



University of Guam
Sea Grant Program
Strategic Plan 2013-2016

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PREFACE

In 2008, The University of Guam Sea Grant Program (UOGSG) underwent a strategic planning process that integrated the feedback and priorities from various stakeholder and focus group sessions. This work has guided the efforts to present. Over the course of the last four years, UOGSG has continued to engage with stakeholders as a major project goal in order to shape the application for coherent area program status. In 2012, UOGSG was granted coherent area program status and will continue to develop a well-aligned education, extension and research program through 2016. University of Guam is seeking Institutional Sea Grant status to solidify Sea Grant in the region and further support strategic plan initiatives. This strategic plan represents these planning efforts and will continue to be improved over the years as our community adapts and continues to grow.



ABOUT UNIVERSITY OF GUAM SEA GRANT

By virtue of its strategic geographic location – UOG is the only US-accredited four-year institution located within the Western Pacific, a region the size of continental US – the University of Guam plays, a key role in the development of critical knowledge regarding the marine, coastal and environmental resources within the Western Pacific Region. An open admissions four-year land-grant institution, its mission is Ina, Diskubre, Setbe: to Enlighten, to Discover, to Serve. To this avail, the University offers 33 baccalaureate degree programs and 11 master’s level programs. Within four hours flying time to most of the major cities of Asia, UOG serves as the primary institution for higher learning for Western Pacific. Of the University’s 3,387 students (up 3.7% from Fall 2007 and the highest enrollment since 2000), 91% are of Asian-Pacific Islander ethnicity, and 69% are full-time (Fall, 2009.) There are 832 total employees, including 182 full-time faculty, and 34 administrators. The University had \$81 million in consolidated gross revenues in FY08. While local government appropriations make up 35% of consolidated revenue, they constitute 70% of unrestricted general operations revenue. Other primary revenue sources are research grants, contracts, tuition, and fees.

University of Guam Sea Grant transitioned from ‘project’ to ‘program’ status in year nine of operation (2012). Over years ten through fourteen of the program, UOGSG will be targeting STEM and ecosystem based education efforts at the undergraduate and professional level, watershed management and conservation, sustainable fisheries, and climate variability. Our goal is to continue active engagement of stakeholders in their quests for better lives and sustained ecosystems, which will support them. Faculty and staff will continue to develop and implement educational materials, integrate extension activities, and serve as an honest broker of scientific information for the region. UOGSG will begin to develop activities to prepare for a 2015 push for Institutional status. Research capacity will gradually increase over the next four years such that the program can support a well-aligned research, extension, and education initiative.



MISSION AND VISION

The National Sea Grant College Program envisions a future where people live, work and play along our coasts in harmony with the natural resources that attract and sustain them. This is a vision of coastal America where we use our natural resources in ways that capture the economic, environmental and cultural benefits they offer, while preserving their quality and abundance for future generations.

This vision complements the vision articulated in NOAA's Strategic Plan: "Healthy ecosystems, communities and economies that are resilient in the face of change." Sea Grant's mission is to provide integrated research, communication, education, extension and legal programs to coastal communities that lead to the responsible use of the nation's ocean, coastal and Great Lakes resources through informed personal, policy and management decisions.

University of Guam Sea Grant's mission is:

To integrate and apply research, extension, and education activities that sustain and develop island environments while integrating the knowledge and culture of the island's people.

Major programmatic goals include:

- o Enhanced understanding of coastal processes in ways that promote sustainable human activities through extension and education activities;
- o Improved conservation, protection, and perpetuation of coastal resources and property;
- o Provide scientifically accurate data and methods to inform management and policy;
- o Identify and involve stakeholders in community based management efforts;
- o Play a leadership role by developing across-sector strategies for addressing major issues affecting delicate coastal marine ecosystems; and
- o Empower businesses to make sustainable decisions that are socially, environmentally, and economically profitable.



