

Caribbean Crop Diversity Initiatives – Perspectives from the FAO

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Outline of the Presentation

- FAO project AG:GCP/ RLA/108/ITA
 - Background
 - Recommendations from the project
- PGR-related gaps identified in recent FAO projects
- FAO's current Global initiatives re PGR
 - Seed and PGR Team
 - International Treaty on PGR for Food & Agriculture
- Joint FAO/OECD Workshop, *Building resilience for adaptation to climate change in the agriculture sector* 23-24 April 2012, Rome

FAO project AG:GCP/ RLA/108/ITA
(1992 to 1997)

Background (1 of 4)

- Project justification:
 - CARICOM Member States have a wide range of germplasm of the most common food crops which have the potential to increase crop production and productivity
 - CARICOM, recognizing that good-quality seed plays significant role in boosting crop productivity and quality, decided to lay the foundation for development of a sustainable regional seed programme

Background (2 of 4)

- Requested Italian Government to fund a project for:
 - establishment of cadre of trained professionals and technicians
 - a proper information network on germplasm availability;
 - an appropriate mechanism for seed-quality control in the region to facilitate seed exchange

Background (3 of 3)

- Phase I (1992-1994):
 - 513 professionals and technicians trained (regional / national training, fellowships, conference workshops)
 - Regional information network - Caribbean Seed and Germplasm Resources Information Network (CSEGRIN) established for germplasm information, collection and exchange
 - Regional technical standards for true seed developed; basic seed testing and handling equipment provided
- To strengthen and consolidate gains made during Phase I, CARICOM countries requested further assistance: Phase II was developed

Background (3 of 4)

- Project partners: FAO, CARICOM Secretariat (CARISEC), Government - Trinidad & Tobago (host country) (1994)
- Started: January 1995 and completed 30 June 1997
- Italian Trust Fund: \$US 1,570 361, GOTT \$TT 4,700,000
- FAO: executing agency
- Government implementing agencies:
 - CARISEC
 - Ministries of Agriculture of participating countries
 - Caribbean Agricultural Research and Development Institute (CARDI)
 - The University of the West Indies (UWI)

Short-term Objectives (1 of 2)

- Expand capacity of selected regional and national seed production activities to facilitate production of seeds & vegetative planting materials
- Alleviate constraints to massive propagation of vegetative planting material
- Facilitate establishment of a functional regional seed testing laboratory to monitor quality of seed in CARICOM & establish a basis for seed certification programmes

Short-term Objectives (2 of 2)

- Set up a long-term training programme and short specialized courses on seed technology and vegetative plant propagation, germplasm collection and storage
- Upgrade CSEGRIN (to include inventory of seed qualities / producers)
- Establish a varietal catalogue and data bank for CARICOM, to include major crops cultivated locally
- Facilitate the release of improved germplasm to farmers

Long-term Objectives

- To provide quality seed and planting materials of major crops in order to enhance both national food security and export diversification
 - This objective supported efforts of all CARICOM Governments and Suriname to develop a policy of self-sufficiency through extensive use of good-quality seeds to achieve higher crop yields
- Ultimate aim: the endeavour becomes ongoing, supported at regional & local government levels

Recommendations from the Project
(several of which are relevant today!)

General Recommendations

- In view of large heterogenousness (crop types / stage of seed program development), crop zoning needed:
 - some countries produce true seed
 - others focus on propagules of vegetatively propagated crops
- Sustainability of seed programme for food security and rural development require active participation of farmers and realistic seed policy in each Member country

General Recommendations

- Limited resources require that a regional approach be taken for some elements:
 - Seed:
 - varietal development
 - massive propagation (all crops)
 - Vegetatively propagated crops:
 - disease indexing
 - *in vitro* plantlet propagation of disease-free foundation stocks
 - a comprehensive certification system

1. Varietal Improvement

Coordinated varietal trials

- A programme of coordinated trials should be launched for the most important regional crops in order to provide a steady inflow of good adapted varieties for seed multiplication

Varietal maintenance

- A programme of varietal maintenance must be set up to guarantee the genetic constitution of improved varieties in light of future exchange or purchase of genetically-engineered seed

2. High-quality Improved Planting Materials (1 of 2)

Seed supply and demand record

- For a successful seed business of identified varieties, an up-to-date record of planting material supply and demand must be maintained
- Taking logistical requirements into account, this record is best kept by a regional institution. The survey system initiated by the project could be used

Seed conditioning facilities

- Seed handling facilities in Belize, Jamaica and Suriname should be reinforced to increase capacity and efficiency
- ?Seed testing laboratory at Central Experiment Station, Centeno, Trinidad, be converted into regional facility

