Presentation from the Anglican Church of Melanesia (ACOM) to the Anglican Alliance Pacific Conference, Solomon Islands 5-11 September 2011.
THE ANGLICAN CHURCH OF MELANESIA
MISSION STATEMENT
“The purpose of the Church of Melanesia is to be a faithful part of Christ's body through the exercising of baptismal ministries, spreading of the Good News of God's love in Jesus Christ, being like Christ in thought, word and action, worshipping God in spirit and truth and demonstrating God's love in responding to human needs in loving service”
Aim of presentation

To share with you our work with regard to the phenomenon of climate change and its impacts upon atoll communities in the Anglican Church of Melanesia, and the Pacific Islands.

Outline
- Background
- Issues Affecting Atoll Communities
- Adapting to Climate Change Effects
  - Ontong Java Atoll Food and Water Security Project
- Conclusion
BACKGROUND
Pacific Conference of Churches:
• 27 member churches
• 11 National Councils of Churches
• in 14 PICs, 2 French Territories & FSM
• Representing approx 65% of the region’s total population of 7.2 million people.
The South Pacific

- The Anglican Church of Melanesia (ACOM) is part of the Blue Continent littered with small islands.
- It covers the nations of Vanuatu, Solomon Islands, and New Caledonia.

- Solomon Islands Population: 538,032 (July 2005 est.)
- Vanuatu Population: 205,754 (July 2005 est.)
- New Caledonia
Areas of Immediate Impact

Main Anglican areas are shown in red.

Ontong Java, the Torres Islands, and the Reef Islands are the most immediately affected area, but other parts of the Solomon Islands and Vanuatu are also threatened.
The Church's growing concern for the environmental issues makes it part of its mission towards God’s people and Creation.
Community calls for attention has prompted the ACOM to respond to the people of Ontong Java in the face of encroaching impacts of climate change.
The most vulnerable islands are the Atolls of Ontong Java, Sikaiana and the artificial islands of Malaita and Reef Islands of Temotu of the Dioceses of Malaita and Temotu (Solomon Islands) and Loh Island of the Diocese of Banks and Torres (Vanuatu).
Exponential effects

"We are basically looking now at a future climate that's beyond anything we've considered seriously in climate model simulations," Christopher Field, founding director of the Carnegie Institution's Department of Global Ecology at Stanford University, said at the annual meeting of the American Association for the Advancement of Science (Feb 15\textsuperscript{th} 2009).

“Unexpectedly large amounts of carbon dioxide are being released into the atmosphere as the result of "feedback loops" that are speeding up natural processes".
ISSUES
1. Deteriorating coastal environments
   a cemetery being eroded away.

CAUSE
- Sea level rise
- Coastal inundation and erosion

EFFECT
- Salt water intrusion
- Contaminated wells
- Disruption of settlements
- Low food production
2. Depletion of Coastal Zone and Marine Ecosystems

A coastline being damaged

**CAUSES**
- Sea level rise
- Coastal erosion and inundation
- Over harvest of marine resources
- Coral bleaching

**EFFECTS**
- Land along shoreline eroded away
- Village settlements move further inland
Photos by Dr Fei Tevi (PCC)
3. Destruction of Artificial Islands

Lagoon Islands of Malaita
(from Internet)
4. Eroded Human Settlements

Houses collapsing on Ontong Java as water levels rise causing sea erosion

CAUSES
- sea level rise and intense storm surges affect two Ontong Java communities.

EFFECTS
- Parts of villages eroded away
- People finding space for building houses
- People favour relocation
5. Flooded human settlements

CAUSE
King Tides

EFFECT
Flooded settlements
Displacement

Several reports such as The Ontong Java High Swells Assessment Report (2008), The Solomon Islands NAPA Report (2008), ACOM Food Security Report (2010), The Vulnerability and Adaptation Assessment (2011), and other report of earlier periods, have all implicated the adverse effects of the impacts of climate change.
6. Coastal Flooding affect village

CAUSE
- King Tides

EFFECTS
- Coastal inundation and erosion
- Salt infiltration in Garden Lands
- Flooding of Artificial Islands
- Loss of houses and other properties
7. Flooding of Rivers

**CAUSE**
- Cyclones
- Heavy rainfall

**EFFECTS**
- Loss of lives
- Loss of properties
- Loss of crops
8. Cyclone Damages often claim lives and properties

a damaged church building in Tikopia

CAUSES
- Increased frequency of cyclones
- Increased intensity of cyclones

EFFECTS
- Loss of lives
- Loss of properties
9. Contaminated water for People, Livestock and Agriculture

a well in Ontong Java contaminated with salt

**CAUSES**
- Salt water intrusion caused by sea level rise, storm surges, and coastal inundation

**EFFECTS**
- Water wells contaminated with salt
- Swamp taro creeks affected by salt
- Swamps lack mulching materials
- Soil has become infertile
- Swamp taro crops not healthy
- Not enough water for people, livestock and agriculture
10. Well on Loh Island in the Torres Islands of Vanuatu contaminated by Salt Water
Coconut plantation destroyed.

