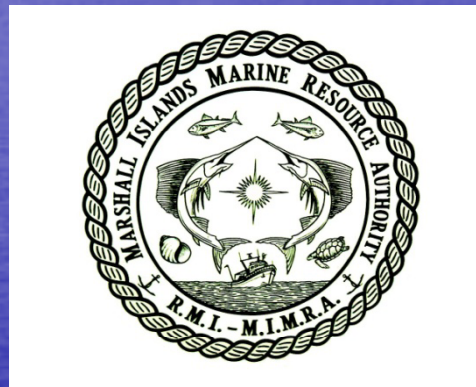


Climate Change Adaptation: A Collective Approach



Mainstreaming Climate Change in the Republic of the Marshall Islands



In partnership with

RMI Coastal Management Advisory Committee

Namdrik Community

US Agency for International Development & US State Department



Introduction & General Background



- 29 low-lying atolls & 5 individual islands;
- 2 million km² in the central Pacific Ocean;
- 1225 small islands & islets making up the Ratak (sunrise) and the Ralik (sunset) chains;
- Pop. Over 60,000



RMI: 2 chains of atolls in the middle of the Pacific





REPUBLIC OF THE MARSHALL ISLANDS



1,225 individual islands and islets make up the Ratak (Sunrise) chain in the east, and the Ralik (Sunset) chain in the west.



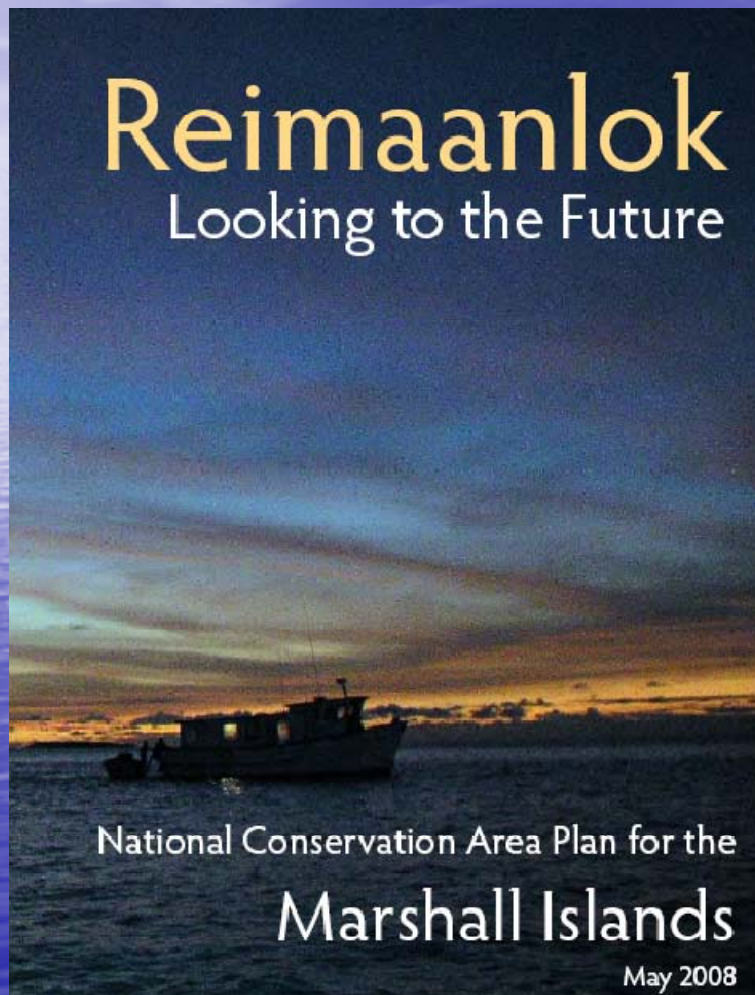
- To effectively conserve at least
- 30% of the near shore marine resources and 20% of the terrestrial resources across Micronesia by 2020

www.micronesiachallenge.org

Impacts to RMI

- Ocean acidification
- Increase in frequency of storm surges
- Longer frequency of droughts
- Negative effects to our marine resources
- Sea level rise
- Land degradation
- People, culture and our heritage