2. High-quality Improved Planting Materials (2 of 2)

Vegetative propagation facilities

- Propagation stations need to be refurbished for necessary hardening and weaning facilities
- Efforts should be concentrated in strategic locations to be used for introduction of new, high-quality disease-free planting propagules in CARICOM Member States

Technical standards for vegetative planting material

- Elements for certification of VPM developed by project be pooled together to:
 - develop a certification system
 - plan for mass propagation of vegetative propagules needed for cultivation of most of the important crops of the region

3. Seed Policy (1 of 2)

Seed policy plan

- Follow up action: ensure that Governments adopt and utilize seed policy plans already developed in some countries, in line with agricultural plans

Pricing policy of planting materials

- Governments should ensure that their stations operate on a cost-recovery basis so as to ensure sustainability of operations.
- Degree of autonomy and independent action should be granted to the propagation station in order to increase efficiency

3. Seed Policy (2 of 2)

Employee training and deployment policy

- A dynamic & appropriate policy should be pursued by member countries to ensure that trained personnel are properly utilized & provided with a friendly working environment
- Governments should fulfill their obligations to personnel trained under the project so as to motivate them to contribute to the further development of the regional seed programme

4. Computerized Seed-related Info

- To ensure timely dissemination of seed-related information:
 - CSEGRIN should be further developed to incorporate supply and demand forecasts, registers of seed growers in region and other important statistics
- To ensure trouble-free operations in future, the task should be assigned to a group or committee of scientists under supervision of regional institution or a group of regional institutions
 - Group should be responsible for maintenance, upgrading, updating and dissemination CSEGRIN data

5. Regional Germplasm Bank and 6. Training

REGIONAL GERMPLASM BANK

- Regional germplasm banks containing germplasm of agronomic importance should be set up or improved

TRAINING

- Provision should be made to train more people to MSc level to cover leadership roles in plant breeding, root crop production, horticulture and seed quality control
- It is recommended that the laboratory manual on tissue culture be extended to cover all the important crops in the region

Regional Consultation on Sustainable
Crop Production Intensification (SCPI)
4-5 October, UN House, Barbados

Concerns re PGR issues

- Recent FAO projects (e.g. on Urban and Peri-Urban Agriculture; Black Sigatoka Disease Management) highlighted a general lack of availability, to farmers, of:
 - good quality seed of locally-adapted varieties
 - clean planting material
- Recommendation: the region should move to Climate Smart Agriculture and this should include PGR

FAO's Seed and PGR Team and International Treaty on PGR for Food and Agriculture (ITPRGFA)

FAO's Seed and PGR Team

- Seeds & Plant Genetic Resources team - Plant Production and Protection Division (AGP): assists Member Countries in developing effective policies and capacities for an integrated approach to conservation and sustainable use of plant genetic resources for food and agriculture including seed systems, for increasing crop production and achieving food security

ITPGR for Food and Agriculture

- Secretariat hosted at the FAO HQ, Rome
- The Treaty aims at:
 - recognizing the enormous contribution of farmers to the diversity of crops that feed the world;
 - establishing a global system to provide farmers, plant breeders and scientists with access to plant genetic materials;
 - ensuring that recipients share benefits they derive from the use of these genetic materials with the countries where they have been originated.

Membership

- Under Article 27, Treaty is open for accession:
 - all Members of FAO
 - Non-FAO States that are Members of UN or any specialized agencies or IAEA
- Treaty entered into force on **29 June 2004**
- Caribbean situation
 - CP: Cuba, Jamaica, St. Lucia, Trinidad and Tobago
 - Signatories: Haiti, Dominican Republic

Benefits of Membership

- Thru' the Treaty, countries agree to establish efficient, effective & transparent Multilateral System to facilitate access to PGRFA, and to share benefits arising out of their use in a fair and equitable way
 - "Standard Material Transfer Agreement"
- Capacity building
- Global Information System on PGRFA

Benefit-sharing Fund

- Financial support to prioritized projects:
 - Info exchange, technology transfer, capacity-building Treaty implementation
 - Managing and conserving PGRFA on-farm; and
 - Sustainable use of PGRFA
- Eligibility:
 - GO or NGO, including genebanks and research institutions, farmers, farmers' organizations, regional and international organizations based in a developing country
 - Secretariat provides List of Contracting Parties eligible to apply for support for each round of the project cycle

Benefit-sharing Fund Projects

- Thematic focus of recent call for proposals of Benefit-sharing Fund: *Crop adaptation to climate change*
- Second portfolio of projects (started operation 2012):
 - Seven projects to prepare Strategic Action Plans (covering areas of on-farm conservation and management of PGRFA, in situ conservation, plant breeding and dissemination of seed and planting materials)
 - One project managed from Brazil has Cuba, Haiti as target countries (Through Action Aid International): *“PR-26-2010, Shared management and use of (agro)biodiversity by indigenous and traditional communities for food security and to reduce climate risks”* (12 mths, approx US\$ 400.000)

