CTA-Wageningen UR ACP/EU Think Tank Pre-Conference Event

Partnerships for Research, Capacity Building, Innovation and Foresighting:
Managing Water for Agriculture and Food in ACP Countries

28 October 2012
Punta del Este, Uruguay

In collaboration with






Green Growth, Climate change, Food Security and Water in Pacific Island Countries.

Viliamu. Iese (Research Fellow): Future Climate Change Leaders Project, Pacific Centre for Environment and Sustainable Development, USP

CTA/WAGENINGEN UR GCARD2 PRE-CONFERENCE MEETING PROGRAMME - 28 OCTOBER, 2012

VENUE: RIO DE JANEIRO A, CONRAD PUNTA DEL ESTE RESORT & CASINO

The greatest beauty is organic wholeness, the wholeness of life and things, the divine beauty of the universe. Love that, not man apart from that….

The Answer.. Robinson Jeffers

Outline

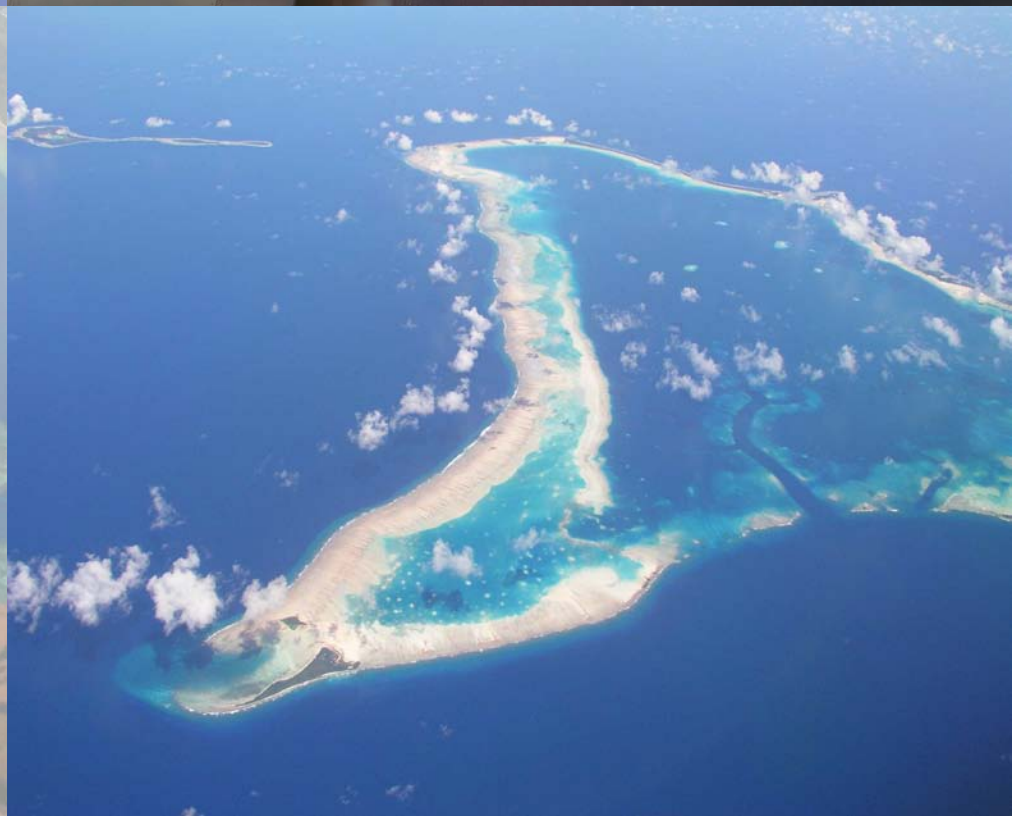
- Pacific Island Countries Realities
- Climate change and food security and water
- USP Research and Capacity Building work to build resilience of our communities