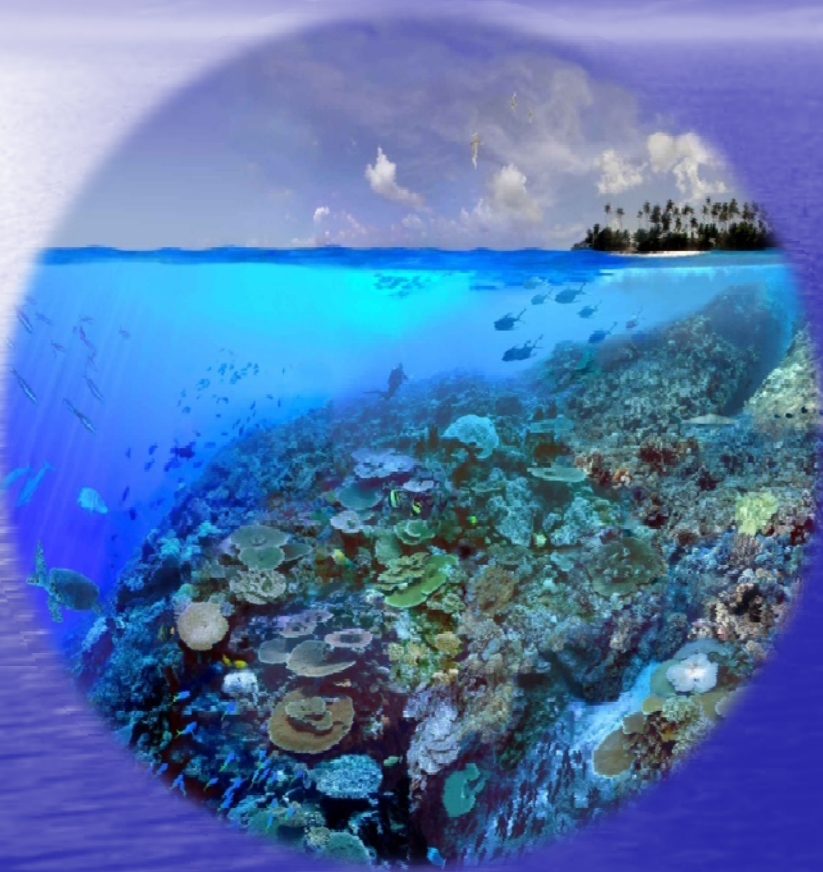
Community Based Process



- Designed as a technical tool to assist resource agencies facilitate resource management planning with local governments & traditional leaders through a consultation process;
- Identifies & recommends coarse, fine and species targets important for cultural purposes (turtles, mangroves), and for unique and special areas (spawning & aggregation sites)
- Created from lessons learnt from resource management planning in the RMI

Community Based Process

- Marshallese professionals working on conservation issues in RMI;
- Involved most relevant national government and non government agencies ;
- Unique as it combines both Traditional & community management with science;



“this plan ... develops the principles, process and guidelines for the design, establishment and management of conservation areas that are fully owned, led and endorsed by local communities based on their needs, values and cultural heritage”



- The ecosystems on each atoll are important to the communities who live on the atoll
- Conservation of ecosystems plays a vital role in climate change because they provide natural carbon sinks. Healthy ecosystems also enhance the resilience of islands to the impacts of climate change.
- Recognize the role of Traditional Leaders as caretakers and protectors of their people and their natural resources and the intimate connection between people, culture and natural resources; and
- Realize that modern efforts to sustain the “Micronesian Way of Life” and to ensure the health, prosperity and diverse cultures of our island people are unlikely to succeed if the ecosystem services on which island and human rely continue to be degraded.

