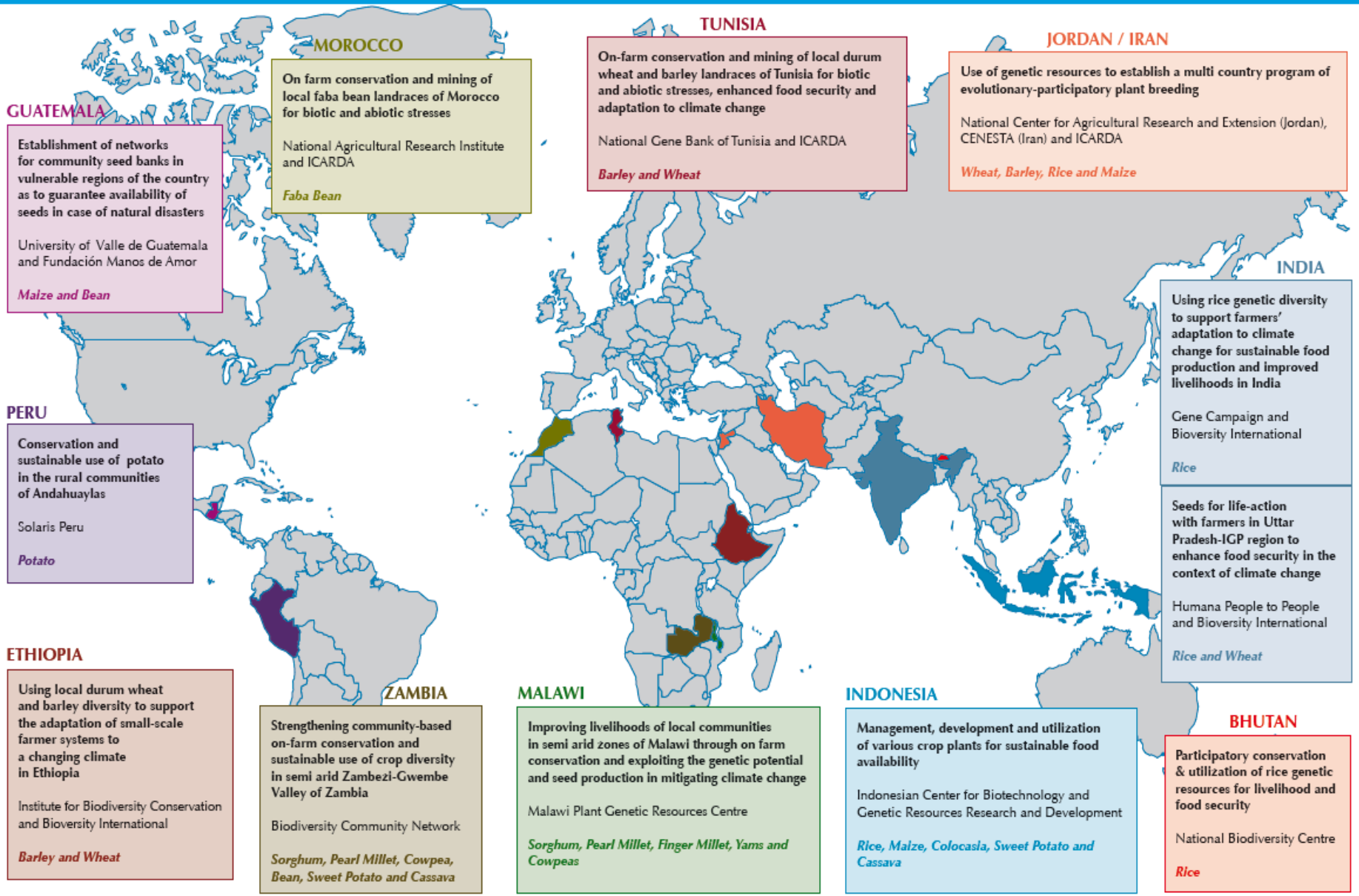
Conservation of agrobiodiversity of local cultivars: millet, maize and sorghum through improved participation in Senegal
INSTITUTE FOR AGRICULTURAL RESEARCH (ISRA)

Millet, Maize, Sorghum

SECOND FUNDING CYCLE OF THE BENEFIT-SHARING FUND: Window 1 – Strategic Action Plans



SECOND FUNDING CYCLE OF THE BENEFIT-SHARING FUND: Window 2 – Immediate Action Projects