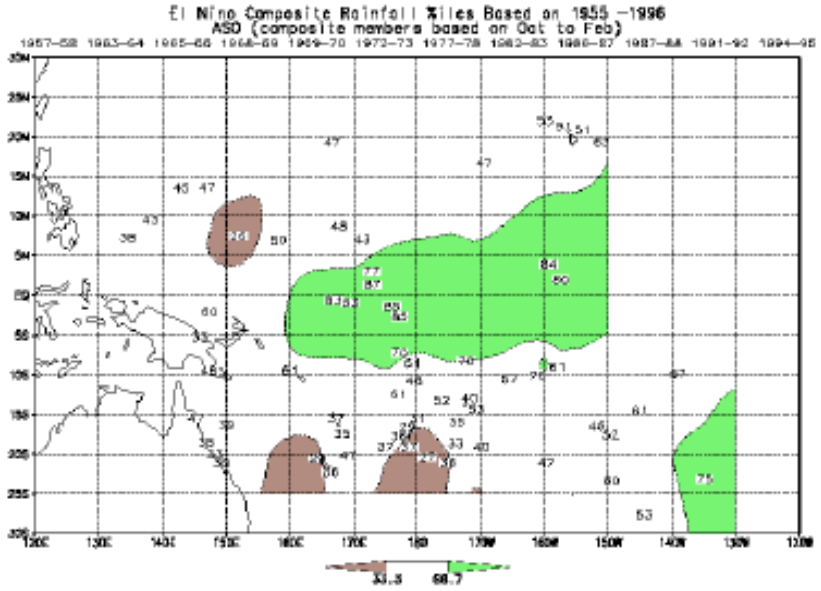


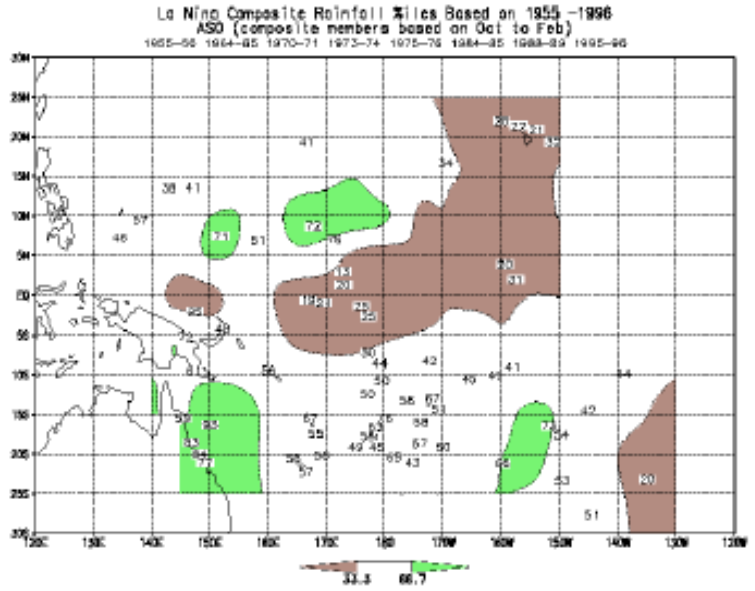




Oceania
Northern Mariana Islands (U.S.)
Guam (U.S.)
Marshall Islands
Hawaii (U.S.)
20° N
PACIFIC OCEAN
Date Line
Palau
Federated States of Micronesia
ASIA
Equator 0°
Nauru
Kiribati
Papua New Guinea
Solomon Islands
Banda Sea
Arafura Sea
Timor Sea
Tuvalu
Tokelau
Samoa
American Samoa
Wall. & Fut.
Fiji
Cook Is. (N.Z.)
French Polynesia (France)
Coral Sea
Vanuatu
New Caledonia (France)
Niue (N.Z.)
Tonga
20° S
Trópico de Capricornio
Australia
Pitcairn I. (U.K.)
Norfolk I. (Aust.)
Great Australian Bight
Tasman Sea
Date Line
0
1,500 Miles
0
1,500 Kilometers
New Zealand
40° S
Tasmania
N
120° E
140° E
160° E
180°