Window 1 Project Proposals approved for funding by the Benefit-sharing Fund

Project Proposal ID	Project Title	Funds requested (US\$)	Targeted country or countries	Country of Submission
PR-246-2010	Community based Biodiversity Management for Climate Change Resilience (in short, CBM for Resilience Project).	400,000	Bangladesh ,Benin, Brazil, Ecuador, India, Guatemala, Malawi, Nepal, Nicaragua, Zambia, Zimbabwe	Nepal
PR-292-2010	Strategic Partnership with Farmer Innovators for Adaptation and Management of Plant Genetic Resources to Climate Change.	400,000	Bhutan, Cambodia, Lao PDR, the Philippines, Vietnam	Philippines
PR-325-2010	Development of A Strategy for Building the Resilience of Pastoral Communities to Climate Change in Two Ecosystems of Sudan.	320,000	Sudan	Sudan
PR-26-2010	Shared management and use of (agro)biodiversity by indigenous and the traditional communities for food security and to reduce climate risks.	398,227	Brazil with partner applicants in: Costa Rica, Nicaragua, Guatemala, Cuba, Haiti e Mozambique	Brazil
PR-59-2010	Development of a National Strategic Action Plan for the Food Crop Genetic Resources Management to Adapt to Climate Change in the Democratic People’s Republic of Korea.	360,000	Democratic People's Republic of Korea	Democratic People's Republic of Korea
PR-50-2010	Participatory and science-based formulation of a Strategic Action Plan to strengthen the conservation of plant genetic resources and their enhanced use in adapting to climate change in Mesoamerica.	400,000	Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Mexico	Costa Rica
PR-355-2010	Promotion de la reconnaissance des systèmes ingénieux du patrimoine agricole mondial (SIPAM).	200,000	Tunisia	Tunisia

Recent activities of PGRFA Secretariat

- Multilateral System of International Treaty and use of Standard Material Transfer Agreement (SMTA):
 - PGRFA has recently launched online information system that facilitates the use of the SMTA (Easy-SMTA) - <https://mls.planttreaty.org>
 - Developed brochures, User Manual & several presentations that deal with comments

Excerpt: Secretariat's communication

- “During this biennium, the Treaty Secretariat is committed to increasing capacity building and to raising awareness in order to support countries in the ratification process, in particular in the Caribbean and in the South West Pacific Regions. We firmly believe that the Treaty is an international instrument that can bring enormous direct benefits on food security and hunger eradication to countries in the Caribbean Region”

Excerpt: Secretariat's communication

- “...ratification of the Treaty by many Caribbean countries will allow them to become direct beneficiaries of:
 - facilitated access to global pool of PGRFA under the Multilateral System of the Treaty;
 - its Benefit-sharing Fund;
 - its capacity-building support programme and will enable them to participate in the multilateral policy fora of the Treaty's Governing Body, where decisions regarding these important PGR are made”

**Joint FAO/OECD Workshop - *Building
resilience for adaptation to climate
change in the agriculture sector***

23-24 April 2012, at FAO HQ

Joint FAO/OECD Workshop

- Follow up to 2010 Workshop: **Agriculture and adaptation to climate change** that concluded:
 - climate change brings new uncertainties,
 - adds new risks and changes already existing risks
 - one of the most effective ways for agriculture to adapt to climate change could be *to increase its resilience*

http://www.fao.org/agriculture/crops/news-events-bulletins/detail/en/item/134976/icode/?no_cache=1

Areas of focus of Workshop (1 of 2)

- Setting the Risks
 - overview of main issues and definitions
 - two main long-term goals for agriculture: (i) achieve food security; (ii) adapt to climate change
- Types of risks and their management
 - biophysical and economic risks affecting agricultural production and households

Areas of focus of Workshop (2 of 2)

- Case studies
 - Finnish: no trade-off in land use diversity & resource use efficiency
 - Mediterranean: Climate change ‘hotspot’
 - Sahel: crop-livestock systems have numerous other issues
 - Asia – population increases not matched by production increases
- Tools, policies and institutions
 - new policies and policy frameworks needed to address adaptation to CC

Conclusions

- Huge uncertainties on the way CC will directly and indirectly impact agricultural and food systems, and related vulnerabilities
- Building resilience now is central to being prepared for future changes
- Notion of resilience enables examining together various domains – biophysical (ecosystems), economic, social and institutional -- and scales of operations
- Allows interactions between domains and between scales to be analyzed

General ways to increase resilience

- Identify & monitor potential risks & vulnerabilities
- Early action is needed, especially to avoid cumulative and long term effects
- Increase adaptive capacity of farmers and systems both to recover from shocks and to be prepared for changes.
- Take into account interactions between domains and scales in order to reduce the transmission of shocks between them

Thank you!

