COLLEGE OF MICRONESIA-FSM
APRIL – 1993

COOPERATIVE RESEARCH AND EXTENSION

REPORT TO THE BOARD OF REGENTS

CRE Mission Statement

The Cooperative Research and Extension's mission is to enhance accessible, innovative, and resilient development in agriculture, aquaculture, nutrition, community empowerment, and youth and family well-being, while advancing climate change adaptation. Through research, education, and extension, we collaborate with stakeholders to support the College's mission and FSM's socioeconomic and environmental priorities and long-term goals.

COOPERATIVE RESEARCH AND EXTENSION

Building Resilient Communities

The CRE programs have expanded access to science-based training, resources, and technical assistance, empowering communities, schools, and farmers across the FSM. Through innovative approaches in sustainable agriculture, aquaculture, and nutrition education, they have strengthened local capacities, enhanced food security, and promoted environmentally sound practices. These efforts have built community resilience, enabling island populations to adapt, thrive, and sustain their livelihoods in the face of evolving economic and environmental challenges.

HIGHLIGHTS

CENTER FOR ENTREPRENEURSHIP

Student-Managed Raised Bed Demo Farms Completed and Producing at COM-FSM

The Center for Entrepreneurship (CFE) completed establishing two student-managed raised bed demonstration farms at the COM-FSM as part of its Youth and Families Program. This initiative is designed to equip youth with life and livelihood skills while strengthening local food systems and promoting healthy lifestyles through hands-on learning.

Activities

- **Establishment of Demonstration Farms**
  - Total of **eight raised beds**, each nearly **80 feet long**, constructed and planted.
- **Crop Establishment**
  - Beds planted with **over 300 tomatoes**, **200 cucumbers**, and **100 bell peppers**.
  - By late July, first harvest began, yielding an average of **14 cucumbers per day** from the first bed.
  - Estimated full production (once mature): approximately **3,600 tomatoes** and **3,200 cucumbers** per month.
- **Student Involvement and Training**
  - **24 student interns** from the Agriculture and Food Technology (AFT) program led construction and planting, supported by CRE extension agents.
  - Interns trained in:

- Construction and planting of raised beds.
- Installation and management of hydroponic Bato systems (a type of hydroponic setup that uses individual buckets called Dutch buckets).
- Water and nutrient circulation, proper plant spacing, pest management, trellising, pruning, transplanting, and plant health monitoring.

◊ Continued daily operations support: germination, nutrient preparation, harvesting, and system maintenance.

♦ **Hydroponic Farm Expansion**

◊ Completed installation of Bato systems, now actively growing tomatoes and cucumbers.

♦ **Partnerships and Support**

◊ Conducted in partnership with **UNICEF**, with stipends provided to student interns.

◊ Focus on youth empowerment, life skills, and future-readiness through sustainable agriculture.

♦ **Future Plans**

◊ From late August, management of beds will transition to COM-FSM student clubs.

◊ Produce sales to benefit club activities, with most vegetables supplied to the college dining hall.

◊ Plans to replicate the model at high schools and across all four FSM states.

Accomplishments

♦ Established **two new demonstration farm sites** with **eight raised beds** (80 feet long and 3 feet wide) totaling over **640 linear feet** of cultivation area.

♦ Engaged **24 student interns**, who gained hands-on skills in both soil-based and hydroponic farming systems.

♦ Planted a combined **600+ vegetable plants**: **300 tomatoes**, **200 cucumbers**, **100 bell peppers**.

♦ Achieved early harvest results of **14 cucumbers per day** from one bed within the first month of planting.

♦ Projected monthly yields at full maturity: **3,600 tomatoes** and **3,200 cucumbers**, contributing to campus food supply and reducing reliance on imports.

♦ Trained students in climate-resilient farming practices, including **hydroponic Bato system operation**, pest management, trellising, pruning, and transplanting.

♦ Provided paid internship opportunities through UNICEF funding, fostering both agricultural and entrepreneurial skills.

♦ Created a **sustainable revenue model** where produce sales will directly fund student club activities.

♦ Strengthened food security on campus by establishing a consistent supply of fresh vegetables to the college dining hall.

♦ Developed a replicable model for youth-led agriculture to be expanded to **high schools and all four FSM states** (approximate cost per 80 ft x 3 ft bed is $531.00).

Promoting Safer Street Foods: 25 Kosrae Vendors Complete Food Safety and Health Certification

Activities

- **Training**
  - Conducted a **two-day food safety training** for **25 local food vendors** in Kosrae.
  - Organized under the Youth and Families Program to address the lack of valid **Yellow Health Cards** (a health certificate to legally handle and sell food) among small-scale food vendors, a legal requirement for operating in the state.
- **Training Content**
  - Covered key areas including:
    - Water safety
    - Food sanitation
    - Safe food preparation and handling
    - Hygiene standards to prevent foodborne illnesses
  - Provided practical demonstrations to improve daily food safety practices.
- **Certification Process**
  - Coordinated medical screenings and blood testing for all **25 vendors** following the training.
- **Support Materials**
  - Distributed sanitary starter kits to all participants, including hairnets, aprons, soap, and other hygiene supplies.

Accomplishments

- Successfully trained **25 local food vendors**, equipping them with essential food safety skills and knowledge.
- Ensured **100% certification success,** all **25 participants** passed medical screenings and blood tests and were issued valid **Yellow Health Cards**, enabling them to legally sell food in Kosrae.
- Improved public health standards by introducing consistent hygiene practices, reducing the risk of foodborne illnesses in the community.
- Provided sanitary starter kits to **all 25 vendors**, supporting immediate adoption of safe food handling practices.
- Strengthened collaboration between **CFE, the Kosrae Department of Health, the Kosrae Department of Sanitation, and UNICEF**, creating a replicable model for vendor training and certification in other FSM states.
- Contributed to formalizing and strengthening the **local food economy** by combining education, regulation, and capacity-building for grassroots entrepreneurs.

UNICEF-Supported Water Filter Project – Baseline Assessment Phase

Activities

- **Youth Training and Engagement**
  - Trained **eight youth interns** to conduct household baseline assessments on access to clean drinking water: **six in Pohnpei** (including **two high school students**) and **two in Kosrae**.
  - Training covered water sanitation, field survey methods, community engagement, and basic water testing techniques.
- **Household Surveys and Water Testing**
  - Conducted household visits to **50 homes in Nett, Pohnpei** and **20 homes in Utwe, Kosrae**.
  - Interviews and water sample collections carried out to assess household water quality (testing potability using UNICEF Compartment Bag Test to detect the presence of *E. coli*)).
  - Early results indicate that a significant percentage of households are consuming unsafe water.
- **Partnership and Verification**
  - Met with Environmental Protection Agency (EPA) offices in **Pohnpei, Kosrae, and Yap**.
  - Provided each EPA office with water test kits for independent testing to verify Sawyer filter (potable water filtration devices) effectiveness. Sawyer filters are lightweight, reusable, and highly effective, filtering down to 0.1 micron absolute to remove 99.9% of harmful microbes and makes water safe for drinking.
  - Secured EPA collaboration as technical partners for the upcoming filter distribution phase.

- **Planned Next Steps**
  - Identify and prioritize households facing the most severe water access challenges.
  - Distribute **Sawyer water filters**, a non-electric, low-maintenance solution lasting up to **10 years** with proper care.
  - Organize community training sessions on water safety, sanitation, and filter use.

Accomplishments

- Built the capacity of **eight youth interns** to carry out water access surveys, enhancing local skills in sanitation, data collection, and community engagement.
- Completed baseline water access and quality assessments for **70 households** across Pohnpei and Kosrae.
- Collected actionable data showing widespread consumption of unsafe water, providing evidence for urgent intervention.
- Strengthened partnerships with **three state EPA offices**, equipping them with test kits to ensure independent water quality verification.
- Laid the groundwork for the distribution of durable **Sawyer water filters** to priority households, ensuring long-term access to safe drinking water.
- Positioned youth as **agents of change** in addressing waterborne health risks within their communities.
- Established a replicable model for integrating **youth leadership, public health, and sustainable technology** in the FSM's rural water access programs.

Business Blitz: 53 Upward Bound Program Students Entrepreneurship Training

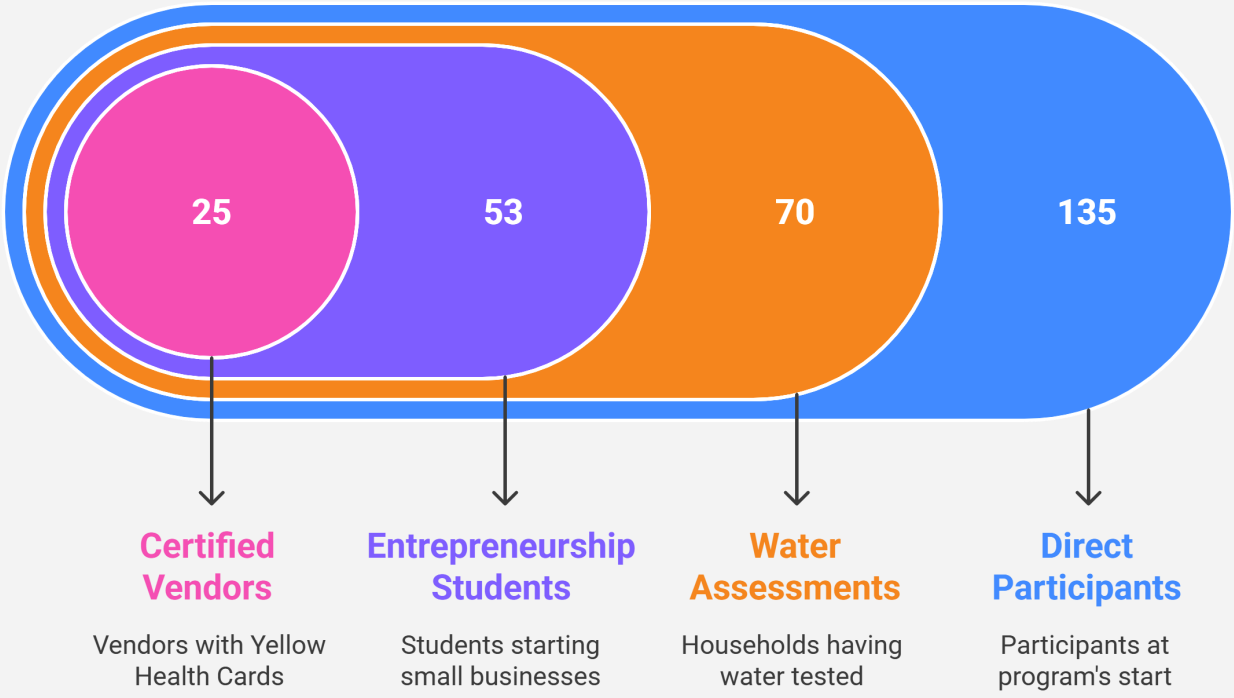
Activities

- **Program Delivery**
  - Conducted a **one-week intensive entrepreneurship training** as part of UB Program's six-week summer enrichment course.
  - Training implemented under the **Youth and Families Program** and the **Marketing and Exports Program** to build student business knowledge, financial literacy, and market experience.
- **Participant Engagement**
  - Reached **53 students (15 males, 38 females)**.
  - Organized into **11 mini-business teams**, each receiving **$100 in seed capital** to plan and launch a small business.
- **Training Content**
  - Covered key business topics:
    - Pricing strategies
    - Cash flow projections
    - Bookkeeping
    - Business planning
    - Customer service
- **Business Blitz Event**
  - Culminated in the **Business Blitz**, held in conjunction with the UB Program's Summer Talent Show.
  - All student-run businesses showcased and sold products to real customers.

