Federated States of Micronesia (College of Micronesia)

Plan of Work for 2023-2027

Status: Final (Approved 9/28/2022)

Executive Summary Overview

The College of Micronesia land grant (COM-LG) program Plan of Work is an integrated approach to addressing the critical issues of strategic importance to the entire Micronesian region. Identified problems are broad, requiring that the different areas in Micronesia develop research and extension programs that address short-term, intermediate, and long-term critical issues, needs, and problems unique to each location. The COM-LG identified and developed critical issues based on stakeholders' inputs consistent with economic, social, and ecological priorities identified by the three nations (the Republic of Marshall Islands, Federated States of Micronesia, and the Republic of Palau) through their Economic Development Plans or similar sector development plans. To address the critical issues, COM-LG will implement programs in six sites (across three island nations) and remote locations to reach people from all walks of life, including women and the underrepresented.

The geographic region served by the COM-LG program covers six sites across three island nations and over 2 million square miles, an area larger than the continental United States. The region is inhabited by a heterogeneous mixture of people from diverse cultural groups with different customs, traditions, and languages. The total population is approximately 190,925, as per the 2021 data.

Four extension counties in the Federated States of Micronesia (FSM) are Yap, Chuuk, Pohnpei, and Kosrae. These counties include 607 islands and atolls, 65 of which are inhabited, spread across an ocean area of more than one million square miles. Although this nation's land area is only 271 square miles, there are 2,700 square miles of lagoons.

The Republic of the Marshall Islands (RMI) consists of two north-to-south chains of islands. Altogether it consists of 30 atolls, each made up of many islets and five coral islands. The coral atolls rise not more than 25 feet above sea level and, on average less than 1,000 feet in width. The island group lies on the eastern edge of Micronesia, 2,100 miles southwest of Honolulu.

The Republic of Palau (ROP) consists of a cluster of more than 343 islands in the southwest corner of the region, roughly 500 miles southeast of the Philippines. These islands range from the hundreds of small limestone Rock Islands and isolated atolls to the volcanic island of Babeldaob.

The COM-LG program will continue to play an active role in the three island nations' socioeconomic development. It conducts applied research and provides appropriate extension programs targeting clients from these small island communities. Identifying critical issues and trends from which programs are developed involves the input of stakeholders, observations, and staff findings, and from partners and collaborating agencies. Government studies, reports, and publications are also reviewed periodically to track trends and identify regionally relevant critical issues. The extension of the economic provisions

of the Compact of Free Association funding in the FSM and the RMI in 2004 provided these two countries with alternative scenarios for achieving economic growth and self-reliance in the next 20 years. Also, ROP's Compact of Free Association with the US Government continues. This international agreement and governing relationships of free associations between the United States and the three sovereign nations significantly impact its citizens' living standards. Other significant trends include internal migration, out-migration of both young and adult Micronesians to the adjacent US population centers in search of economic opportunities, impacts from climate variability and change, and increasing social pressures brought on by rapid, unsustainable development, brain drain, and demographic changes leading to declining cultural values, children, youth, and family issues.

The COM-LG program supports sustainable systems that improve agriculture, human capacity, community, and natural resource development. Sustainable systems must be economically viable, environmentally sensitive, socially acceptable, culturally appropriate, and technologically feasible. In addressing the wide range of issues identified by stakeholders, the COM-LG program emphasizes the preservation and protection of Micronesia's natural and cultural environment. This response is vital, requiring concerted efforts to raise awareness that the long-term quality of life depends on a healthy natural and social environment. Micronesians should integrate traditional farming methods with scientifically sound agricultural practices that empower and engage community members in sustainable agriculture and aquaculture production systems that will have long-lasting positive impacts on their islands and the region.

Obesity, malnutrition, diabetes, and food and waterborne diseases are also daunting problems in Micronesia. Outreach programs will emphasize the need for a sustainable food production system, balanced diets, value-added products, food processing, proper food handling, and clean water sources to reduce food and waterborne diseases. Other problems, such as social issues, family planning, school dropouts, joblessness, alcoholism, and tobacco use, will also be addressed through appropriate extension programs.

In the coming years, the land grant program will continue to address the following six critical issues:

1. Lack of local food production and food insecurity: Agriculture is essential for sustainable economic development and food security of small island communities in Micronesia. This program will address various issues in sustainable plant and animal production systems and their implications on Micronesian islands' environment, including atolls. Emphasis will be placed on traditional food production systems, conservation of natural resources, techniques that integrate conventional practices with contemporary approaches, and processing and marketing crops and animal products.

2. Sustainable aquaculture development: There is growing emphasis on the sustainable development of marine resources to meet the future economic needs of the island nations, provide self-sufficiency, and improve the food and financial security of island communities. The development of hatchery-based aquaculture production has great potential to address issues related to the decline in natural populations of economically important marine species. Research and extension programs will focus on aquaculture species, including giant clam, milkfish, rabbitfish, sea cucumber, and mangrove crabs. Establishing site-specific hatchery techniques for these species will help in stock enhancement.