Community based process – Climate Lens

- 'climate proofing' of the Reimaanlok to provide guidance on ecosystem-based adaptation
- placing the most vulnerable people, communities and ecosystems at the heart of national climate change strategies

Local knowledge: mapping of threats, identifying trends; capacity to cope; calendar of events

1	Initiation	A need to develop a community-based resource management plan is identified either at the local government level or at the national level.
2	Project Scoping and Setup	Establishment of a project workplan, a team of facilitators and identification of budget and resources.
3	Building Commitment	An initial visit is made by the national team to carry out education and awareness about the benefits of conservation and resource management, and to build trust with the community.
4	Collecting & Managing Information	Further visits focus on collection and documentation of local knowledge and use of resources, socio-economic information and baseline scientific information.
5	Developing the Management Plan	Several visits are made to the community to develop, draft and revise a detailed management plan.
6	Plan Sign-off	Achieve commitment to the plan through sign-off of management plan.
7	Monitoring and Reporting	Monitor achievement of the objectives – both biological and socio-economic. Adapt the management plan accordingly.
8	Review and Update	Ensure community has adequate support for ongoing management.

Existing Reimaanlok Process		Mainstreaming Opportunities
Activity	Suggested Tools/Resources	
Collection of Local and Traditional Knowledge: Community mapping of resources and use	Guidelines for Collection of Local and Traditional Knowledge and "mo" in the Marshall Islands	<ul style="list-style-type: none"> • Identity existing problems related to climate. A beach walk with the community members can include discussion on how/where the sea level will rise, how resources will change (see exercise) • Important to understand what assets the community values, and then these can be reviewed • Key informant interviews to define past event (environmental). (Witness Exercise) • Mapping past hazards changes over the years or agriculture areas • Seasonal calendar regarding season trees).
Socio-economic survey	SEM-Pacifica socio-economic monitoring toolkit. SPC socio-economic survey method.	Understand the capacity to cope with climate changes (adaptive capacity) as a component of their vulnerability. Questions can be formed related to adaptive capacity. SPREP document on Community vulnerability
Baseline Survey of Natural Resources <ul style="list-style-type: none"> • Qualitative survey by members of 	NRAS survey methods or other standardized international survey protocols for marine and	<ul style="list-style-type: none"> • Clarify priority assets (e.g., priority fisheries, coral reefs), which can then be reviewed for their sensitivity to climate change. • Identify which areas are sensitive to, or have been impacted by

Socio-Econ: baseline tool; Impacts to livelihoods & lifestyle; level of knowledge and concern; stakeholder differences

Add to Baseline Survey: Vulnerability Assessment

Namdrik Community Pilot Project



Namdrik Atoll

Quick Facts:

- Land area: 1.07 square miles
- Mean height above sea level: 3 feet
- Population: 500
- Main Income: Copra, traditional crafts, bananas

"the atoll of Namorik stands alone in my experience. I walked...with equal admiration and surprise, through a forest of huge breadfruits, eating bananas and stumbling among taro as I went."

• *Robert Louis Stevenson*

Namdrik Community Project:

- Community Mapping with different groups;
- Seasonal calendar
- Problem-Solution Matrix and Analysis
- Vulnerability Assessment

Namdrik Assessment – issues/threats

Issues/threats

- Increased solid waste
- Increased erosion
- Shifts in seasons
- Increased flooding
- Appearance of invasive
- ↓ marine resources
- Degradation of crops
- *Water lens*

WORKSHEET 8: PRIORITIZING THE THREATS

THREATS	TARGET	AREA	INTENSITY	URGENCY	TOTAL SCORE
1. Kwolopej	7	3	1	3	14
2. Erosi Jambak	5	2	3	3	13
3. Erosi Jambak KEM Ekan	1.5	1	2	3	7.5
4. Erosi Jambak Mama Jajat	2	3	3	3	11
5. Invasive Sp.	5	1	3	3	12
6. Erosi Jambak Keg. Saja	4	2	3	3	12
7. Ombak Saja Ko	5	3	2	3	13

Threat Analysis – Increased Erosion (Namdrik)

- Existing stressors is likely related to current practices
 - Sand mining on lagoon side for construction (dispensary, homes, cisterns, school)
 - Past filling of wetland for the airport road altered shoreline near airport
- Climate change will make it worse: accelerated sea level rise and increased storm intensity

Assets: houses, beaches, trees, graves, cultural sites

What is the issue?



Erosion (20-30 feet since 1980s), is impacting houses, beaches, trees, graves, cultural sites in the downtown and airport areas. While erosion is likely worsened by community mining practices, future SLR and increased storm intensity may increase erosion.