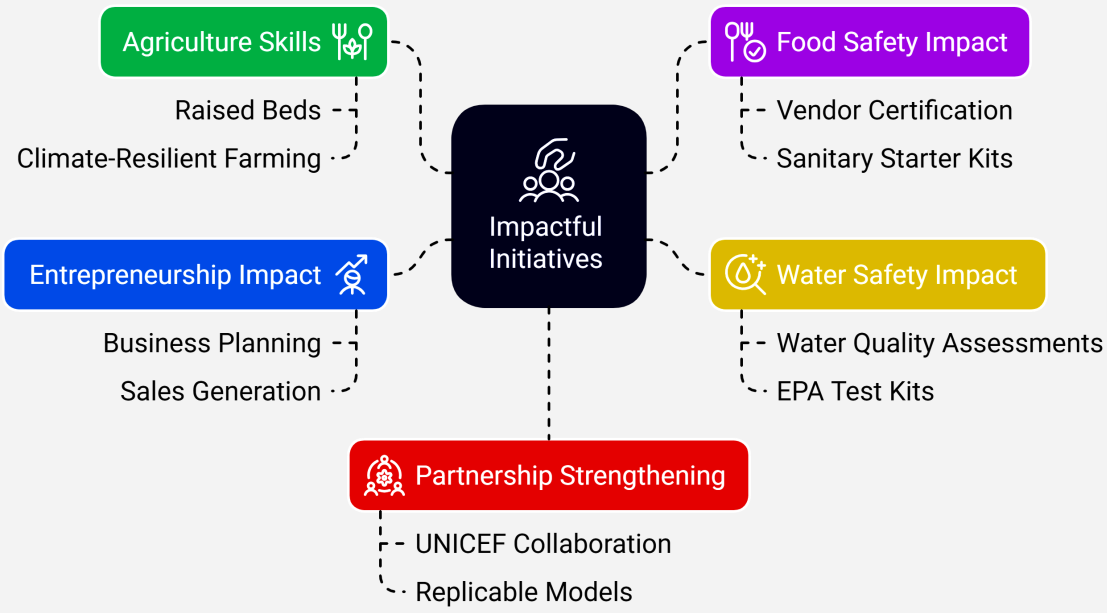
Accomplishments

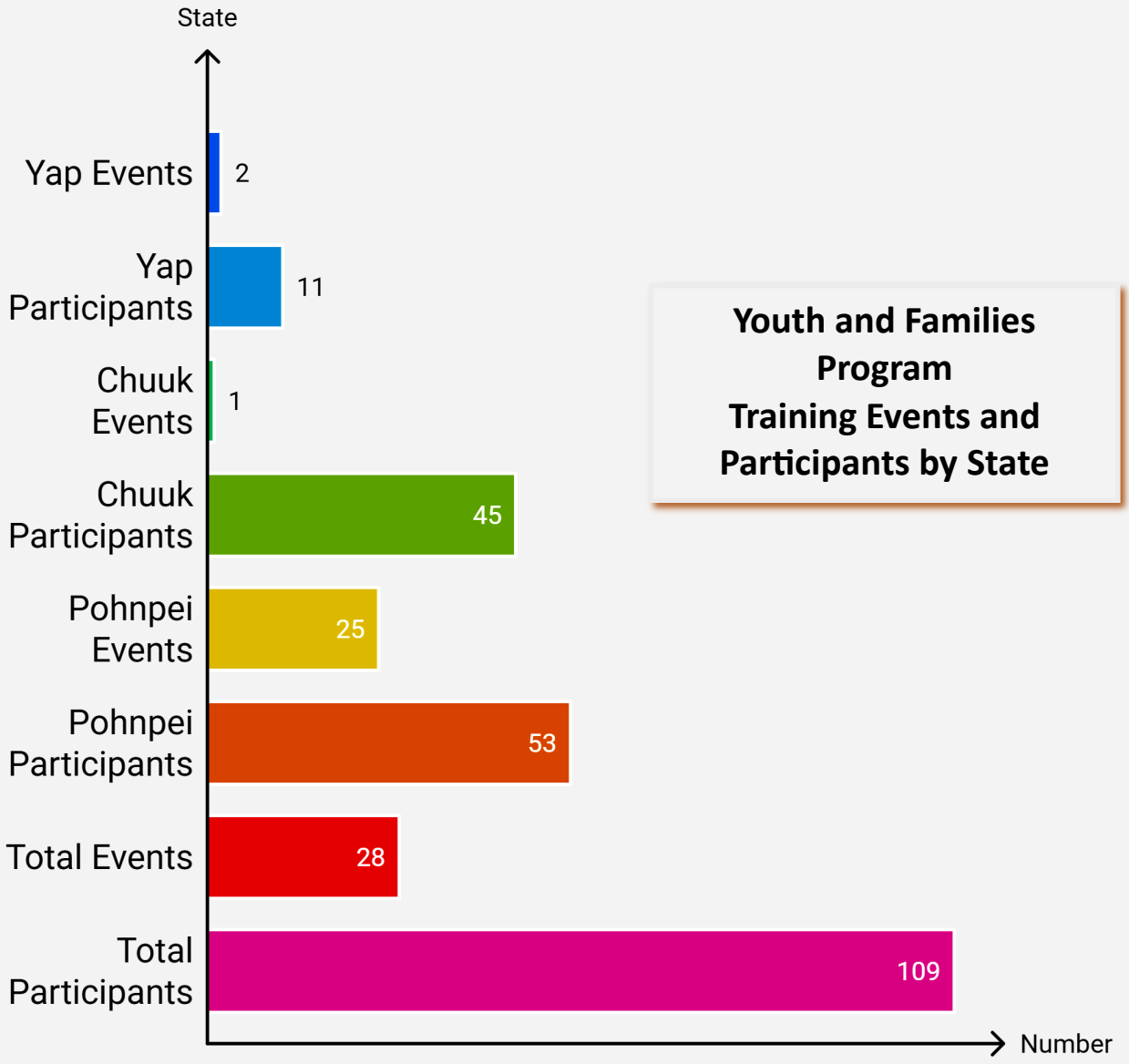
- Provided **53 students** with hands-on entrepreneurship training, equipping them with practical business skills.
- Enabled **11 student teams** to launch small businesses with **$100 seed capital** each, reinforcing principles of budgeting and reinvestment.
- Achieved notable sales outcomes:
  - **Sweet and Tasty** (pre-junior team) – **$264.00** in sales.
  - **Nemin Goodies** (pre-senior team) – **$235.30** in sales.
- Introduced reinvestment concepts by allowing winning teams to retain both seed capital and profits, and non-winning teams to return seed capital but keep net earnings.
- Strengthened **confidence, communication, teamwork, and financial literacy** among all participants.

- Advanced **Marketing and Exports Program** goals by giving students direct experience in product development, pricing, and market testing.
- Inspired continued entrepreneurial interest, with several students planning to operate their ventures during the school year.
- Contributed to youth livelihood development and future economic engagement in FSM's local markets

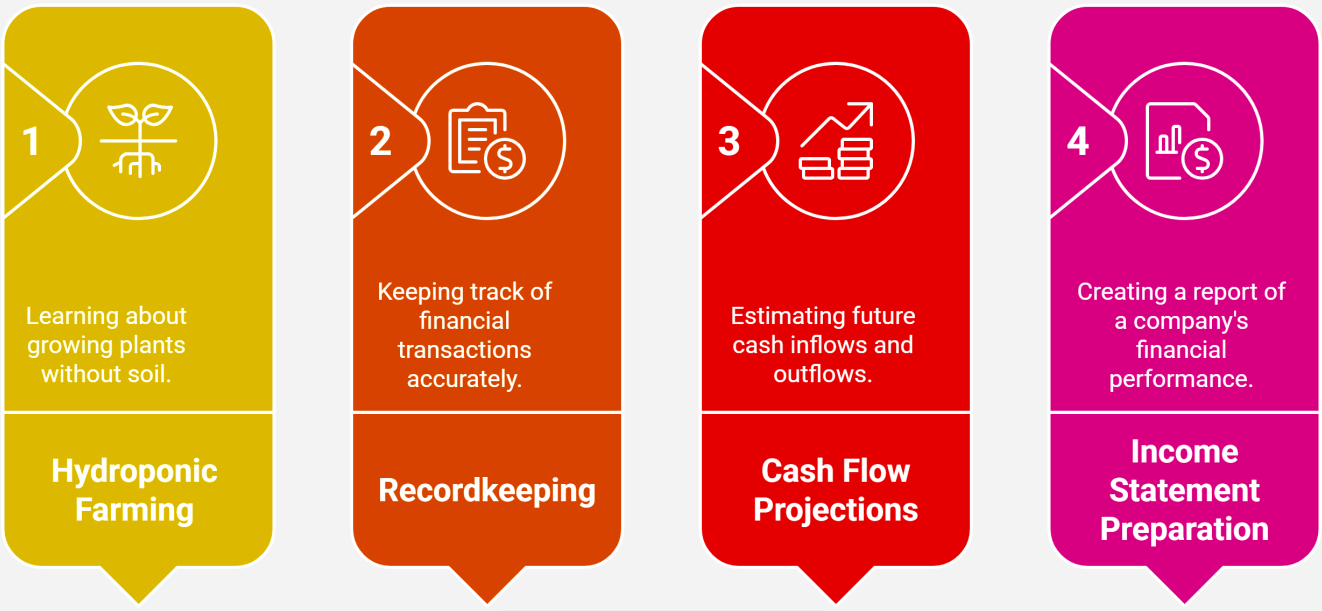


Impactful Initiatives and Partnerships





Youth and Families Program Training Events and Participants by State



Training Topics

Marketing and Exports Program Training

1 — Yap
Two events were held in Yap with 67 participants.

2 — Chuuk
Seven events were held in Chuuk with 98 participants.

3 — Pohnpei
Twelve events were held in Pohnpei with 53 participants.

4 — Total
A total of 21 events were held with 218 participants.

Key Elements in Product Financial Viability

High-Quality Preservation

Ensures product longevity despite low consumer appeal.

Effective Pricing Strategy

Maximizes revenue by attracting consumers with competitive pricing.

Basic Packaging

Fails to attract consumers and lacks financial benefit.

Attractive Labeling

Draws consumers but doesn't significantly boost financial outcomes.

YAP

AQUACULTURE RESEARCH

Project: Studies on the Genetic Variation of *Holothuria scabra* and Integrated Selective Breeding Program for Sustainable Aquaculture System in Micronesia

Activities

- Produced **six (6) batches** of sandfish sea cucumber (*Holothuria scabra*) at the CRE–Yap hatchery to support community-based aquaculture initiatives in Yap and other states.
- Stocked juveniles from batches #1 to #3 in floating cages adjacent to the CRE hatchery; a total of **twenty-five (25) cages** were stocked with **12,500 juveniles.**
- Maintained batches #4 to #6 in raceway tanks within the CRE hatchery for continued grow-out and research.
- Conducted the **seventh (7th) spawning attempt** on July 10, 2025; no sandfish spawning occurred during this attempt.
- Maintained and monitored **broodstock inventory** for ongoing research and production: 78 individuals from two community farms.