3. Youth and family issues in the communities: The multitude of problems that Micronesian youth face in present-day life must be addressed with programs and practical strategies to restore and preserve the authentic Micronesian culture and traditions. Such programs will eventually bring opportunities for income generation, entrepreneurial skills, and moral value improvement. Youth programs will continue to serve youth by providing educational workshops on acquiring knowledge and developing lifelong skills, forming positive adult relationships, and leadership experiences. Leadership and volunteerism, civic, economic, and cultural skill programs are essential for the family, youth, and community development endeavors.

4. Climate challenges in Micronesia: Small Island agriculture systems are highly vulnerable, affecting food security, livelihoods, and economic prosperity. Enhancing local communities' adaptive capacity is critical to food and nutrition security goals. Developing locally suitable climate-resilient food systems is unexplored in research and practice. Adaptation to climate variability and extreme events serves as a basis for reducing vulnerability to long-term climate change. Programs under this critical issue will enable communities to adopt site-specific agricultural production methods and practices.

5. Food contamination and resulting food-borne illnesses are growing concerns across the Micronesian region. The program will educate and train the target audience to increase knowledge and skills, ensure safe food preparation, handling, and storage, adopt best practices, improve the quality and safety of food products, and reduce the incidence of foodborne and waterborne illnesses. It will also continue strengthening existing collaborations on programs that inform stakeholders about healthy lifestyles and the consumption of safe and healthy foods.

6. Childhood obesity: The programs under this critical issue will promote children's well-being through active programs and provide information about nutrition, health, physical education, and appropriate indigenous knowledge and practices. Activities will promote sports and exercise, school, home, and community gardening activities to encourage and increase local fruits and vegetables among students with activities such as proper meal planning to address obesity.

The COM-LG extension programs and research projects focus on issues pertinent to each location while targeting to achieve the overall goal of the entire Micronesian region’s critical issues.

Merit and Scientific Peer Review Processes

No significant changes

Stakeholder input: Action Taken to Seek Stakeholder Input

No significant changes

Stakeholder input: Methods to Identify Individuals and Groups

No significant changes

Stakeholder input: Methods for Collecting Stakeholder Input

No significant changes

Stakeholder input: A Statement of How the Input Will Be Considered

No significant changes

Critical Issues

Childhood Obesity

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

Childhood obesity continues to be a significant health problem across the Micronesian region. The 2019 'Atlas of Childhood Obesity' shows (based on 2017 data) that in ROP, 40% of children (aged 5-9) and 30.4% of adolescents (aged 10-19) are obese. Whereas in the RMI and the FSM, the corresponding figures are 35.3% and 28.9 (aged 5-9) and 25.3% and 19.8% (aged 10-19), respectively. Without substantial interventions to prevent and treat childhood obesity, the number of school-age children and adolescents living with obesity is predicted to rise from current estimates to about 25% to 30% by 2030. Modernization, dietary changes, and dependence on imported food products, and lack of physical activity contribute to obesity. Children lack sufficient knowledge about healthy food choices, eating habits, and the risk of limited physical activities. Limited availability of fresh produce or the cost of healthy nutritious food is an essential factor that influences food choices. Presently Micronesians are among the top 10 obese countries in the world. Therefore, it is crucial to develop and promote programs and activities to address this issue.

This program will promote awareness of how to reduce obesity through health and nutrition education activities, emphasizing the consumption of healthy local foods (high fiber foods) and physical activities. School gardening programs and utilization of local foods in school meal programs will be encouraged. Home gardening, urban gardening, and community gardening will be promoted. Appropriate extension interventions will increase local foods' consumption, proper meal planning, and increased physical activities among children and adolescents to address obesity.

Science Emphasis Area

Family & Consumer Sciences, Human Nutrition

Climate change challenges in Micronesia

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

The changing climate threatens small island communities in many ways. The climate-poverty puzzle is one of the difficult problems limiting island communities' development and uptake of agriculture innovations. Impacts of climate change add to the problem and hinder the efforts to achieve Sustainable Development Goals successfully. Island communities must take necessary actions in response to these global issues and find sustainable methods of farming. Enhancing local communities' adaptive capacity is critical to food and nutrition security goals in the long run. Appropriate extension intervention in innovative climate-smart agriculture strategies will help local communities to learn and adopt required

skills to improve adaptive capacity. Coping with climate variability today will inevitably pave the way for adapting to climate change tomorrow.

Ensuring that people have continuous access to nutritious food always requires a well-planned and managed approach to protect existing natural resources and improve the sustainability of current agricultural practices incorporating climate-smart agriculture practices. Outreach and extension programs focused on climate-smart methods such as agroforestry, soil management, crop diversification, integrated crop-livestock systems, water conservation, alternative crop production methods, etc., will enable communities to adopt site-specific agricultural production technologies and practices. This approach will address adaptation and builds resilience to climate change-related shocks.