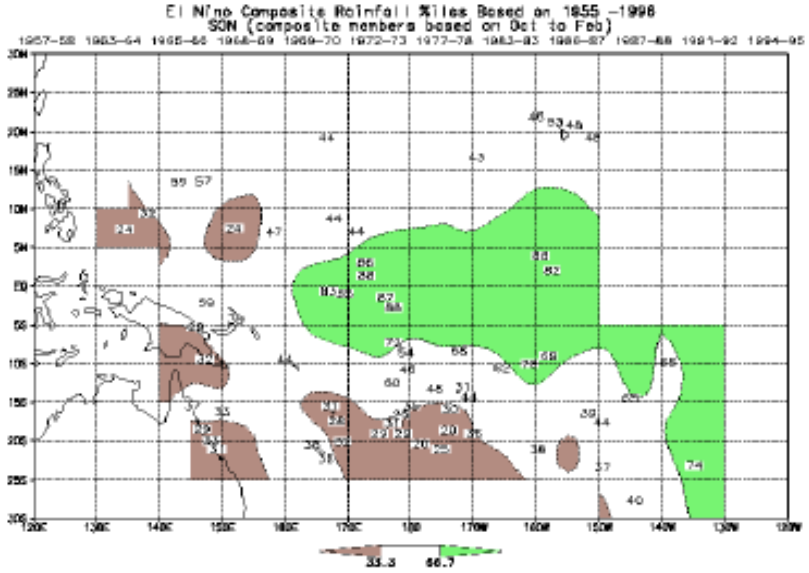


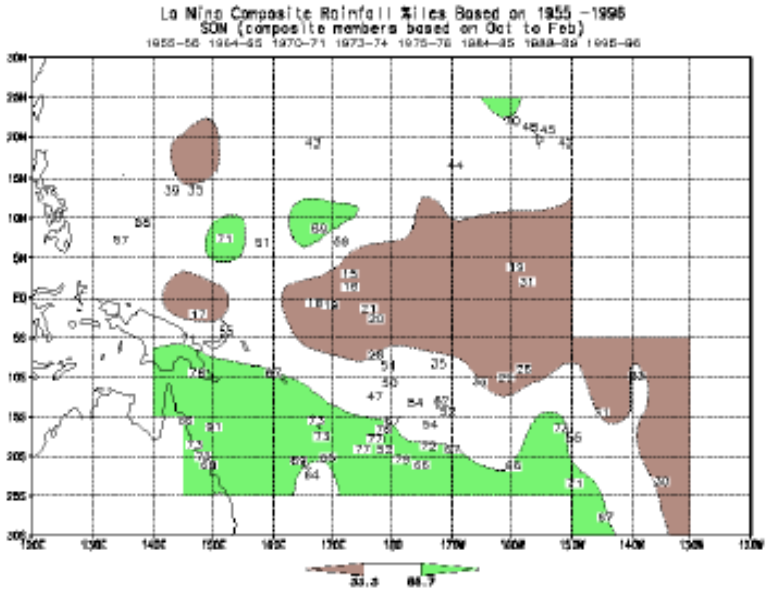




El Niño

La Niña

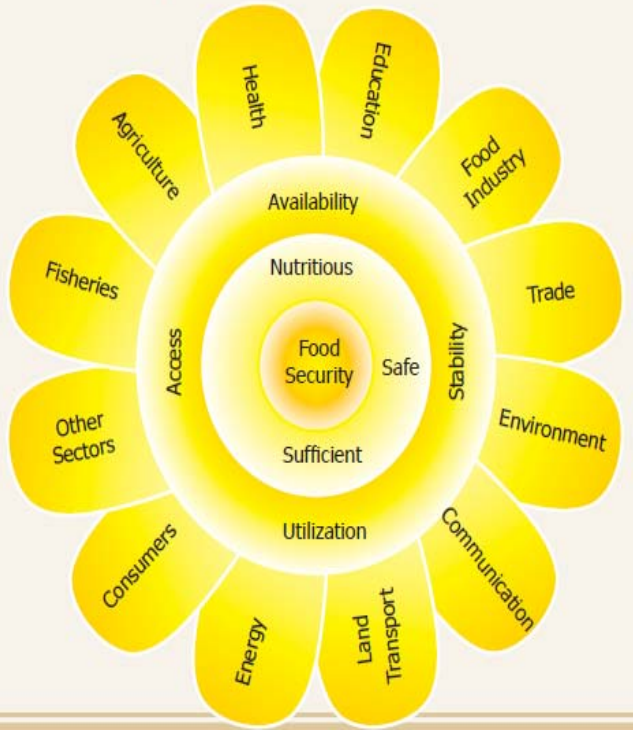




Food Security

- Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (World Food Summit, 2009)
- **Food Security – multi-dimensional**
- **Challenging but not impossible!**