Algal culture at Yap Hatchery—Essential feed source for sandfish sea cucumber production

Accomplishments

- Successfully **produced six (6) batches** of sandfish sea cucumber, ensuring a reliable supply of juveniles for both community distribution and research activities.
- **Stocked 12,500 juveniles** in twenty-five (25) floating cages, advancing the grow-out phase and supporting potential future harvests.
- Sustained the health and viability of a limited broodstock population, ensuring continued availability for hatchery operations despite the absence of spawning during the most recent (7^{th}) attempt.
- **Strengthened collaborative partnerships** with local farms for broodstock sourcing, enhancing resource availability for the research project.

Also, as part of the project to study the diversity of sandfish sea cucumber and the integrated breeding program, several surveys were conducted across Yap, Pohnpei and Kosrae.

Activities

Yap

- **Conducted surveys in two villages** of Dalipebinaw Municipality, focusing on seagrass and seaweed habitats.
- Surveyed seagrass along Chol, Maap communities and **identified suitable farm sites** for sea cucumbers. Five community members participated.
- Conducted a **follow-up survey** in the same two villages of Dalipebinaw Municipality, assessing seagrass and seaweed habitats.
- Surveyed **three villages of Weloy Municipality** in seagrass and seaweed areas. Two community members joined the survey team.

Pohnpei

- Conducted surveys and farmer visits across Pohnpei.
- Collected broodstock from:
  - Two active farms: 15 pcs from a female-owned farm and 16 from another farm.
  - One non-active farm (wild population): 48 pcs.
- Discussed broodstock sourcing and community engagement with local fishermen.

Kosrae

- Consulted with Mr. Rolner L. Joe (Director, Department of Resources and Economic Affairs) and Mr. Bruno Ned (Director of Fisheries) regarding NIFA-funded research projects on sandfish sea cucumber, rabbitfish, mud crab, and giant clam.
- Met with Mr. Steven Palik (Director, Kosrae Island Resource Management Authority – KIRMA) and staff on the same research initiatives.
- Conducted sea cucumber survey in Lelu Municipality near the Treelodge Hotel with assistance Kosrae CRE staff and two KIRMA staff members.

Accomplishments

- Completed **eight survey events** across Yap, Pohnpei, and Kosrae States, covering multiple municipalities and diverse habitat types (seagrass and seaweed areas).
- Engaged **local community members** in surveys: five participants in Maap, two in Weloy, and multiple fishermen in Pohnpei, strengthening community involvement in aquaculture development.
- Identified **new suitable farm sites** for sea cucumber culture in Maap Municipality.
- Collected a total of **79 sandfish sea cucumber broodstock** (31 from active farms and 48 from wild populations) for the Nett-Point hatchery in Pohnpei, enhancing genetic diversity for breeding programs.
- Advanced planning for a **selective breeding program** to prevent inbreeding and support commercial-scale hatchery production and restocking.
- Strengthened inter-agency collaboration through meetings with **three state-level fisheries and resource management authorities** (DREA, Fisheries, and KIRMA).
- Enhanced knowledge sharing among partner agencies and local farmers on sustainable aquaculture practices for *H. scabra*.

Extension Specialist Activities

1. **Sea Cucumber and Giant Clam Activities**

   Target Audience: Gilman Elementary School Students

   The activity introduced students to aquaculture resources at Yap-CRE, with displays of four sea cucumber species (*Holothuria scabra*, *H. atra*, *H. edulis*, and *Stichopus vastus*), and giant clams.

   - Students learned about sea cucumber species found on Yap Island, including their life cycles and ecological significance.
   - Poster presentations were used to explain the life cycles of sea cucumbers and giant clams, hatchery spawning, larval rearing, and grow-out techniques.

   Participants: 30 (26 students, 4 adults)

2. **Hatchery Tour and Aquaculture Learning**

   Target Audience: Yap Catholic High School Students

   The tour provided hands-on exposure to CRE hatchery operations, focusing on sea cucumber and giant clam research projects.

   - Topics included laboratory algae culture, seawater system operations, and spawning of *Hippopus hippopus* and *Tridacna derasa*.
   - Students observed sea cucumber larvae at different developmental stages under microscopes.
   - Demonstration included juvenile sandfish in raceway tanks, floating cage grow-out systems, and culture of microalgae and macroalgae (green seaweed, sea grape, and brown seaweed).

Participants: 27 students

3. **Hatchery Tour and Aquaculture Learning**

Target Audience: Yap Public Library Summer Reading Group

Students were introduced to CRE hatchery systems, sandfish sea cucumber and giant clam projects, and other aquaculture research activities.

- Topics included algal cultures, seawater system operations, and spawning of sea cucumbers and giant clams.
- Hands-on learning included observation of broodstock sea cucumbers, giant clams, and marine snails.
- Students learned hatchery spawning, larval rearing, and grow-out techniques for sandfish juveniles in raceway tanks and floating cage systems.

Participants: 19 students

4. Hatchery Tour for Visiting Researcher

Target Audience: Visiting Aquaculture Researcher from Kosrae

The tour provided an overview of CRE hatchery operations for sandfish sea cucumber and giant clam production.

- Covered algae culture in the laboratory, seawater system operations, spawning of *Hippopus hippopus* and *Tridacna derasa*, larval rearing, and grow-out systems for sandfish juveniles in raceway tanks and floating cages.
- Shared technical details on ongoing research and potential applications for aquaculture development in other FSM states.

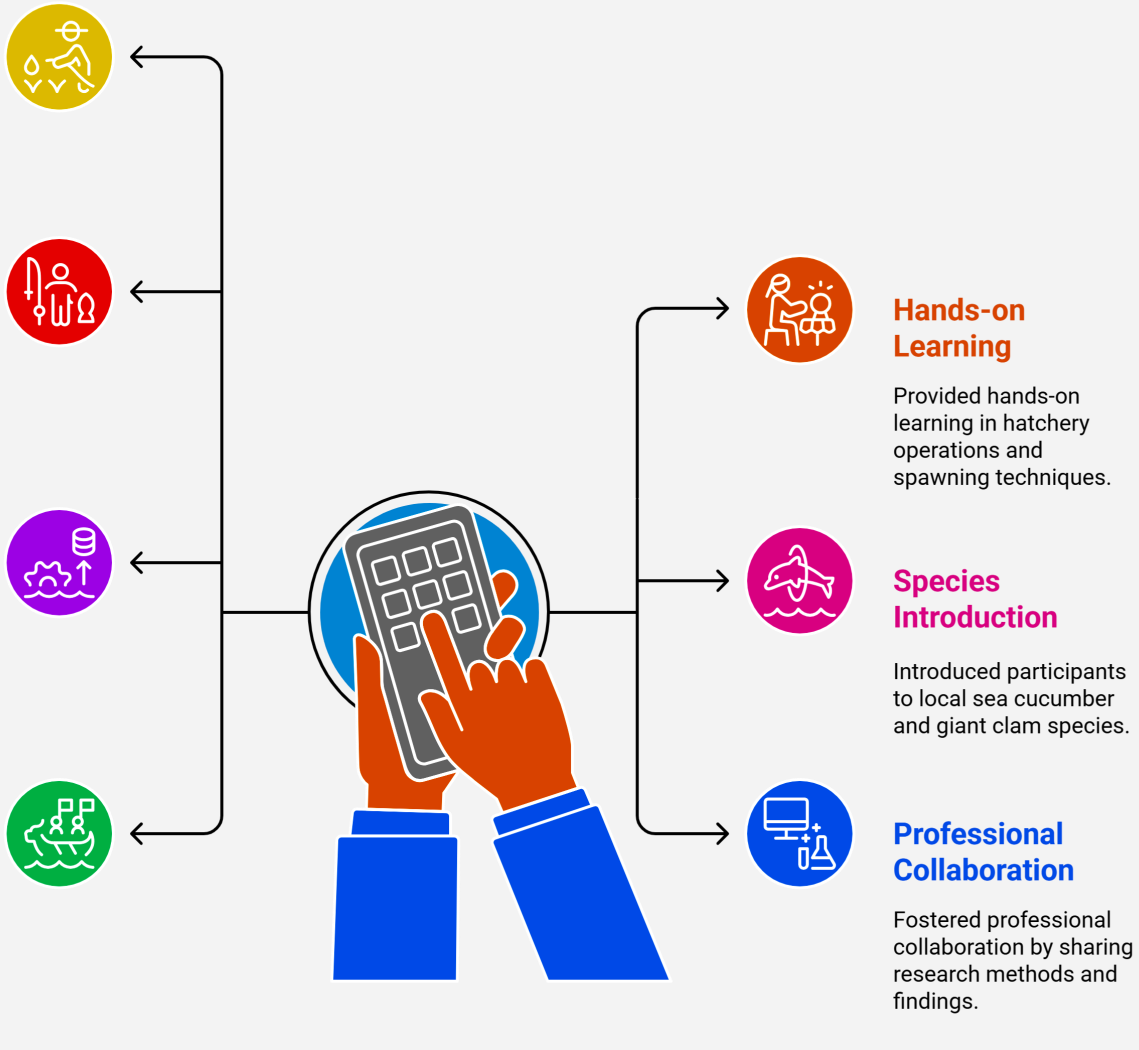
Participants: 1 female researcher.

Accomplishments

- Reached a total of **77 participants** across four events, increasing awareness and knowledge of aquaculture in the FSM.
- Provided **hands-on learning experiences** in hatchery operations, including algae culture, seawater system management, and spawning techniques for *Holothuria scabra*, *Hippopus hippopus*, and *Tridacna derasa*.

- Strengthened **youth engagement** in aquaculture, with **68 out of 77 participants** being students from elementary through high school.
- Introduced participants to **local sea cucumber and giant clam species**, enhancing their understanding of biodiversity and sustainable resource management in Yap waters.
- Demonstrated **hatchery-to-grow-out processes**, including larval rearing in raceway tanks and floating cage systems, contributing to participants' applied aquaculture knowledge.
- Fostered **professional collaboration** by sharing hatchery research methods and findings with a visiting aquaculture researcher from Kosrae, promoting inter-state capacity building.
- Promoted **community involvement in resource stewardship** by linking marine biology concepts with FSM's sustainable aquaculture development goals.

Aquaculture Program Accomplishments



AGRONOMY RESEARCH

Project: Bush Pepper Production as a Cash Crop for Small Scale Growers

Activities

The Hatch project is advancing toward developing **standardized propagation and cultivation methods** for bush pepper (*Piper nigrum* L.) to establish it as a viable and sustainable crop for urban and small-scale farmers in the FSM. Bush pepper offers a **sustainable and user-friendly alternative** to conventional black pepper vines, with the potential to lower household expenses and create opportunities for surplus production and export.

Key research activities:

- Initiated **pot experiments** to evaluate the growth performance of lateral branch cuttings from mature vines in various growing media combinations.
- Testing different **cocopith and potting mix ratios**, alongside native soil blends, to identify optimal rooting conditions.

Sharing insights at the UOG Black Pepper Forum

- Applying and evaluating **rooting hormones** to enhance cutting survival rates.
- Conducting **periodic evaluations** after each experimental cycle to refine propagation protocols.

Preliminary findings from the **first experimental cycle** revealed:

- A **41% survival rate** in cuttings grown in a **3:1 cocopeat-to-potting soil mix.**
- A **72% survival rate** in cuttings grown in an **equal mixture of native and potting soil.**

In addition to local research activities, the project engaged in **regional academic exchange and collaboration**:

- From **June 18–21, 2025**, the Researcher visited the **University of Guam's College of Natural and Applied Sciences (CNAS)** to provide technical guidance for black pepper cultivation trials.
- Conducted **field visits** to UOG's Yigo Agricultural Experiment Station, a veteran's farm, and a private farm to assess pepper propagation, shade requirements, nutrient management, and climate-resilient practices.
- Delivered a **technical presentation** titled *"Black Pepper – Science, Cultivation, and Global Perspectives"* during the **Black Pepper Forum**, serving as **Chief Guest and presenter.**
- Produced and distributed **an informational brochure on "Black Pepper Cultivation** in Islands" during the forum to enhance farmer knowledge and promote best practices in tropical pepper production.