**CAUSE**
Sea level rise.

**EFFECT**
Coconut plantation killed.

**CAUSES**
- Depleted forest - scarce fuel wood
- Over harvested marine resource
- Lack of financial services

**EFFECTS**
- People utilizes solar energy, very scarce firewood
- Lucrative income from Beche-der-mer, trochus shells, shark fin
- Income not managed well
- Poor shipping services
- No banking services
• **Health risks** - such as an increase in vector and water borne diseases caused by warmer temperatures.
12. Low agriculture production
Salt water infiltration affect plant growth

CAUSES
- Salt water intrusion
- Coastal erosion
- Lack of planting materials
- Incidence of pests and diseases
- Nutrient deficiency

EFFECTS
- Rotting of swamp taro
- Infertile soil
- Decrease crop yields
- Contaminated water in wells
- Lack of water for agriculture
- Insecure food security
ADDRESSING FOOD SECURITY
FOOD SECURITY ASSESSMENT (2010)

Problem

Root Causes
- Salt water intrusion and infertile soil
- Low agriculture production
- Inadequate income sources
- Difficult to save income
- Unreliable shipping/communication
- High cost of food

Core problem
- Food shortage
- Vulnerable to nutritional diseases
- Migrating
- Import food
- Immature harvesting of swamp taro crops
- Water wells contaminated with salt

Effects
- Food shortage
- Vulnerable to nutritional diseases
- Migrating
- Import food
- Immature harvesting of swamp taro crops
- Water wells contaminated with salt

Solution

Strategies
- Promote agro forestry gardening
- Select salt tolerant crops
- Develop appropriate gardening technologies
- Access to good source of planting materials
- Acquire literacy on finance and management
- Improve shipping and communication
- Reduced food costs
- Good source of fish
- Provide water catchment and storage

Core Solution
- Improved agriculture systems
- Increased crop yields and total production
- Sufficient water
- People are healthy

Outcome
- Not Hungry
Ontong Java Atoll
Food and Water Security Project
Funded by
ACOM, Episcopal Relief and Development (ERD)
AND PARTNERS
Negotiation
- Consultations were made with the House of Chiefs
- They gave approval to negotiate with individual landowners for the agriculture demonstration plots.

They agreed so 4 plots were secured:
- Plot 1 Keaha Land 60mx60m (0.36 ha)
- Plot 2 Saako Land 60mx70m (0.42ha)
- Plot 3 Lungukai’a Land 40mx55m (0.22ha)
- Plot 4 Vaenikongou Land 40mx60m (0.24ha)

Preparation
- The House of Chiefs moved that the community provide labour for clearing. Four community groups were assigned to work.
- Land cleared and windrowed
- Plots were designed for Atoll Permaculture
- Structures were designed according to specific needs of crops
Four Lead Farmers were recruited and trained on:

- Effects of climate change
- Effects of salt water intrusion
- Salt resistant crops
- Need to diversify crops
- Need to improve water catchment and harvesting
- Legume plants
- Green manuring
- Composting and mulching
- New appropriate technologies
- Agro forestry
- Atoll Permaculture
Nursery Established

Nursery established to raise seedlings for Luaniua and Pelau.
Planting Materials

Planting materials are collected from Temotu Diocese and raised in the nursery in Honiara before shipping them to Ontong Java.
The Mission Secretary, Rev. Patteson Worek, helping out in the Nursery.
Crop seedlings being shipped to Ontong Java by the Church’s flagship M v. Southern Cross.
Off loading seedlings at Ontong Java
The community helping to unload the seedlings
Crop Plantings and Progress

- Currently plantings is carried out at Luaniua.
  - 16 species of crops are identified and are being incorporated in the Atoll Permaculture design. Some are good salt tolerant while others need raised beds and heavy mulching. They include tree, root, fruit and vegetable crops.

- Several legume trees and vines are being tried:
  - Lusina (Lucaena leucocephala) - successful
  - Gliricidia (Gliricidia sepium) - not good.
  - Siratro - not good
  - Centro (Centrosema pubescence) - not good
Newly planted taro plants which can grow in salinated soil
Healthy taro plants in one of the plots, notice heavy mulching in the raised bed.
Taro suckers germinating around mother plants
A healthy stand of stem taro in one of the plots. A salt tolerant taro variety quite suited to the sandy conditions. There is still a lot of space to fill in.
A farmer quite satisfied with his healthy crop of stem taro. It should be ready in eight months. When he harvests he would have plenty of planting seeds and suckers.
Challenges

Even though farmers are content with what they are doing they are not without problems:

- Soil nutrient deficiency
- Lack of water for agriculture
- Need for planting materials
- Need for salt tolerant legume cover crop
- Need for forest species to develop woodlots to enhance biodiversity
- Drought and dry period
A lead farmer is happy that his taro and yams have survived this years long dry period.
There are seven tree crop species, five root crop species (five main varieties of taro), and eight vegetable crop species.

