Pacific experience on crop diversity initiatives to address climate variability and change: the role of the Centre for Pacific Crops and Trees

Taylor, M., CARDI CTA Climate Change PGR Policy Workshop, Antigua, 13-15 October 2012
THE AIM OF THE PRESENTATION

• Introduce the Pacific and the challenges faced by the region
• Pacific crop diversity
• The regional approach to PGRFA conservation and use
• Sets the stage for later presentation on “climate-ready” collection
Pacific Community
MANAGING CHALLENGES

- Small populations and economies
- Remoteness from international markets
- High cost of transportation
- Income volatility
- Vulnerability to exogenous shocks

BUT NOW:

- Impact of climate change
- Declining health and nutrition and rising incidence of NCDs
- Wholesale departure of youth from agriculture
Breadfruit: primary centre of diversity
Unique banana diversity

Pacific bananas
• Micronesia and the atolls: primary centres of diversity
Edible Aroids

Primary centre of diversity for taro: distinct genepool from that in SE Asia
Occurs throughout the Pacific; several hundred traditional varieties known.
ABELMOSCHUS MANIHOT (BELE)

Significant diversity found in Melanesia
REGIONAL APPROACH TO AGROBIO DIVERSITY

• Significant diversity exists in the region, especially Melanesia; declines from west to east

• **How do we look after this diversity and maximize its use**

• Supported by UNDP-FAO attempts made in the late eighties by countries to conserve PGRFA in field genebanks; significant losses occurred

• Concern was expressed at various meetings regarding these losses

• 1993: taro leaf blight arrived in Samoa
TARO LEAF BLIGHT

- Wiped out the most important food crop in Samoa
- Export market valued at US$3,990,000
- Main variety grown 100% susceptible; other Samoan varieties equally susceptible
- Taro could not be grown
- What did Samoa do?
REGIONAL APPROACH TO AGROBIO DIVERSITY

• Importance of diversity realized; some success producing taro with different varieties
• 1996: Pacific Ministers of Agriculture: policies to conserve, protect and utilize PGR at the national and regional level.

WHAT COULD BE DONE AT THE REGIONAL LEVEL?
• Need for commitment by a regional agency: SPC
• Need for donor support: AusAID
• Regional genebank: The Centre for Pacific Crops and Trees (CePaCT)
• Pacific PGR network: PAPGREN
THE REGIONAL GENE BANK

1999 RGC

2009 CEPACT

Strengthening conservation and utilization of Pacific diversity
CePaCT: regional hub supported by PAPGREN
FOCUS ON YAMS

- *D alata*: 186 accessions (centre of diversity in Melanesia)
- *D rotundata* (33);
- *D. esculenta* (34);
- *D. nummelaria* (2);
- *D. pentaphylla* (1),
- *D. trifida* (1),
- *D. transversa* (1)
- *D. bulbifera* (8)
OTHER CROPS

- 236 sweet potato accessions
- 24 accessions of cassava
- 13 accessions of breadfruit
- 171 accessions of banana
- 22 accessions of kava

Most accessions are Pacific; some from IARCs
PACIFIC PGR NETWORK - PAPGREN

meetings

awareness

information

training
Policy Issues Relating to Plant Genetic Resources in the Pacific
A Guide for Researchers and Policymakers

Directory of Plant Genetic Resources Collections in the Pacific Island Countries and Territories

Let's Go Local
Looking After Plant Diversity and Our Health

Kastom Gaden is a non-governmental organisation that was established in the Solomon Islands in 1990. The work of the organisation has spread throughout the country and beyond. Kastom Gaden continues to work on the traditional issues within the Solomon - persisting and promoting traditional food gathering and its sustenance and eventual effectiveness.

This documentary looks at some of the work Kastom Gaden is doing and the benefits of the organisation and how it has grown and developed in the last 30 years. "From Trees" is one of the founding members and is a great example of how to work and vision and offering some solutions on how tackle the global issue of food security.

Kastom Gaden is an important organisation in the region and the need of its work speaks for itself. Farmers and others involved in the work of Kastom Gaden have open the eyes and personal benefits of following and adhering to farming methods taught by Kastom Gaden. In growing their own food, they have found them in more than enough to feed their families but also sold to the market to generate income.

This documentary provides us with an insight into the wider role of the amazing organisation and the good work it is carrying out in the Solomon Islands.
THE VANUATU ISLAND CABBAGE PROJECT
March 2010-September 2010

Final report by Marine BRUERRE
International Centre of Advanced Agricultural Science and Rural Management
Montpellier SupAgro, France
REGIONAL STRATEGY: BREADFRUIT

• Aim to have a regional/sub-regional collections
• Supporting national collections (Fiji, French Polynesia, Samoa, Vanuatu)
• Nutritional analysis and awareness, Marshall Islands
• Linking to markets (Fiji) – includes micropropagation research
REGIONAL STRATEGY: BANANAS

• Unique: fei, maoli, popoulu
• Regional collections
• Capacity building
• Nutritional analysis; S. Islands
• Awareness/promotion
BEING PART OF THE GLOBAL SYSTEM

• June 2009 at the 3rd Session of the Governing Body to the Treaty, the region placed its Annex 1 collections held by CePaCT into the MLS of the Treaty
• Countries happy to use SMTA
• Support from the Global Crop Diversity Trust
• INEA: 6,526 taro plants distributed to 15 countries
• Haiti – not an INEA country but taro sent; 100% acclimatization success

Accessing and sharing diversity
IF WE DON’T USE IT WE WILL LOSE IT!

• Is the material safe to distribute?
  – Virus testing
  – On average, 5000 plants pa

• Are countries aware of the diversity CePaCT holds?
  – PAPGREN
  – Newsletters, website, meetings

• Where can diversity be of benefit?
  – CC, nutrition, markets
  – Have to show just how and where it can be used;
  – Important for sustainability

• Information/documentation
  – Posters, factsheets, articles
  – Case studies, especially CBA
USING DIVERSITY TO TARGET A DISEASE
ADDRESSING THE NUTRITIONAL CHALLENGES (AND INCREASING RESILIENCE?)

- Alarming increase in diabetes, obesity etc; 75% of deaths from lifestyle related diseases
- Spreading a message: Go Local
- Promoting orange-fleshed varieties of crops
- Integrating with nutrition-focused projects
USING CROP DIVERSITY TO MANAGE CLIMATE VARIABILITY
Thank you for your attention