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What is the issue?



Erosion (20-30 feet since 1980s), is impacting houses

Strategy – Implement measures and best practices on sand management to slow the rate of erosion in the next 3 years.



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What is the issue?



Flooding occasionally occurs during king tide, or cyclones, and impacts houses, churches, taro patches. It is anticipated that impacts will worsen with increased storm intensity and future SLR.

What is the issue?

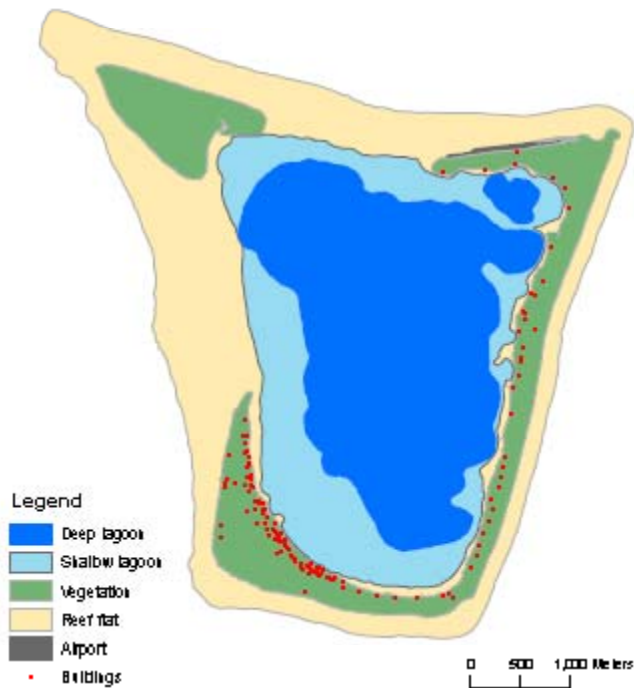


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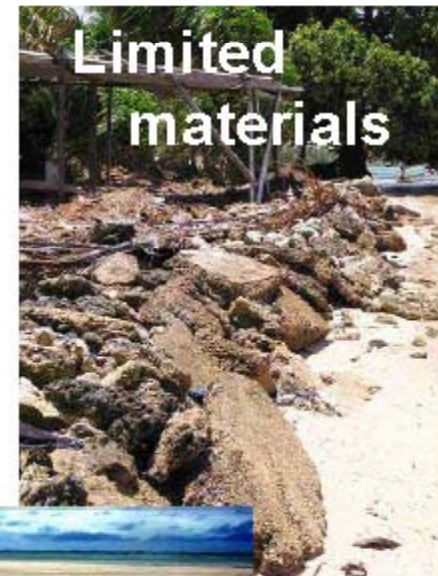
Strategy – Implement best practices and designs to lessen impacts floods, downtown over the next 3 years.



Adaptive Capacities – Hard vs soft solutions



**Relocation
Potential**



“Hard” Solutions



“Soft” Solutions



Partnership is Critical to Success!!

- Equal Commitment from Govt. partners, NGOs and Community leaders;
- Additionally, technical and funding support to continue on to other communities;
- Lessons learned.....


Sharing of experiences

- Micronesia Sub regional Micronesia Challenge/Climate Change meeting 2009, Majuro Marshall Islands
- Pacific Climate Change Roundtable, 2009
- Sharing of best practices within region and resources
- Completion of Sustainable Financing Plan for effective conservation