Accomplishments

- Developing **evidence-based propagation insights**, identifying promising growing media mixes with survival rates up to **72%.**
- Advancing toward a **standardized bush pepper cultivation method** suitable for smallholder and urban farmers in the FSM.
- Strengthened **regional collaboration** by partnering with the University of Guam on tropical crop research and climate adaptation strategies.

- Shared **scientific knowledge, best practices, and the newly developed black pepper cultivation brochure** with Guam's agricultural stakeholders, contributing to ongoing black pepper research in the Pacific.
- Fostered academic ties between **COM-FSM and UOG**, paving the way for **future joint research, training, and capacity-building initiatives** in tropical agriculture.

EXTENSION PROGRAMS

Crop Production

Activities

- Conducted targeted outreach to **10 participants** (a mix of adults and youth) from local communities to strengthen household food systems and address food insecurity.
- Delivered **hands-on technical guidance** in vegetable gardening practices.
- Provided essential farming inputs to all participants, including:
  - Chicken manure
  - Fertilizer
  - Vegetable seeds
- Paired distribution of supplies with **individual follow-up support** to reinforce proper agricultural practices and ensure practical application.

Accomplishments

- Directly supported **10 households** in enhancing their vegetable production capacity.
- Improved participant skills in sustainable vegetable gardening through personalized, hands-on training.
- Enabled households to **increase availability and access** to nutritious, locally grown produce.
- Reduced reliance on imported food by promoting local crop production, contributing to **greater community resilience**.
- Encouraged continued engagement from **returning participants**, reflecting increased skill adoption and commitment to farming.
- Contributed to **long-term food security** in Yap by fostering self-sufficiency and sustainable household-level food systems.

Poultry Program

Activities

- Provided technical follow-up and advisory support to 19 poultry farmers actively engaged in local poultry production.
- Delivered individualized guidance on:
  - Egg incubation practices
  - Flock management
  - Small-scale operation expansion

- Encouraged farmers to troubleshoot challenges and adopt improved techniques to boost hatch rates and overall productivity.

Accomplishments

- Farmers successfully hatched a total of 122 eggs during the reporting period.
- Distributed 100 chicks to the Green Climate Fund (GCF) project site to strengthen a community-based poultry initiative.
- Provided 22 chicks to a private farmer to support the establishment of a new poultry operation.
- Expanded poultry production capacity at both community and individual levels, contributing to increased local food availability.
- Enhanced farmer skills and knowledge in incubation and flock management, resulting in improved hatch rates.
- Advanced program goals of reducing reliance on imported poultry products and strengthening local food systems.

Swine Program

Activities

- Delivered one-on-one advisory support to two adult male farmers engaged in swine production.
- Provided technical guidance on:
  - Maintaining clean pigpens
  - Ensuring access to clean drinking water
  - Supplying proper nutrition
  - Constructing adequate shelter to protect animals from sun and harsh weather
- Emphasized the role of these practices in improving pig health, survival rates, and overall productivity.

Accomplishments

- Improved knowledge and skills of two local swine farmers in sustainable swine management under Yap's local conditions.
- Encouraged the adoption of better animal care and housing practices, directly supporting healthier and more productive swine herds.
- Contributed to long-term program goals of reducing reliance on imported pork and increasing local meat production.
- Strengthened the potential for higher household incomes through improved swine productivity.
- Advanced food security objectives for rural communities in Yap by promoting sustainable livestock management.

Aquaculture Program

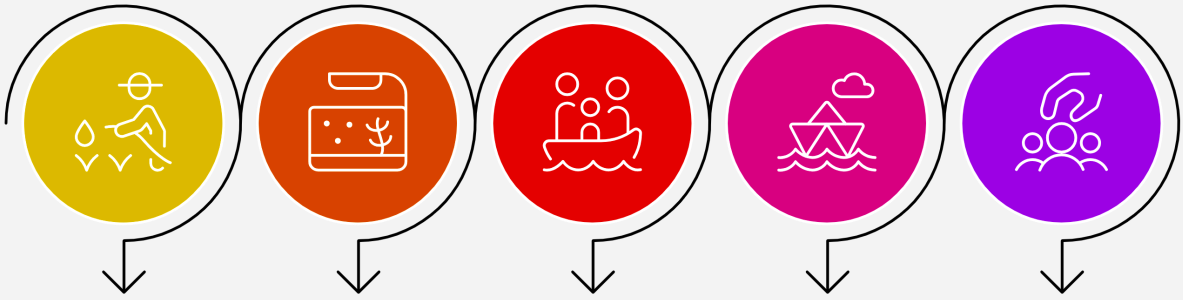
Activities

- **Giant Clam Spawning and Training**
  - Conducted a giant clam (*Hippopus hippopus*) spawning session with **five community participants.**
  - Provided hands-on training in spawning induction, larval rearing, and early-stage husbandry.
- **Larval Production**
  - Achieved successful production of an estimated **640,000 giant clam larvae** for grow-out into juveniles.
  - Planned distribution of juveniles to communities for **conservation-focused farming.**
- **Youth Engagement through Hatchery Tours** (reported on Pages 15-16**).**

Accomplishments

- Strengthened **local aquaculture expertise** by training **five community members** in giant clam spawning and larval rearing.
- Produced an estimated **640,000 giant clam larvae**, contributing to community-based conservation and aquaculture efforts.
- Provided **real-world, hands-on learning experiences** to **46 youth** (27 high school students + 19 children/youth) on marine resource management.
- Increased awareness among youth of sustainable aquaculture as both a **livelihood opportunity** and a **marine conservation strategy.**
- Advanced community readiness for future **income-generating aquaculture activities** while enhancing **food security** in Yap.

Aquaculture accomplishments



Aquaculture expertise

Trained community members in clam rearing. Strengthened local aquaculture knowledge.

Larvae production

Produced approximately 640,000 giant clam larvae. Supported conservation and aquaculture.

Hands-on learning

Provided real-world marine resource management experiences. Forty-six youths participated.

Increased awareness

Sustainable aquaculture awareness increased among youth. Livelihood and conservation strategy.

Community readiness

Advanced community readiness for income-generating activities. Enhanced food security in Yap.

Youth Program

Activities

- **Overall Engagement**
  - Reached **over 145 participants**, including **40 returning individuals**, through hands-on activities, mentoring, and outreach.
  - Focus areas: vegetable gardening, entrepreneurship, literacy and numeracy skills, and craft-making.
- **Vegetable Gardening & Micro-Enterprise**
  - Supported **14 tenth-grade students at FCA School** in launching a crop-based micro-enterprise to raise funds for their senior year.
  - Provided home gardeners with technical guidance to improve crop production for household use, sharing, and income generation.
  - Encouraged reinvestment of profits into garden expansion, fostering self-reliance.
- **School Outreach**
  - Introduced gardening to **70 new students** at Yap Catholic High School.
  - Introduced craft making to **30 students** at Gilman School
  - Delivered educational presentations resulting in a **96% increase in gardening knowledge** among participants.
- **Mentoring & Skills Development**
  - Provided **3 Upward Bound students** with literacy and numeracy sessions, resulting in

measurable academic improvements.

- Conducted **3 craft-making workshops** to build practical skills (**28 participants**) , confidence, and community-sharing capacity.

Accomplishments

- Engaged **145+ participants**, including **40 returning youth and families**, in activities that combined agriculture, entrepreneurship, and personal development.
- Launched a successful **student-led micro-enterprise** at FCA School, generating funds for academic purposes and teaching real-world business skills.
- Enabled home gardeners to improve household nutrition, share produce, and earn income, with several reinvesting profits to expand production.
- Reached **70 new students** at Yap Catholic High School, achieving a **96% knowledge gain** in gardening skills.
- Strengthened literacy and numeracy among Upward Bound students, contributing to improved academic performance.
- Built youth confidence and community connection through **craft-making workshops**, enhancing both entrepreneurial and social skills.
- Advanced long-term goals of **youth empowerment, self-reliance, and sustainable community development** in Yap.

Learning, Growing, Leading through healthy activities

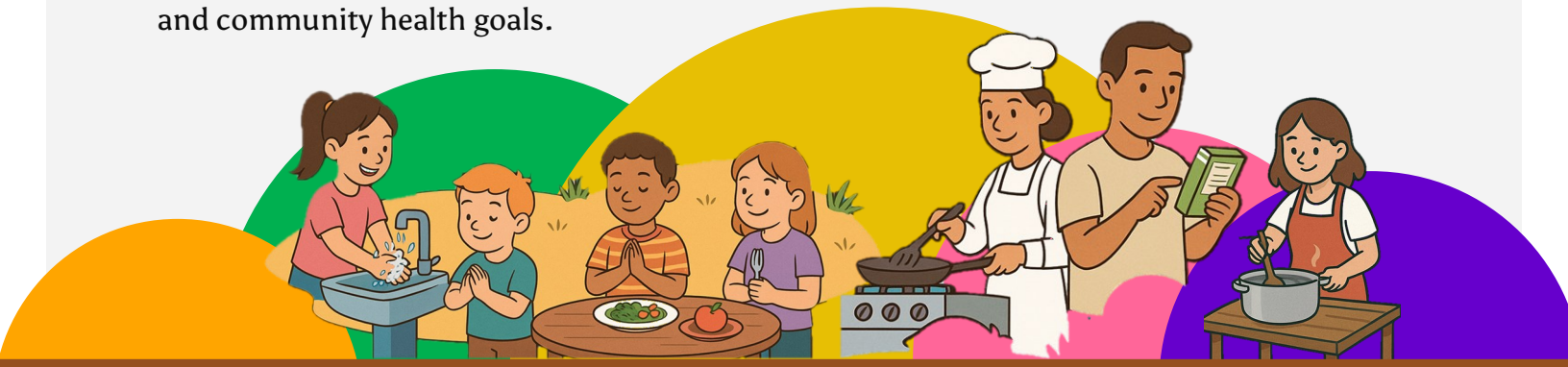
Food and Water Safety Program

Activities

- **Food Handling and Sanitation Training**
  - Conducted training for **10 returning participants** (**8 adults** and **2 youth**) on proper hygiene, clean food preparation areas, and safe handling practices.
- **Youth Outreach**
  - Delivered a food and water safety presentation at the **Yap Public Library** for **29 children (Summer Reading Program)** aged **5–13.**
  - Covered personal hygiene, safe water use, and food safety basics.
  - Included an **interactive hand-washing exercise** to reinforce learning.
- **Traditional Food Processing & Safety**
  - In **Ruu community**, trained **9 participants** in safe processing of banana, breadfruit, and tapioca into flour, incorporating safe handling, drying, and storage methods.
  - Conducted a recruitment session with the **Lebinaw Women's Group**, where **9 members** expressed interest in future training on hygiene, sanitation, and safe packaging.