THE SEA GRANT MODEL

The U.S. Congress created sea Grant in 1966 to be a highly leveraged federal and state partnership to harness the intellectual capacity of the nation's universities to solve ocean, coastal, Great Lakes and island (hereby referred to as coastal) problems. The National Sea Grant College Program engages citizens, communities, scientists, organizations and governments to sustain and enhance the vitality, value and wise use of the nation's coastal resources. Administered and supported by NOAA, and implemented through leading research universities, Sea Grant provides unique access to scientific expertise and to new discoveries.

Through its scientists and communications, education, extension and legal specialists (hereby referred to as engagement professionals), Sea Grant generates, translates and delivers cutting-edge, unbiased, science-based information to address complex issues.

Sea Grant is a national network. This network includes the National Sea Grant Office, 33 university-based state programs, the National Sea Grant Advisory Board, the National Sea Grant Law Center, the National Sea Grant Library and hundreds of participating institutions. The Sea Grant network enables NOAA and the nation to tap the best science, technology and expertise to balance human and environmental needs in coastal communities. Sea Grant's alliance with major research universities around the country provides access to thousands of scientists, students and engagement professionals. Sea Grant's university-based programs are fundamental to the development of the future scientists and resource managers needed to conduct research and to guide the responsible use and conservation of our nation's coastal resources. With its strong research capabilities, local knowledge and on-the-ground workforce, Sea Grant provides an effective national network of unmatched ability to rapidly identify and capitalize on opportunities and to generate timely, practical solutions to real problems in real places.

SEA GRANT CORE VALUES

Since its inception, a strong set of core values has provided the foundation for Sea Grant's work. Sea Grant is founded on a belief in the critical importance of university-based research and constituent engagement. Sea Grant invests significantly in merit-reviewed research each year. Research discoveries are then distributed to Sea Grant's constituents through sustained engagement programs. Meaningful and sustained engagement has allowed Sea Grant to form strong partnerships with leading coastal state research universities, with other NOAA programs, and with a wide range of public and private partners at federal, state and local levels. This has proven to be a highly effective way to identify and solve the most relevant problems facing coastal communities.

Sea Grant's unique integration of research with constituent engagement is at the heart of its mission. As a pioneer in translational research (from discovery to application), Sea Grant ensures that unbiased, science-based information is accessible to all. The diverse capabilities of Sea Grant's personnel and partners enable the organization to be creative and responsive in generating policy-relevant research and disseminating scientific and technological discoveries to a wide range of audiences. Sea Grant's science-based, non-regulatory approach and its long-term history of engagement with local communities have made Sea Grant a trusted source of information. Sea Grant serves as a catalyst for decision support by increasing knowledge among decision-makers and the public as a whole. Sea Grant's commitment to these core values is vital to achieving the goals set forth in this plan.



FOCUS AREAS

The University of Guam Sea Grant Program has established focus areas that model that of the National Sea Grant Program which include:

1. Healthy Coastal Ecosystems,
2. Sustainable Fisheries and Aquaculture,
3. Resilient Communities and Economies,
4. Environmental Literacy and Workforce Development.

These four areas guide the actions and impact driven planning within UOGSG. In addition to the four main focus areas, UOGSG puts significant effort towards program development such that effort is allocated towards aligning education, extension, and research. The program takes into consideration the current resources and programs aimed at serving the environment and community needs when establishing priorities and direction with initial seed funding from the National Sea Grant Office. Together with stakeholder and advisory board input, UOGSG has identified goals to pursue and strategies that rely on expertise in education and extension while building a foundation for research that can support efforts to reach full institutional Sea Grant designation within the next 5 years.

HEALTHY COASTAL ECOSYSTEMS

Goal 1: Enhanced health, diversity and abundance of fish, wildlife, and plants improve ecosystem services.

Objective 1: Build capacity and foster graduate student involvement in regional research.

Strategies:

- a. Define UOGSG research priorities (to include climate change and community coastal development).
- b. Fund two to four (2-4) 2nd year graduate students (stipend and research dollars) in areas that fulfill research priorities.
- c. Increase UOGSG capacity by hiring individual(s) that have content area expertise in the field(s) of resource management, conservation, environmental biology, and/or marine biology, etc.
- d. Continue to engage with stakeholders to identify community needs and facilitate action at various levels including University, local NGO's, and governmental agencies.
- e. Continue to develop a collaborative relationship with Palau advisory council and pursue cohesive projects that benefit the region.