- Local Avocado (*Burkea obovata*)
- Polynesian Chestnut (*Inocarpus fagiferus*)
- Breadfruit (*Artocarpus altilis*)
- Alite nut (*Terminalia catappa L.*)

Atoll Permaculture: Tree crops component is part of the tree structure of the Atoll Permaculture.
Some tangible benefits are being realized

Lusina (*Lucaena leucocephala*)

Banana (*Musa sapientum*)

Pumpkin (*Cucurbita pepo*)

Pawpaw (*Carica papaya*)
The People Welcoming the Bishop of the Diocese of Malaita

Women

Children

Men

Youth
WAY FORWARD
Advoication and education on climate change variability and their impacts on the people, livelihood, and the environment.

Improve water harvesting by supplying water tanks for the communities to address water issue. Coordinated in manner like 3 families per 1000 gallon tank.

Build on the existing foundation set up by Anglican Church of Melanesia climate change Food and Water Security Project

Disaster risk reduction planning

Disaster response planning

Disaster relief supplies
Medium Term strategies

- Training of Communities on C B D R Reduction
  - C. B.D. R. R. Training
  - Increasing Food Production

- Increase Food Production
  - Develop new sustainable farming systems
  - Use salt tolerant crops

- Capacity building for agriculture and economic development
  - Agriculture training
  - Financial literacy training
- Start work on long term planning and implementation
  - Education and Training
  - ‘Satellite Farming Centres’
  - Relocation

- CONTINUED DIALOGUE WITH OTHERS

- Planting trees especially mangroves to reclaim lost lands, prevent erosion, nourish the land.
- Use of appropriate technology e.g. solar
Policy Advocacy & Leadership. PCC

STRATEGIES

- Resolutions of the 9th Assembly of the Pacific Conference of Churches
- Alignment with position with the Association of Small Island States (AOSIS)
- Alignment of position with the Pacific Islands Forum Action Plan on Climate Change (PIFACC)
- Appeal to Anglican Alliance to advocate on CC issues and impacts.
Community Engagement (PCC RESOLUTIONS)

- Promotion of Green Churches....Diocese of Polynesia
- Action Plans on Climate Change of the various Churches (KPC, UCPNG....)
- Resettling communities (CCPNG, UCSI, PCV....)
- Addressing coastal erosion (MCF&R, EPM, FWCT, TNCC, UCSI, KPC, EKT, UCCMI...)
- Cooperation with national gov'ts. (CICC, KPC, PCV etc...)
- Christian Conservation (MCF&R (Viwa)
- Replanting scheme for mangroves (KPC)
- Carbon footprint scheme (KPC)
Current model in crisis

- CC effects highlight the inconsistencies of current economic models
  - Scarcity of resources and limited availability
  - Unabated consumerism and exploitation of natural resources
  - Hard driven competition for scarcity of resources and “sustained” growth
  - Individualistic outlook on life
- Looking for Science and technology solutions to maintain a lifestyle
ADDED VALUE OF THE ANGLICAN CONTRIBUTION

- Focus on adaptation and mitigation efforts of Anglican community in the Pacific
  - COM communities in Solomon Islands, Vanuatu and New Caledonia
  - Diocese of Polynesia efforts in Samoa, Tonga and Fiji
- Support for resettlement dialogue process
- Support for Pacific churches disaster management concept.
  - Concept design: collaboration effort CWS USA & PCC
  - Potential wider reach
- Prophetic nature of the church to find a new way of life
Towards a development & sustainable model....

- What type of economic and development model will enable us to be good stewards of God’s creation??
  - McKibbon: earth economy
  - Sally McFague: ecological economics
  - Island of Hope: spirituality and the environment
    - Theology of vanua & the seas
    - Holistic approach to life and community
OUR CALL TO THE ANGLICAN ALLIANCE

- Let us embrace our Mutual Vulnerability
- Let us embrace our Accountability to Each Other
- Make real our commitment to the poor and the vulnerable of our communities

ADAPTED FROM PCC.
Questions

Question 1
What are the other components of a social and development model that suit our approach to life as Christians, a group of believers?

Question 2
How can we best address the issue of climate change from our perspective as Christians?

Question 3
How can we help each-other to respond to this challenge in Q2.
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- Climate Change Committee ACOM

REV. PATTESON WOREK
MR GEORGE KIRIAU
MR JASPER BONIE
REV JOHN COLERIDGE SOVAN
“Deeper still, Oceania is us, We are the Sea We are the Ocean…”
Epeli Hauofa

THANK YOU AND GOD BLESS US ALL