Accomplishments

- Engaged a total of **57 participants** across multiple food and water safety activities.
- Reinforced safe food handling and sanitation practices among **10 returning participants**, demonstrating continued commitment to best practices.
- Provided **29 children** with foundational hygiene and food safety skills, promoting lifelong healthy habits.
- Strengthened cultural sustainability by training **9 community members** in traditional food processing combined with modern safety techniques.
- Expanded future training reach by recruiting **9 members** from the Lebinaw Women's Group for upcoming sessions.
- Supported **public health, food security, and income generation** by promoting safe local food production methods.
- Integrated **traditional knowledge with modern safety standards**, bridging cultural heritage and community health goals.



Activities

- **Overall Outreach**
  - Reached a total of **137 participants** across communities in **Pluto, Bahai, and Ablul** through nutrition-focused training, cooking demonstrations, and technical assistance.
- **Training Content**
  - Covered key nutrition and food safety topics including:
    - MyPlate guidelines
    - Portion control
    - Importance of vitamins
    - Safe food handling and hygiene practices
  - Provided interactive lessons for youth on hygiene, food handling, and physical activity.
- **Cooking Demonstrations**
  - Featured healthy, locally inspired recipes such as coconut desserts, fish patties, and chicken patties.

Sharing skills, recipes, and nutrition knowledge with the community

- Emphasized cooking techniques that promote nutrient retention and healthier eating habits.

- **Large Community Session – Ablul**
  - Hosted a single-session event for **70 women and families** focusing on practical cooking, nutrition, and **safe stove use**.
- **Gardening Support**
  - Promoted household gardening and the use of **locally grown foods** to improve nutrition and reduce dependence on imported products.
- **Partnerships**
  - Collaborated with the **State Hospital Wellness Clinic** and the **Gagil Local Health Council** to expand program reach and address community nutrition needs.

Accomplishments

- Educated **137 community members**, including **70 women and families in Ablul**, on nutrition, food safety, and healthy cooking practices.
- Improved community understanding of **MyPlate** guidelines, portion control, and the role of vitamins in daily diets.
- Promoted **locally sourced, nutrient-rich foods** through both cooking demonstrations and gardening support.
- Strengthened food safety awareness among both adults and youth through hands-on hygiene and safe food handling activities.
- Enhanced youth engagement in nutrition and physical activity, encouraging healthy habits from an early age.
- Strengthened local collaboration with **two health-focused partners**, broadening the program's impact and sustainability.
- Contributed to long-term **food security** in Yap by promoting household gardening, healthier diets, and safer cooking methods.

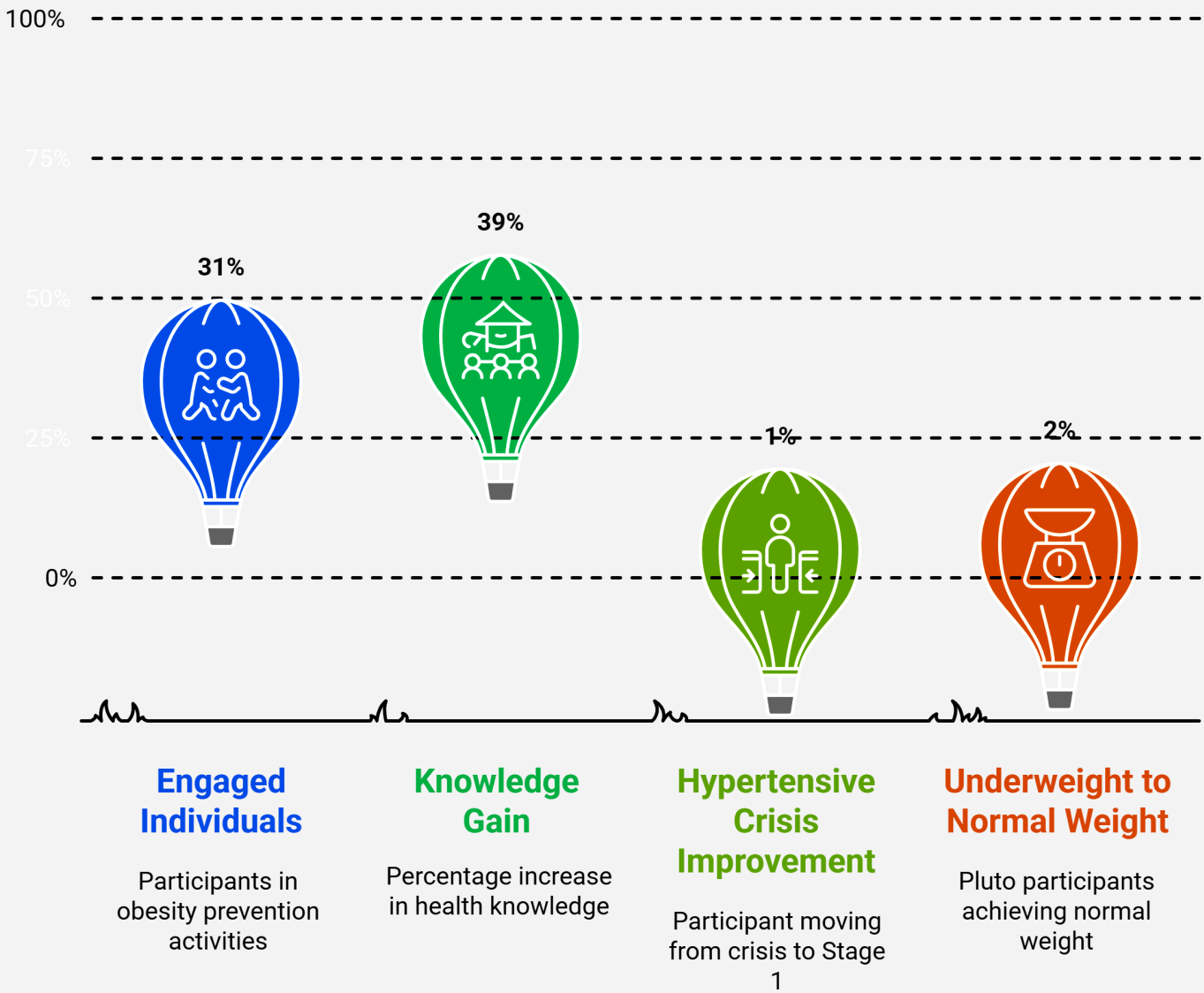
Obesity Prevention Program

Activities

- **Overall Outreach**
  - Reached a Reached **31 participants**: **24 from Bahai** and **7 from Pluto** through health presentations, screenings, and physical activities.
- **Bahai Community**
  - Engaged **11 new participants** in an obesity prevention session, resulting in a **39% increase in knowledge**.
  - Conducted **BMI and blood pressure screenings**, identifying various health risk levels.
  - Implemented **weekly monitoring** of health indicators, with one participant improving from *hypertensive crisis* to *Stage 1 hypertension*.
- **Pluto Community**
  - Supported participants through physical activities, including the "Tunnel" game, to encourage active lifestyles.
  - Conducted BMI tracking and health monitoring.
- **Reinforcement Activities**
  - Integrated key nutrition and healthy living lessons from **EFNEP** to strengthen obesity prevention messaging.
  - Encouraged participants to set personal goals for lowering BMI and blood pressure.

Accomplishments

- Engaged **31 individuals** in targeted obesity prevention activities combining education, monitoring, and exercise.
- Achieved a **39% knowledge gain** among **11 new Bahai participants** following obesity prevention training.
- Detected and addressed health risks through BMI and blood pressure screenings, enabling early intervention.
- Recorded measurable health improvements, including:
  - **1 participant in Bahai improving from hypertensive crisis to Stage 1 hypertension.**
  - **2 Pluto participants improving from *underweight* to *normal weight*.**
- Increased awareness and adoption of healthier habits through integration with **EFNEP nutrition lessons**.
- Strengthened community engagement in **self-monitoring and active lifestyle practices**, supporting long-term health goals.



Marketing & Export Program

Activities

- **Business Support & Technical Assistance**
  - Provided training and advisory services on **cost-based pricing** and **vendor connections** to support business growth for local farmers, producers, and youth entrepreneurs.
- **Youth Entrepreneurship**
  - Supported **1 youth** in expanding the market for craft jewelry, resulting in **10 new customers** and **$325 in sales** in one month.
  - Guided **2 youth** to use their home gardens for household consumption and to generate side income through surplus produce sales.
- **Agriculture Sales**
  - Assisted **1 household of 5 members** in selling **400 Chinese cabbages** to two local stores, generating significant local market income.
- **Poultry Product Marketing**
  - Provided marketing guidance to youth and adult poultry farmers.
  - **3 farmers** sold a combined **52 dozen eggs**, earning **$433 total** at prices ranging from **$7.50 to $10.00 per dozen**.
- **Capacity Building Plans**
  - Initiated planning for a **business development training** to further strengthen entrepreneurial skills.

Accomplishments

- Expanded market reach and income generation for **multiple youth and farmer participants** through tailored marketing and pricing support.
- Enabled **1 youth entrepreneur** to secure **10 new customers** and generate **$325** from craft jewelry sales in one month.
- Supported **2 youth gardeners** in turning surplus produce into supplemental household income.
- Facilitated a large-scale agricultural sale of **400 Chinese cabbages** by **1 household of 5**, demonstrating strong local demand for fresh produce.
- Boosted poultry product profitability for **3 farmers**, selling **52 dozen eggs** for a combined **$433**.
- Strengthened marketing skills across craft, agriculture, and poultry sectors, directly increasing income potential.
- Set the stage for **future business development training** to further enhance local entrepreneurship and market readiness.

Activities

The **Climate Change Challenges** outreach Program delivered tailored climate-smart gardening training and technical assistance to strengthen local food systems, enhance nutritional security, and support sustainable livelihoods. During the reporting period:

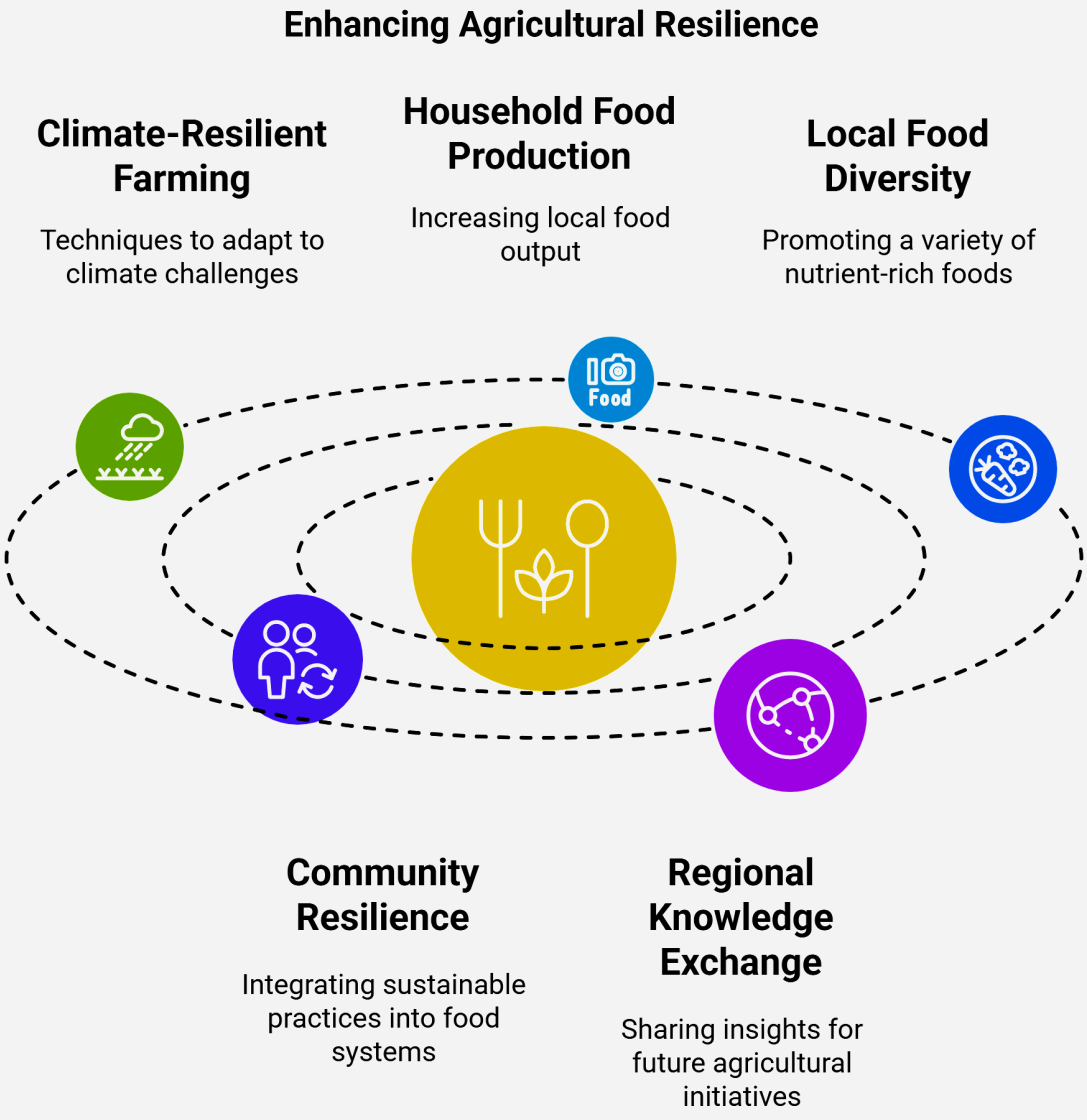
- **26 community members** (**11 men, 15 women**) received **one-on-one training** in climate-resilient farming techniques, including compost preparation, container gardening, seed germination, transplanting, aftercare, and staple crop production.
- Training sessions integrated **traditional knowledge** with **climate-smart agricultural practices**, equipping participants with practical skills to adapt to changing environmental conditions.

Atoll communities engaged in hands-on training to strengthen staple crops production

- Delivered a public lecture titled *"Growing Food in a Changing Climate – Lessons from Community-Based Climate Change Adaptation Projects"* highlighting low-cost, scalable crop production methods for vulnerable island ecosystems.
- Engaged with academic and extension partners, including the **University of Guam (UOG)**, to share field-based lessons and best practices from Micronesian communities.

Accomplishments

- Improved participant capacity to **apply climate-resilient farming techniques**, resulting in greater potential for **household food production** and reduced reliance on imported vegetables.
- Strengthened **local food diversity** and nutritional security by promoting nutrient-rich vegetables and adaptable staple crops.
- Enhanced **community resilience** by integrating sustainable agricultural practices into traditional food systems.
- Fostered **regional knowledge exchange**—UOG acknowledged Dr. Muru's contributions as valuable for guiding future **agricultural research and outreach** initiatives across island communities.



Italian Project Update

Activities

Between May and July 2025, field activities under the Italian Project focused on empowering local households through practical, hands-on agricultural training, targeted technical assistance, and consistent follow-up support. Working side-by-side with participants, field assistants guided the establishment, maintenance, and harvesting of home gardens, placing particular emphasis on sweet potato and soft taro production to strengthen food security and promote sustainable livelihoods.

Key activities included:

- Conducting garden visits to monitor crop progress, identify pest and weed issues, and provide timely advice on crop management.
- Coordinating planting schedules and assisting with tilling, bed preparation, composting, and planting.
- Delivering training sessions for new clients on site selection, compost preparation, fertilization, side dressing, and crop maintenance.
- Monitoring crop growth weekly, replacing dead plants to maintain optimal yields.
- Assisting with harvesting, including cleaning, weighing, and documenting produce.
- Preparing newly harvested plots for replanting and conducting bi-weekly side dressing for four weeks after planting.
- During this period:
  - **766 sweet potato cuttings** and **330 soft taro plants** were established in client gardens.
  - Gardens typically contained **3–4 beds** dedicated to either sweet potato and soft taro.
- In parallel, infrastructure improvements were completed to strengthen climate-resilient water systems:
  - Roof renovations and rainwater harvesting system upgrades were finalized at **three atoll community settlement houses** in **Gitam, Daboch, and Ablul (Gargey)**.
  - Works included repairing and refurbishing existing infrastructure to ensure efficient and reliable rainwater collection and storage, directly improving **water security** for displaced atoll communities.

Accomplishments

- **156 clients** participated in the crop production activities during this period.
- Communities harvested **272 lbs. of sweet potato** and **106 lbs. of soft taro**, with all produce returned to clients for household consumption, directly contributing to local food security.
- Enhanced community knowledge and skills in compost preparation, planting techniques, and sustainable crop management.

- Strengthened household self-reliance through continuous technical guidance and the promotion of low-cost, sustainable gardening practices.
- Completed infrastructure upgrades to ensure the **efficient and sustainable collection and storage of rainwater**, improving water access and resilience in three communities.
- Supported the project's broader goal of enhancing **climate-resilient agriculture and water security** for Yap's displaced atoll communities.






Newly renovated rooftops with integrated rainwater harvesting systems and storage tanks, enhancing water security for three community settlements under the Italian Project

EXTENSION PROGRAMS

Crop Production

Activities

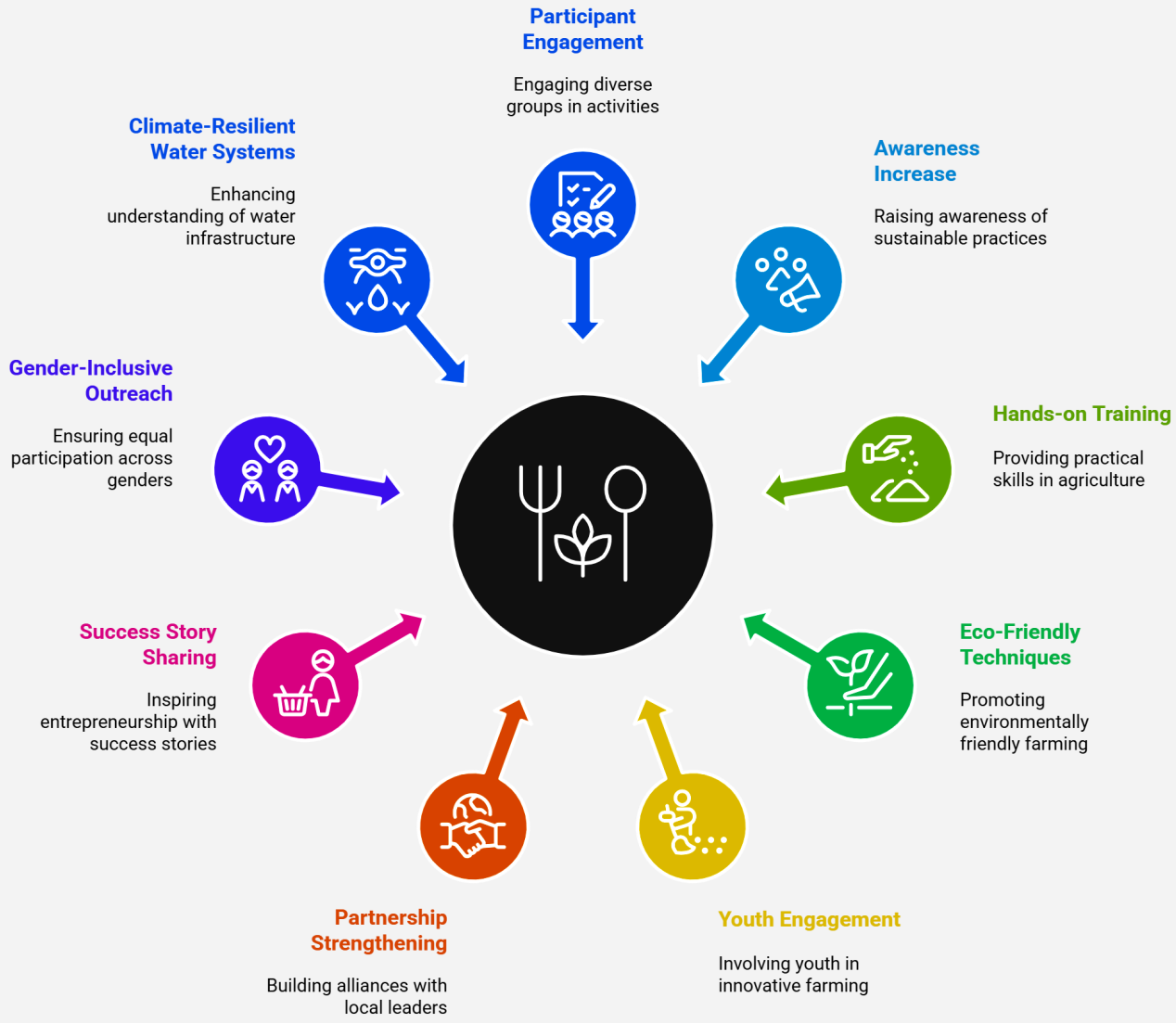
- From May to July 2025, the program implemented a series of agriculture and outreach activities to promote climate-smart farming, sustainable production, and community engagement across multiple islands in Chuuk. On **Etten Island**, an agriculture session on enhancing local food production engaged **39 participants** (**9 female**, **30 male**) through a PowerPoint presentation and hands-on training focused on home gardening and planting pineapples from crown leaves.
- In **Tonoas Municipality**, a CRE awareness outreach introduced the agriculture program, including climate-smart agriculture, to **16 men**, comprising the Mayor and all village chiefs. The session also featured the success story of a local woman farmer who created her market and earns **$600–$800 per day** from selling local crops, inspiring community members to pursue income-generating agriculture.
- A coconut coir planting media preparation demonstration was held at the **Chuuk Department of Agriculture**, attended by the Acting Director of Agriculture and **7 COM-FSM Chuuk students** (**5 male**, **2 female**). Participants received hands-on training in processing coconut husks into soil medium, promoting eco-friendly, climate-resilient farming techniques and strengthening student engagement in sustainable agriculture.
- A second CRE awareness outreach in **Tonoas Island Municipality** reached **16 men**, providing an overview of all CRE programs, including climate-smart agriculture and food processing. Another outreach session in **Uman Island** engaged the IMC Women's Group, extending awareness of CRE programs and services to a women-led community audience.
- CRE collaborated with **IOM** and **UNICEF** to provide technical assistance for a workshop on **"Building Climate-Resilient Water Systems."** The session engaged **18 participants** (**10 male**, **8 female**) and covered strategies for designing, maintaining, and managing water systems that can withstand climate-related impacts.

Accomplishments

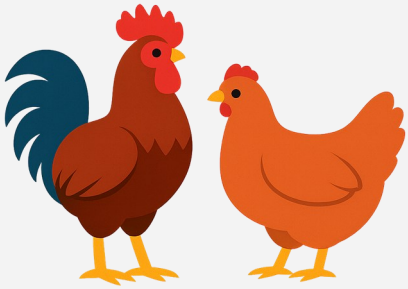
- **Total Reach**: Engaged **78 participants** across five activities, including **women's groups, students, community leaders, and farmers**.
- Increased **local awareness of sustainable and climate-smart agriculture** practices across multiple islands.
- Delivered **hands-on training** in home gardening, pineapple planting, and coconut coir media preparation, improving participants' technical skills.
- Promoted **eco-friendly and climate-resilient farming techniques**, fostering sustainable resource use.