Expected Outcomes:

- i. Informed research approach that is aligned to education and extension and focus on ecosystem based management.
- ii. Capacity to address local and regional research needs is supported by graduate students.
- iii. Relevant contributions to regional research fields through publication and presentations.
- iv. UOGSG will maintain a positive 'brand' within the region and increase capacity to deal with key stakeholder issues.



Measureable Objectives:

1. UOGSG research advisory board is established, research priorities are clearly outlined, and RFP to support graduate student research at UOG is released.
2. At least two students graduate with UOGSG support, publish research in a peer reviewed journal or present data at regional or national conferences.
3. New hire is managing Pago Bay Conservation Program and outreach events as associated with the program.
4. At least 5 stakeholder meetings have been held to gather input and formulate future plans.
5. Collection, catalog and genetic assessments of algal populations are compiled, critical findings are published in a peer-reviewed journal (at least two publications).



Goal 2: Ecosystem-based approaches are used to manage land, water and living resources.

Objective 2: Inform and facilitate ecosystems based management and conservation practices.

Strategies:

- a. Continue to develop, produce, and distribute informational literature and media to the public that is designed to expand knowledge of coastal processes and the benefits of using ecologically sound development practices.
- b. Promote community-based ecosystem based management through effective engagement with Pago Bay watershed communities.
- c. Support a RARE pride campaign student to increase awareness of resilient reef ecosystems and sustainable use.
- d. Comprehensive strategies to assess invasive species potential in the region.

Expected Outcomes:

- i. Public officers can make informed decisions regarding policies that impact the environmental, social, and economic bottom lines for Guam.
- ii. Community members are involved in the planning and implementation processes of ecosystem-based management on Guam.
- iii. Comprehensive tools in place to address issues that harm the reef.
- iv. Researchers better understand species variation in the region and are able to identify threats posed by invasive species in the region.

Measureable Objectives:

1. Adapt the Non-Point Source Education for Municipal Officers (NEMO) model to education decision makers about best management practices to produce at least 4 information guides.
2. Disseminate at least 12 articles in the Pacific Daily News addressing key issues in the community.
3. Graduate student research targets critical watershed resource issues and specific tools (at least 2) have been put in place to improve ecosystem health.
4. RARE campaign specialist launches successful social marketing campaign that results in behavior change among target population.
5. Collection, catalog and genetic assessments of algal populations are compiled, critical findings are published in a peer reviewed journal (at least two publications).



RESILIENT COMMUNITIES AND ECONOMIES

Goal 3: Resilient communities adapt to the impacts of hazards and climate change.

Objective 3: Provide sound information and research on climate variability

Strategies:

- a. Focus on climate variability, coastal hazards (vulnerability and resiliency) and ecosystem conservation (UOGSG will pursue additional funding for these key areas).
- b. Provide training and workshop opportunities for the community and decision makers.

Expected Outcomes:

- i. Better understanding of community perceptions and awareness that can impact community level planning, response.
- ii. Climate variability and coastal hazards outreach strategy is aligned to other GovGuam agencies and resounds in a one voice, one message format.
- iii. Community is aware of climate variability and the threats it poses to our island.
- iv. The community resilience of Guam residents is maintained (to known threats) and increased (to yet unforeseen threats).
- v. Increased availability of accurate and relevant information for modeling and climate predictions.
- vi. Host trainings, workshops, and/or support relevant trainings to bring critical regional research to the forefront and increase regional conversations on climate change and coastal hazards.

Measureable Objectives:

1. Needs assessment completed to understand hazards vulnerability and resiliency potential.
2. Fund climate change research projects (at least 2) that are relevant to climate modeling and variability.
3. Community based workshops (at least 2) held to highlight research and current findings in climate variability field.
4. A representative number of people from the community have attended trainings and workshops and are accessing information and tools (via website and Homeland Security). If hazards occur, in area, community will demonstrate maintained resiliency.