COLLEGE OF THE MARSHALL ISLANDS

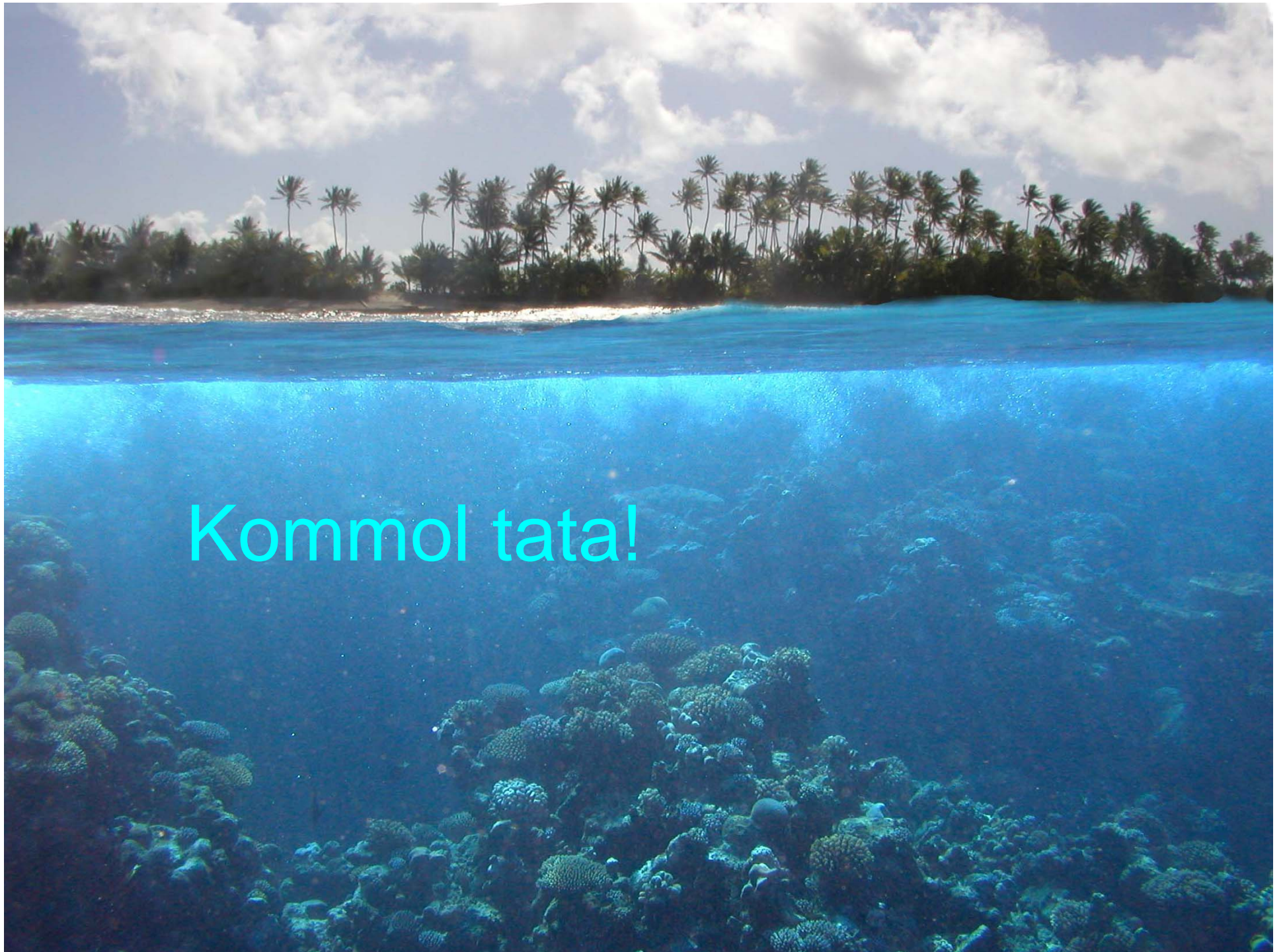
MARINE SCIENCE CERTIFICATE PROGRAM

Training of Conservation Officers

An underwater photograph showing several divers in a coral reef environment. The water is clear blue, and the reef is visible in the foreground and background. One diver in the center is holding a white clipboard and looking towards the camera. Other divers are visible in the background, some with their heads and masks visible. The overall scene is bright and clear.

This program emphasizes practical, hands-on skills, both on/in the water and in the classroom, and also provides an academic background essential for marine scientific support for coastal management.

- Coral Reef Ecology
- Coral Reef Threats
- Climate Change Adaptation
- Disaster Risk Assessment/Management
- Water Quality Testing Certificate
- Survey Techniques
- Integrated Coastal Management
- MPAs and Management
- Monitoring and Evaluation



Kommol tata!