Science Emphasis Area

Environmental Systems

High incidence of food and waterborne illnesses

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

Illness and death caused by contaminated water and food are a constant threat to public health and a significant impediment to socioeconomic development in Micronesia. The high incidence of food and waterborne illnesses is attributed to the lack of food safety knowledge and poor food handling practices, including improper storage temperature and time, inadequate cooking, and the use of unsafe food sources. These often result in many individuals and households consuming unsafely processed and contaminated foods. The frequency of foodborne illnesses continues to rise, and people and local governments face the daunting task of meeting ever-rising medical costs related to hospitalization.

Outreach and extension programs will help local communities learn and adopt required skills to prevent food and waterborne illnesses. The program will focus on education and training based on scientific knowledge to increase knowledge and skills in safe food preparation, handling, and storage, adopt best practices, improve quality and safety of food products, and reduce food and waterborne illnesses. The program activities will improve the target audience's knowledge, attitude, and behavior in food handling practices and processing safe and healthy food products that will reduce the incidence of food and waterborne illnesses.

Science Emphasis Area

Family & Consumer Sciences, Food Safety

Lack of local food production and food insecurity

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

Food security in Micronesia has worsened significantly in the last few decades because of falling local production per capita, poor growth in the agriculture sector, and increased and costly dependence on food imports. Micronesian islands have an economically detrimental reliance on imported foodstuff,

especially fruits, vegetables, and animal products. The increase in demand and consumption of imported foods has led to an overall decline in local food production and a simultaneous impact on food security. Improving traditional agricultural systems and focusing on local food production and processing methods is critical to reducing poverty and meeting overall food security objectives. Enhancing food security requires traditional agricultural and livestock production systems to change to higher productivity while maintaining environmental integrity. Also, few constraints such as lack of improved bloodlines, lack of affordable feed, diseases, and limited knowledge and local capacity in animal husbandry occur in the livestock sector. There is an urgent need to increase local food production and improve processing methods to ensure an adequate supply for the current and future demand, create income-generating opportunities, and meet food security objectives.

Extension programs will focus on appropriate interventions in innovative environmentally friendly strategies to provide island communities with needed skills to develop and sustain small farm enterprises for food security and income. Extension programs will also address the urgent need to increase local food production to meet food security needs, income generation and reduce dependence on imported foods. The increase in local food production will create surpluses that can be converted into value-added products for local use and the export market. Production of superior, disease-free plants will enhance local crop production.

Science Emphasis Area

Sustainable Agricultural Production Systems

Sustainable aquaculture development

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

The natural population of economically important coastal fishery resources in Micronesia has declined over the years due to overharvesting, destruction of natural habitats, and climate change impacts. There is an urgent need to restock the reefs and waters where wild populations of these resources have declined. The development of hatchery-based aquaculture production has been considered as a solution to address these issues. However, sustainable aquaculture development in this region has been slow due to many limitations such as lack of knowledge, skills, workforce, lack of financial support, non-availability or a reliable supply of seeds, and other critical inputs. A greater emphasis on establishing sustainable aquaculture development of marine resources is needed to provide self-sufficiency and enhance small island communities' food and economic security. Furthermore, the development of site-specific sustainable hatchery-based aquaculture of economically important species will significantly strengthen the current and future stock enhancement strategies and contribute to commercial aquaculture development.

Outreach programs will focus on different aquaculture species, including seaweeds, pearl oysters, edible oysters, giant clams, mangrove crabs, shrimps, lobsters, sea cucumber, milkfish, rabbitfish, and grouper. The establishment of site-specific hatchery techniques for the species mentioned above will help stock enhancement programs for these species and pave the way to improve people's socioeconomic condition in these small islands by creating income-generating and employment opportunities.

Science Emphasis Area

Sustainable Agricultural Production Systems

Youth and family issues in the communities

Initiated on: Nov 26, 2019
State: Federated States Of Micronesia

Term Length: Long-term (>5 years)

Traditionally, Micronesia relied on an extended family system to ensure the basic welfare of its citizens. However, due to Western lifestyles' influence, the shift from subsistence to a cash economy, changing aspirations and priorities has weakened the extended family structure. Today, Micronesian families face challenges in maintaining smooth relationships owing to outside influences and threats. Youth are particularly vulnerable to peer-pressures, leading to substance abuses, teen pregnancies, petty crimes, and school dropouts. Meeting various families' needs for education, regular healthy meals, and other necessities often stresses parents with meager incomes to maintain pleasant family relationships that lead to domestic violence and suicide.

Under the youth program, activities will address the needs of vulnerable families and individuals. After-school programs and refresher courses will be conducted for at-risk students and school dropouts to maintain their school attendance and encourage school re-admission. At-risk families, individuals, and prison inmates will have regular counseling sessions to make the right decisions in their lives. The staff will conduct arts and crafts training to revive traditional skills, restore cultural identities, and increase economic opportunities. Youth and families will be trained in livelihood skills such as sewing, handicraft making, and preparing saleable food products. This program aims to promote an environment conducive for families and youth to develop and nurture sustainable lives with opportunities to maintain strong relationships and welfare through these activities.

Science Emphasis Area

Family & Consumer Sciences, Youth Development