Goal 4: Communities use comprehensive planning to make informed strategic decisions.

Objective 4: Support the vision of a sustainable future for Guam.

Strategies:

- a. Establish a regional climate variability network in order to increase the discussion locally.
- b. Support the goals and objectives of the Guam Environmental Education Committee (EEC), Center for Island Sustainability (CIS), and the Guam Energy Task Force (GETF).

Expected Outcomes:

- i. Residents are increasing aware of dependence on imports and are implementing changes that positively effect our sustainability.
- ii. Businesses rise as leaders in the community of examples of positive change and providing leveraged funding to environmental education.

Measurable Objectives:

1. A formal or informal professional community is established on Guam with SG as a facilitator.
2. Faculty are involved in education and extension operations of GETF, CIS and EEC.

Objective 2: Provide leadership and expertise on key stakeholder issues.

Strategies:

- a. Integrate stakeholder input when defining and addressing priority issues.
- b. Increase leveraged funding with partners in the form of technical expertise contributions to key UOGSG programs and projects.
- c. Train UOGSG faculty and staff to act as honest brokers of information when dealing with stakeholders, being aware of culturally sensitive and/or controversial issues.
- d. Continue to develop cross sector (i.e., academic, government, and community) strategies for addressing the major issues affecting Guam's delicate coastal marine ecosystems by acting as a liaison between the local government agencies and the public and working closely with policy makers by advising and assisting in translating documents that will achieve sustainable use of coastal resources.

Expected Outcomes:

- i. Community members continue to trust in the SG team as a source of honest broker information.
- ii. Established partnerships with agencies such as NRCS, GEPA, DAWR and others.

Measurable Objectives:

1. New hires attend Sea Grant Academy.
2. Strategic plan evolves to increase research capacity.
3. UOGSG is gathering leveraged funding that reaches 2:1 (federal: leveraged) minimum by 2017.
4. UOGSG establishes 4 new collaborations while maintaining existing relationships.

ENVIRONMENTAL LITERACY AND WORK-FORCE DEVELOPMENT

Goal 5: An environmentally literate public supported and informed by a continuum of lifelong formal and informal engagement opportunities.

Objective 5: Advance ocean and environmental literacy using formal and informal education.

Strategies:

- a. Formalize a role for the UOGSG team in increasing capacity for science education in the Guam Department of Education (GDOE) K-12 system, and further developing K-12 Navigating Change Mariana curriculum;
- b. Promote environmental literacy throughout the Western Pacific region.
- c. Facilitate teacher and student involvement in community based monitoring, conservation efforts, and sustainability curriculum.
- d. Establish 'Navigating Change Mariana' teachers network to encourage communication among.



- Guam and regional teachers that may assist in reducing redundancies and increasing efficiency of teaching science in the region.
- e. Develop specific (education and extension) products (via informal and formal education) that address sustainability, climate variability, and adaptation within the region.
 - f. Forge regional collaborations with other Pacific Islands.

Expected Outcomes:

- i. Additional staffer at UOGSG will handle Education goals, including teaching PD and integrated courses and satellite education programs.
- ii. UOGSG will facilitate a wider audience of lifelong learners and create an avenue to deepen their understanding of environmental and marine science.



Expected Outcomes (con't)

- iii. Establishment of consistent professional development avenues that teachers and lifelong learners can rely on.
- iv. Interactive community products are available for use in public venues (e.g. expos, workshops, fairs, etc).
- v. Increase capacity of Sea Grant program in Palau and regional alignment of education and extension activities.

Measureable Objectives:

- 1. Two courses are offered for teachers to promote climate variability and Guam-centric curriculum instruction in classrooms.
- 2. Instructional time dedicated to teaching science in the classroom increases significantly.
- 3. At least 500 teachers have enrolled in workshops, courses and/or trainings offered by UOGSG.
- 4. UOGSG has featured interactive exhibits at 20 Events Island wide.
- 5. Palau receives funding to support Ridge to Reef education and outreach on Palau.

