Na Wai Ola ... Waters of Life: Protecting and Preserving Water Resources in the Pacific

Glen K. Fukumoto¹, Lawerence J. Duponcheel², Leilanie Rechelluul³, Jina David⁴, Jackson Phillip⁵, Mark Walker⁶, Brian Rippy⁷, Don Vargo⁸, Luisa F. Castro ¹

¹ University of Hawaii at Manoa, ² Northern Marianas College, ³ Palau Community College, ⁴ College of the Marshall Islands, ⁵ College of Micronesia-FSM, ⁶ University of Nevada-Reno, ⁷ American Samoa Environmental Protection Agency, ⁸ American Samoa Community College

Waters of Life

- Water is the key to a sustainable future in many of the U.S. Protectorates and other Pacific Island nations in the Pacific.
- Richness and the bounties of the culture is measured by the quality and quantity of water.



Water Quality Impacts

- Geology and sensitive ecosystems of the islands limit the volume of surface and groundwater storage.
- A growing population. Densities on several islands are amongst the highest in the world, impacting coastal and surface waters.
- Current waste management practices of small piggeries can severely impact human health concerns, as seen in below





Alternative Waste Management Solutions for Small-scale Piggery Operations: Educational Outreach, Demonstration and Adoption for Pacific Island Communities.



Development of educational tools (publications, video, web) aimed at specific island communities

Development of appropriate technologies for Pacific Island communities.

Continued collaborations and partnerships improved model technologies.

Educational outreach increased the body of knowledge and resources on technology.

Program Impacts

Demonstration established to evaluate technologies improved farmer confidence

Food Security

- Pacific Island nations face many challenges in meeting food self-reliance goals.
- Geographic isolation limits access to fresh and healthy food commodities.
- •Limited land area restricts expansion of agricultural production.



Cultural Challenges

- Understanding unique island cultural systems of communication; biases, prejudices, beliefs, and practices
- Creating a consciousness of environmental and community well-being, making connections to the ecosystem processes.
- Building linkages and networks is an evolutionary process to enhance communication, trust and adoption.
- Engaging local agents as change agents and advocates.



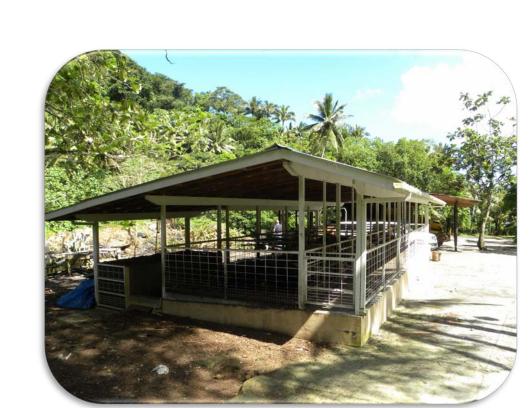
Reduced risk of environmental pollution through nutrient utilization and pathogen reduction

> Reduced water consumption and water pollution



Compost used improved soil fertility and soil health

Safety and efficacy of passive composting in killing leptospirosis bacteria



Improved farmer confidence in the 'institutional framework' in problem solving and supporting human health

Engaging the scientific community to quantify effectiveness of technologies to address critical issues

Summary

The effects of sustaining the focus on safe and appropriate technologies for Pacific Island producers has allowed the creation of a model for the development and transfer of technologies, and in effect served to allow for sustained food production where it is most needed, while building capacity for improved environmental stewardship, human and animal health.

Acknowledgements

This project is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under agreement No. 2009-51130-06048, Sub Award No. Y550082 and by CTAHR Extension Program Funds for multi-state and integrated projects.