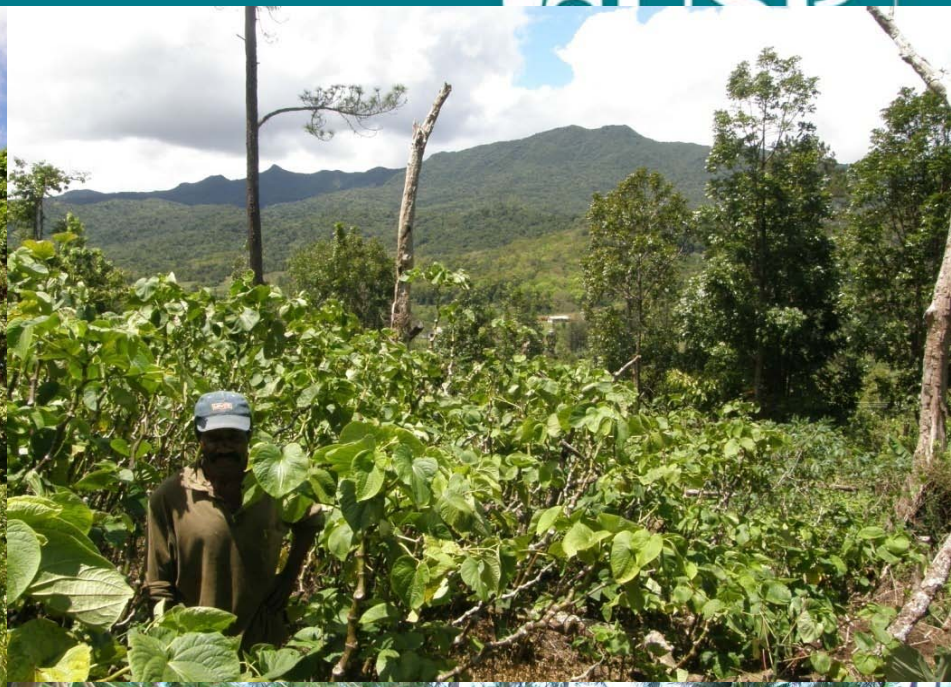
Figure 1: Conceptual model of food security in the Pacific








Agroecosystem Diversity



Resilience of Agricultural/ Fisheries systems

Ecosystem services


Everyday
Crackers

!!Reflections!!

- Much have been lost: techniques, genetic material, and the social and cultural milieu within which production was organized. Much has also changed: material expectations have risen above mere subsistence; many Pacific Islanders are no longer primarily producers of food for themselves and their households (Overton 1999).






Challenges!

Our sources of foods are very vulnerable to physical, environmental, social and economic changes

- Access, Stability, Availability, Utilization






Climate change

- Increase frequency and intensity of extreme events (cyclones, floods, landslides, droughts)
- Change in occurrence and distribution of hazards and climatic events (away from “normal”)
- Variations of ENSO occurrence, intensity
- Increase temperature and C02
- Salt inundation/spray (rising of sea level)
- Decrease of annual rainfall (2030, 2055, 2090) **BUT!!**
  - Pacific Climate Change Science Project

Agriculture is small scale (1-10acres) and mainly rain-fed

- **Atolls – no rivers**
  - **very inconsistent water supply**
  - **Desalination machines**
  - **Water tanks**
- **Raised atolls – no rivers**
  - **Same as atolls**
- **High islands – rivers**
  - **Have mix islands**
- **Too much or Too less water**






Capacity Building
(USP-EUGCCA, AUSAID FCLP)

THE UNIVERSITY OF THE SOUTH PACIFIC

- Formal – Postgraduate Diploma, MSc, Phd Climate change (Modelling, Food Security, Water, Governance)
  - Scholarships – plan for DRM program
- Informal - Community Training on Climate change issues and building resilience (Polynesia, Melanesia, Micronesia) – 15 countries
  - Training of trainers
- Exchange visits – Centre of Excellence (students and staffs)
- Networking – Regional and International Institutions






USP Climate change Research

- USP Interdisciplinary Research Cluster

  Cluster 6 – Climate change

  – Food Security – Compile a review of Food Security and Climate change research that has been done in PICs (USP member countries)