- Enhanced **youth engagement** in agriculture, with **7 students** trained in innovative soil improvement methods.
- Strengthened partnerships with **municipal leaders**, resulting in greater visibility for CRE programs and potential for broader adoption of sustainable farming.
- Shared a **high-impact local success story** of a woman farmer earning **$600–$800/day**, inspiring entrepreneurship in agriculture.
- Reached **women's groups and male-dominated leadership audiences**, ensuring gender-inclusive outreach.
- Through the workshop on climate-resilient water systems, participants enhanced their understanding of climate-resilient water infrastructure, including key aspects such as design considerations, maintenance planning, and sustainable management practices. The training strengthened local capacity to address water security challenges and promoted effective inter-agency collaboration between CRE, IOM, and UNICEF, contributing to long-term community resilience.

Achievements in Sustainable Agriculture



Poultry Program



Activities

- In July, a training session on **incubator use and hatching success** was conducted at the **College of Micronesia–FSM Chuuk Campus.** The session combined **lecture and hands-on activities**, engaging a total of **9 participants** (**2 female** and **7 male**). The training covered best practices for managing incubation, monitoring temperature and humidity, handling eggs, and improving hatch rates.

Accomplishments

- Participants gained practical skills in operating incubators and applying techniques to increase hatching success rates. The hands-on component allowed attendees to directly apply the concepts learned, boosting their confidence in implementing improved practices in their own settings. This training strengthened local capacity for small-scale poultry production and contributed to the broader goal of reducing reliance on imported poultry products.

Expanded Food and Nutrition Education Program

Activities

From May to July 2025, the **Expanded Food and Nutrition Education Program** delivered a series of targeted educational and hands-on training activities to address **food insecurity, sanitation, and safe food preparation** across multiple communities in Chuuk.

- **May 2025 – Etten Island**: Conducted **discussion, lecture, and cooking demonstrations** on topics including **food safety, proper hand washing, "10 plants to prevent diabetes," food portion control, and cooking banana chips.** The session engaged **39 participants** (**9 female**, **30 male**).
- **May 2025 – Tonoas Island Municipality**: Delivered **CRE awareness outreach** on all CRE programs, including **climate-smart agriculture** and **food processing**, to **16 male** community leaders.
- **June 2025 – Chuuk Women Council**: Provided **discussion, lecture, and hands-on training** on **food processing and preservation** to improve food safety practices.
- **July 2025 – COM-FSM Chuuk Campus & Wichap Community**: Implemented PowerPoint presentations, lectures, and discussions for **59 students** (**42 female**, **17 male**) on **food safety, hand washing, improving nutritional value, extending shelf life, and reducing food waste.**

Accomplishments

The program strengthened community knowledge and practical skills in food safety, sanitation, nutrition, and food processing. A total of 114 participants (51 female, 63 male) were reached across three months, representing diverse audiences from students to community leaders and women's

groups.

Key accomplishments included:

- Improved understanding of safe food handling, proper hygiene practices, and the health benefits of locally available plants for diabetes prevention.
- Enhanced capacity in **food preservation techniques** to extend shelf life and reduce food waste.
- Increased community engagement in **climate-smart agriculture** and sustainable food processing.
- Fostered leadership involvement by training municipal leaders, women's organizations, and students, ensuring broader application of food safety and nutrition practices in local households and community initiatives.

Aquaculture Extension Program

Activities

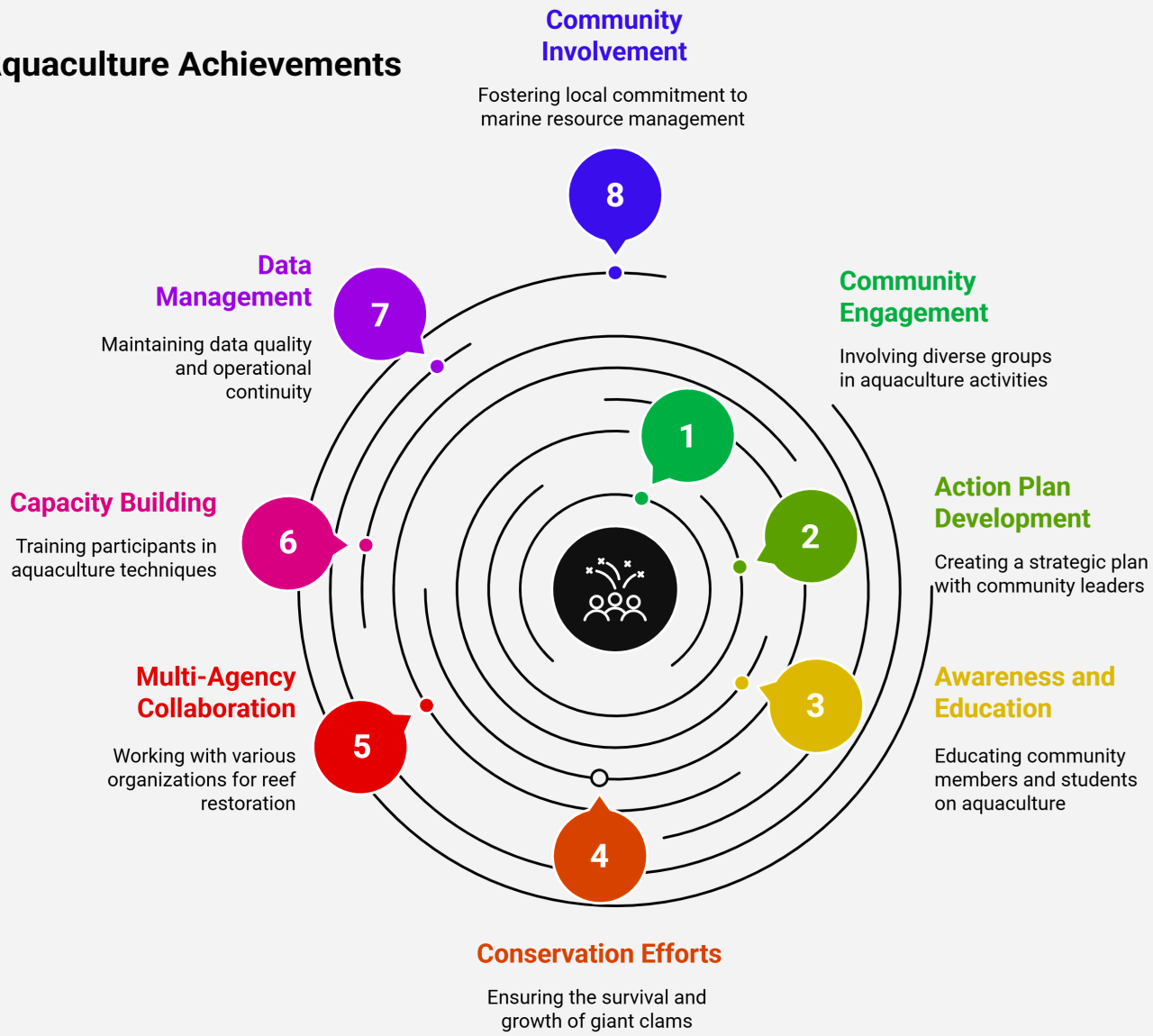
- During this reporting period, the CRE implemented a series of sustainable aquaculture outreach activities across Chuuk State, targeting community leaders, students, conservation teams, and partner agencies.
- In **Tonoas Municipality**, a meeting with the Mayor and **15 community leaders** (**16 men** total) provided a platform to present CRE's aquaculture initiatives and collaboratively develop a comprehensive action plan for future programs. The **Tunnuk community** received a lecture and technical assistance session involving **10 participants** (**6 male**, **4 female**), raising awareness on sustainable aquaculture practices.
- A **giant clam site assessment** on **Onei Island** engaged the Mayor and **5 conservation officers** to evaluate the suitability of targeted nature reserve sites for conservation activities. The assessment confirmed all sites were appropriate for giant clam farming, leading to secured support for the release of **3,600 juvenile giant clams** and plans for future CRE-led training.
- A meeting with the **CRE and The Nature Conservancy (TNC) team** brought together **3 participants** (**2 male**, **1 female**) to finalize the aquaculture work plan and schedule further site investigations. At **Chuuk Campus**, **11 students** (**3 male**, **8 female**) attended a video presentation and discussion on the role of sustainable aquaculture in food security and environmental stewardship.
- On **Onei Island**, a **rabbitfish collection training and demonstration** brought together representatives from TNC, the Department of Marine Resources (DMR), and the Marine and Environmental Research Institute of Pohnpei (MERIP), involving **21 participants** (**1 female**, **20 male**). This was followed by field work and technical assistance sessions with **10 participants** (**1 female**, **9 male**) to ensure smooth continuation of the project, maintain data quality, and update action plans.
- A **workshop on clam, sponge, and rabbitfish farming** was held with CRE, TNC, MERIP, the Onei Mayor, and DMR, training **20 participants** (**1 female**, **19 male**) in sustainable marine species cultivation and building partnerships for reef restoration.
- The program also coordinated the delivery of **3,500 juvenile giant clams** to Chuuk, ensured temporary acclimation at CRE facilities, and organized their transport and deployment to **Onei Island** with **13 participants** (**1 female**, **12 male**) from TNC, MERIP, DMR, and the Onei community.

Accomplishments

- Reached a total of **110 participants** across multiple aquaculture-related activities, representing community leaders, students, conservation officers, and partner organizations.
- Developed and adopted a **comprehensive CRE aquaculture action plan** with Tonoas community leadership.

- Increased sustainable aquaculture awareness among **10 community members** in Tunnuk and **11 Chuuk Campus students** through technical assistance and educational presentations.
- Confirmed suitability of all targeted giant clam conservation sites on Onei Island and secured community and municipal support for **3,600 juvenile giant clam releases**.
- Strengthened multi-agency collaboration with **TNC, MERIP, DMR**, and local government to support reef restoration and livelihood development.
- Built capacity of **21 participants** in rabbitfish collection techniques and **20 participants** in clam, sponge, and rabbitfish farming methods.
- Coordinated and deployed **3,500 juvenile giant clams** with high survival rates due to careful handling, temporary acclimation, and proper cage placement.
- Maintained data quality and operational continuity through follow-up fieldwork with **10 participants** on Onei Island.
- Fostered strong community involvement in conservation, ensuring long-term local commitment to marine resource management.

Aquaculture Achievements



EXTENSION PROGRAMS

Crop Production

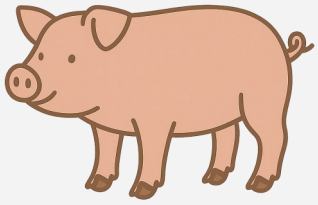
Activities

- Conducted lectures, demonstrations, and follow-up activities on composting in Pohnpei, engaging **55 clients** (youth and adults).
  - Topics included compost preparation, soil mixing using the soil ratio method, and applying compost to crops.
  - Participants received both theoretical instructions and practical demonstrations to reinforce learning.
- Delivered lectures, demonstrations, and follow-ups on compost preparation using chicken manure and soil ratio methods, reaching **55 clients**.
  - Youth and adult farmers participated in hands-on sessions, learning step-by-step compost preparation techniques.
  - Emphasis was placed on practical application to improve soil fertility and crop productivity.
- Conducted follow-up visits, awareness sessions, and lectures, including outreach efforts, engaging **51 clients**.
  - Focused on compost preparation using pig manure.
  - Provided guidance on applying compost to crops for improved yield and soil health.