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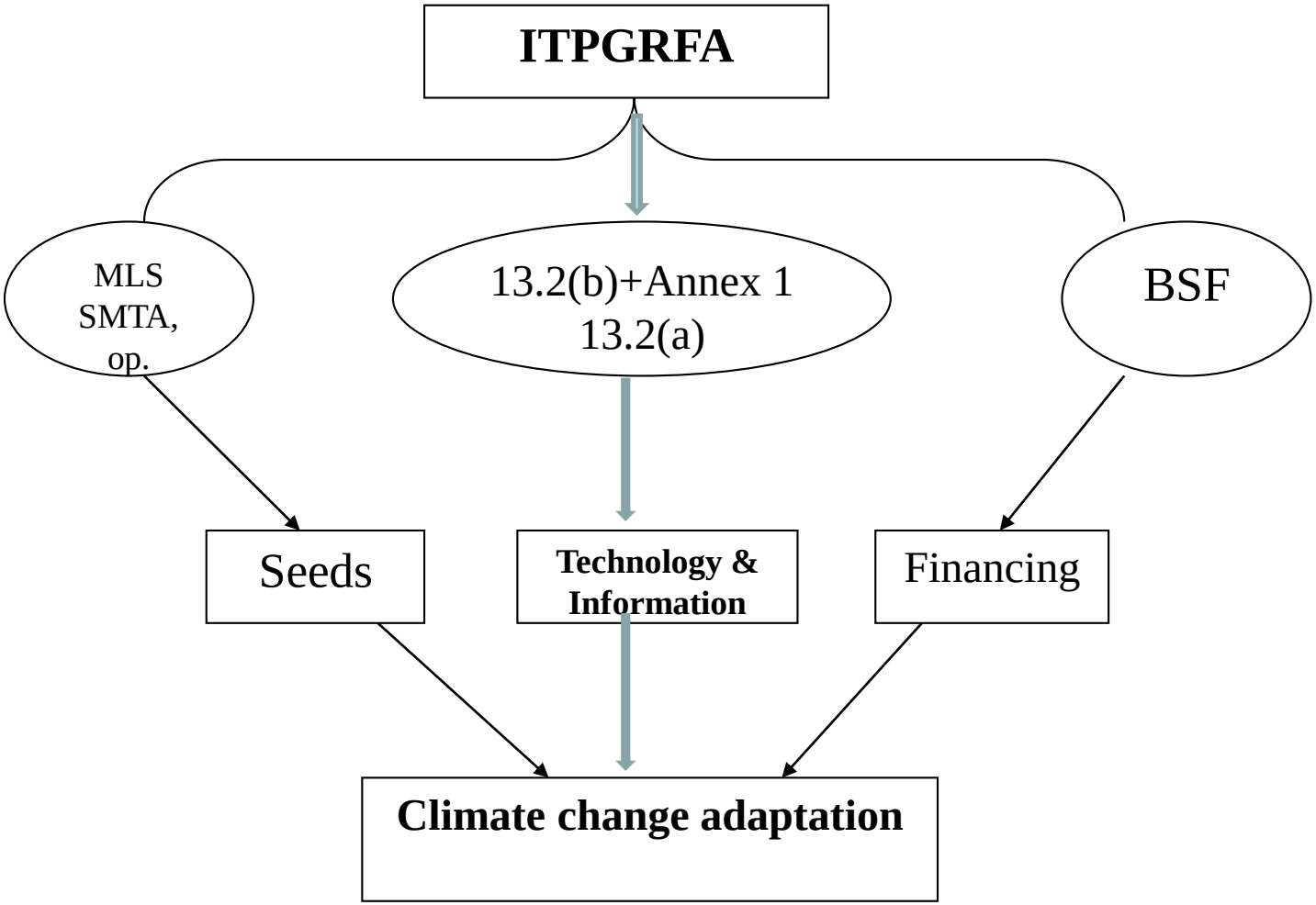
A Framework of ITPGRFA for Climate Change Adaptation



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Important Outcome of the Sixth Session of the Governing Body (GB-6), October 2015

- ***Acknowledging*** the need for continued capacity-building support to Parties, especially developing countries, for the mutually supportive implementation of the Treaty, the Convention on Biological Diversity and its Nagoya Protocol

- ***Welcomes*** the efforts of the Secretariats of the Treaty and the Convention on Biological Diversity in collaboration with the African Union Commission, Bioversity International and ABS Capacity Development Initiative and other partners to bring together stakeholders and experts involved in the implementation of the Treaty, the Convention, and the Nagoya Protocol, and ***requests*** the Secretary, […], to continue facilitating such interaction on the mutual supportiveness, harmonious and appropriate implementation of the instruments.

Thank you!

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