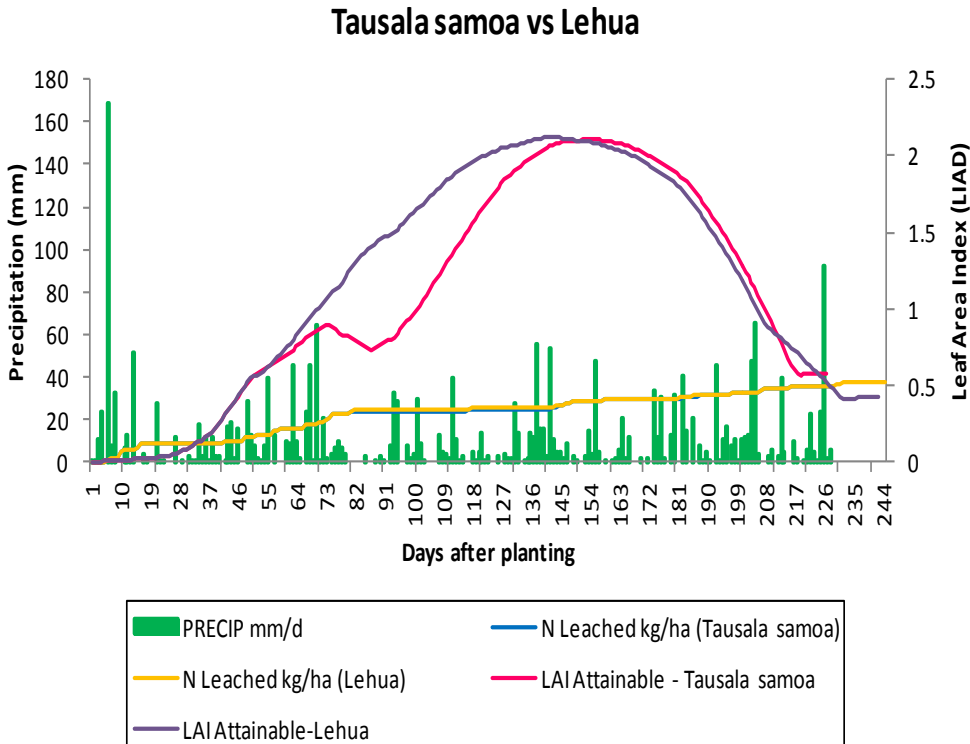
  – Vulnerability Analysis of Food Security Systems in Pacific communities (Fiji, Solomon Islands, Tonga, Kiribati)

Graduate Research

- Assessing the impacts of climate change on cultivated *pulaka (Cyrtosperma chamissonis)* on Nui Island in Tuvalu.
- Climate Change and Communities. Vulnerability and Impacts on Food crops - A Case Study of Belona Community in Solomon Islands.
- Crop resilience selection, coral resilience research, aquaculture based research
- Water modelling, Water balance modelling

Crop Modelling

- **Decision support system for agro-technology transfer (DSSAT)**
- **MSc Students are using DSSAT models (potato, taro, cassava, rice) – also simulating the impacts of Climate Change Projection (CSIRO)**
- **Interest to run both DSSAT and APSIM models for Climate change adaptation activities**



Climate change adaptation

THE UNIVERSITY OF THE SOUTH PACIFIC

- 15 Pacific Island Countries – including Timor Leste (3 communities or more)

- Focus is on Food and Water Security, health and sanitation, coastal and erosion protection






Global and Regional Frameworks

USP THE UNIVERSITY OF THE SOUTH PACIFIC

Policy Drivers

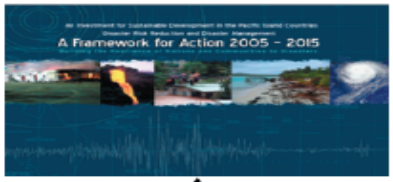
Hyogo Framework for Action, 2005

UNFCCC

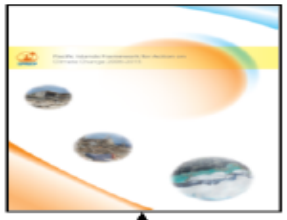
Framework Climate Change Convention, 1992

WMO

WMO Global Strategy + RA V Strategic Plan



Pacific DRR & DM Framework for Action, 2005



Pacific Islands Framework for Action on Climate Change, 2005

PMS

Pacific Meteorology Strategy 2012 - 2015

- Implementing adaptation measures
- Improve understanding of climate change
- Knowledge, information, public awareness and education
- Understanding root causes of vulnerabilities and elements at risk
- Preparedness, response and recovery
- Early warning systems
- Reduction of underlying risk factors
- Sustained weather, climate, and early warning services

Conclusion

- **PICs are very vulnerable to adverse impacts of Climate change and climate variability**
- **We need to establish, strengthen our collaboration (exchange schemes) – networking, technology transfer, capacity building**
- **If there is a best time to start it is NOW!!**
- **We make it a continuous activity, and trigger the lessons learnt, science, tools from the Centre of Excellence to Policy makers, farmers, youth, communities**
- **We should basically be remembered by not only the publications we have but the lives we help to improve disregard of the circumstances – uncertainties**
- **There is no one solution – “holistic approach”**

Together we can: Vinaka and thank you all!

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