Accomplishments

- Reached a **total of 161 clients** over a three-month period, building capacity in composting techniques for improved local food production.
- Provided **hands-on training** to both youth and adult farmers, ensuring skill transfer and practical application of composting methods.
- Enhanced participant knowledge on **three composting approaches**:
  - Soil ratio method
  - Chicken manure composting
  - Pig manure composting
- Increased participant confidence in applying compost to crops, with **reported improvements in crop growth** observed during follow-ups.
- Fostered stronger community interest and adoption of composting, contributing to **sustainable soil fertility management** and resilience against food insecurity.
- Created opportunities for continued knowledge sharing between communities and extension staff.

Swine Production Program



Activities

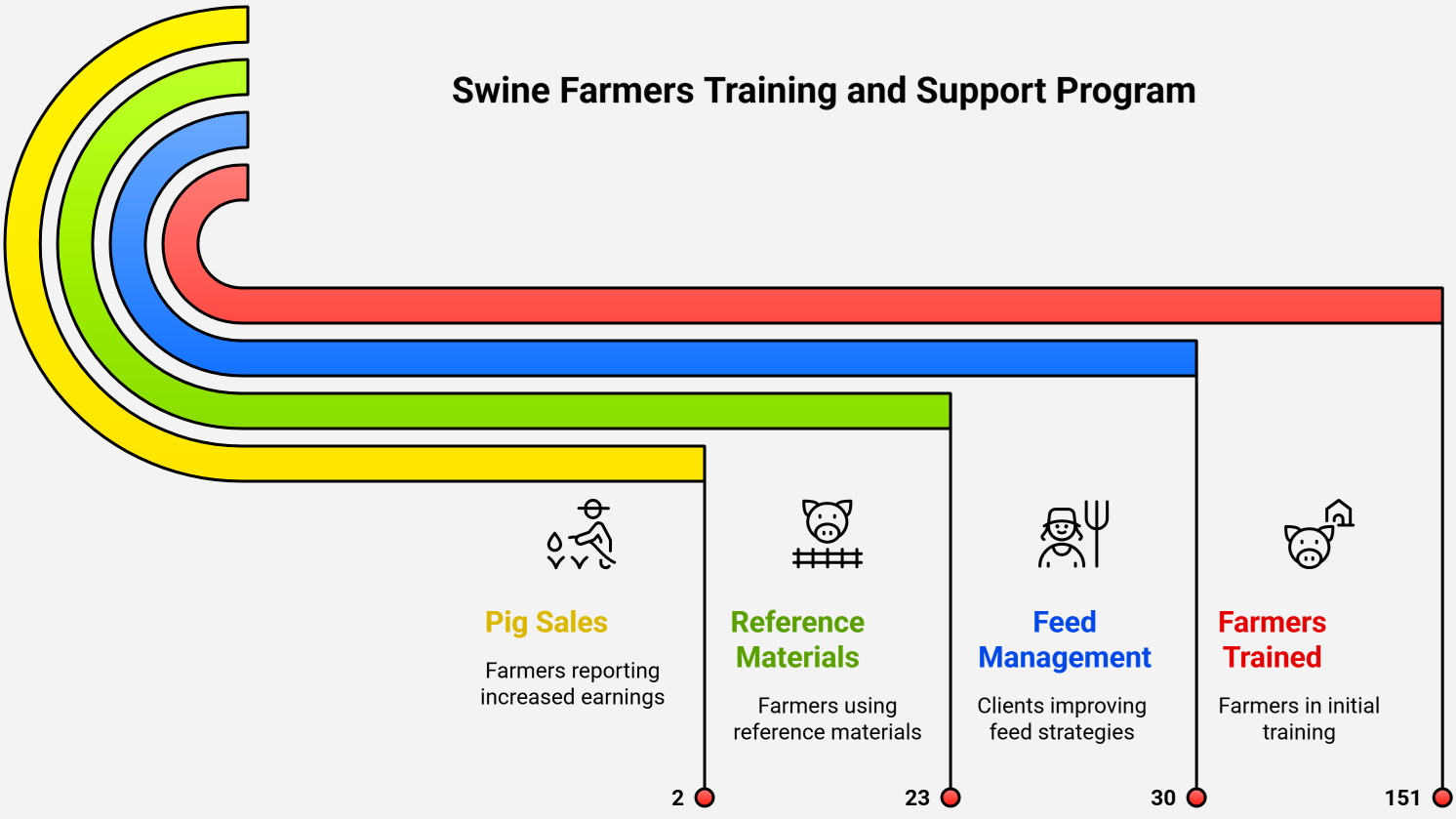
- **Farmer Engagement**
  - Provided support to a total of **151 swine farmers** over three months (**50** in May, **50** in June, and **51** in July) to improve pig health and production.
- **Animal Health Interventions**
  - Dewormed **over 80 pigs.**
  - Administered iron and tooth clipping treatments to **30 piglets.**
  - Castrated **7 piglets** using locally available disinfectants.
- **Training & Awareness Sessions**
  - Conducted **feed awareness sessions** attended by **30 clients**, focusing on nutrition for healthier pigs

- Delivered guidance on proper medication dosages, especially for returning farmers.

- **Knowledge Support Tools**
  - Distributed posters on swine dosage and weight calculation to **23 clients** for ongoing reference and improved farm management.
- **Follow-Up & Evaluation**
  - Conducted follow-up surveys in July to assess the adoption of improved practices and measure income benefits.

Accomplishments

- Reached **151 swine farmers**, most of whom were **first-time trainees**, expanding community capacity for improved swine production.
- Significantly improved animal health through the deworming of **80+ pigs**, iron and tooth clipping treatments for **30 piglets**, and castration of **7 piglets** — all conducted using locally available resources.
- Strengthened farmer knowledge in feed management for **30 clients**, contributing to better pig growth and productivity.
- Equipped **23 farmers** with visual reference materials on dosage and weight calculation, improving medication accuracy and care practices.
- Generated measurable economic benefits — **two farmers** reported earnings between **$300 and $1,500** from pig sales after applying improved practices.
- Increased farmer confidence, knowledge, and adoption of best practices, contributing to stronger **food security** and **household income** in the community.



Youth Program

Activities

- Reached a total of **927 participants** from May to July 2025 through youth and family-focused outreach and education activities.
- Engaged **over 300 students and youth** in sessions on home gardening and drug prevention.
- Integrated community-based sports programs, with **70%** of participants showing increased awareness and participation.
- Involved **420 youth and family members** in events promoting teamwork, healthy lifestyles, and leadership skills.
- Encouraged active parent participation alongside youth to build positive role models and stronger family bonds.
- Reached **207 youth** through hands-on gardening demonstrations and team-building activities.
- Provided guidance on home vegetable production and maintaining a healthy lifestyle through active sports participation.

Accomplishments

- Successfully reached **927 participants** over three months, addressing youth and family challenges through sustained engagement.
- Improved awareness and participation in community sports programs, with **70%** of May participants reporting increased involvement.
- Enhanced teamwork, leadership, and healthy lifestyle practices among **420 youth and family members** in June events.
- Delivered practical gardening skills to **207 youth** in July, promoting self-reliance in food production and healthier eating habits.
- Achieved **over 50% adoption rate** of improved social behaviors, leadership qualities, and drug-free commitments among July participants.
- Strengthened family involvement in youth development by encouraging **joint participation of parents and youth** in community activities.
- Demonstrated that consistent, monthly engagement can transform youth attitudes, improve health, and foster stronger community bonds.

Building Stronger Community Bonds

Reach Participants

Successfully engaged 927 individuals in community programs.

1

Increase Sports Participation

Achieved 70% increase in involvement in community sports.

2

Enhance Teamwork

Improved teamwork and leadership skills among 420 youth.

3

Teach Gardening Skills

Empowered 207 youth with practical gardening skills.

4

Promote Social Behaviors

Achieved over 50% adoption of positive social behaviors.

5

Strengthen Family Involvement

Encouraged joint participation of parents and youth in activities.

6

Food Safety Program

Activities

- Reached a total of 151 individuals from May to July 2025 through community awareness and training activities on food and water safety.
- Conducted training for **45 community members** on safe water use and traditional food preservation methods, including processing taro into flour.
- Engaged **37 participants** through follow-up visits and community discussions.
- Residents of Rohi community ceased drinking unsafe water after learning about contamination risks.
- Delivered hands-on sessions on the use of water filters and test kits, enabling families to assess drinking water quality independently.
- Trained **69 new clients** in food preservation and water testing techniques.
- Reinforced previous lessons through demonstrations and practical exercises.

Accomplishment	Description
Participant Reach	Reached 151 participants in three months
Safe Water Use	Increased knowledge, residents switched water sources
Food Preservation	Taught 45 to process taro into flour
Water Monitoring	37 households monitor water quality independently
Expanded Reach	Trained 69 new clients in July
Dependency Reduction	Reduced unsafe water source dependency
Resilience	Blended modern tools with traditional knowledge

Accomplishments

- Directly reached **151 participants** across three months, building local capacity to prevent food and waterborne illnesses.
- Increased knowledge and skills in **safe water use**, with documented behavioral change in the Rohi community; residents switched from unsafe water sources after training.
- Promoted **traditional food preservation practices** by teaching 45 participants to process taro into flour, enhancing food storage and availability.
- Provided hands-on experience with **water filters and test kits**, empowering **37 households** to monitor water quality independently.
- Expanded reach in July by training **69 new clients**, many of whom reported adopting safer water practices and food preservation techniques.
- Reduced dependency on unsafe water sources and increased the adoption of preventive measures for long-term public health improvement.
- Strengthened community resilience by blending modern water safety tools with traditional food preservation knowledge.

Obesity Prevention Program

Activities

- Reached a total of **90 clients** through targeted outreach and education to address childhood obesity in Pohnpei.
- **Palikir, Wapar, and Uh Community**: Delivered a presentation to **19 youth** (**12 females**, **7 males**) on Body Mass Index (BMI) and healthy food choices.
- Conducted a school gardening demonstration for **10 students** on how to grow healthy, local foods.
- Organized a slow-pitch softball tournament involving **24 males** to encourage regular physical activity.
- Activities helped participants learn how to measure BMI, grow nutritious foods, and integrate exercise into their daily lives.
- Reached **21 individuals** through surveys and home visits.
- Many participants reported increased consumption of local foods and produce from home gardens.
- Held a meeting with public health officials to plan school-based outreach for the next academic year.
- **Madolenihmw and Kolonia**: Provided lifestyle and nutrition advice to **16 clients**, reinforcing healthy living practices.

Accomplishments

- Reached **90 participants** over three months, raising awareness and promoting healthy lifestyle habits to address childhood obesity.
- Increased knowledge of BMI measurement and healthy eating among **19 youth**, improving their ability to monitor and manage personal health.
- Promoted food self-sufficiency by training **10 students** in school gardening and encouraging the consumption of fresh, local produce.
- Encouraged physical activity through a sports event involving **24 males**, fostering community engagement in exercise.
- Strengthened healthy eating behaviors, with **21 individuals** in June reporting increased intake of local foods and garden harvests.
- Collaborated with **public health officials** to integrate obesity prevention efforts into the upcoming school year's outreach programs.
- Reinforced healthy lifestyle practices among **16 clients** in July, contributing to sustainable behavior change and long-term obesity reduction goals.

Aquaculture Program

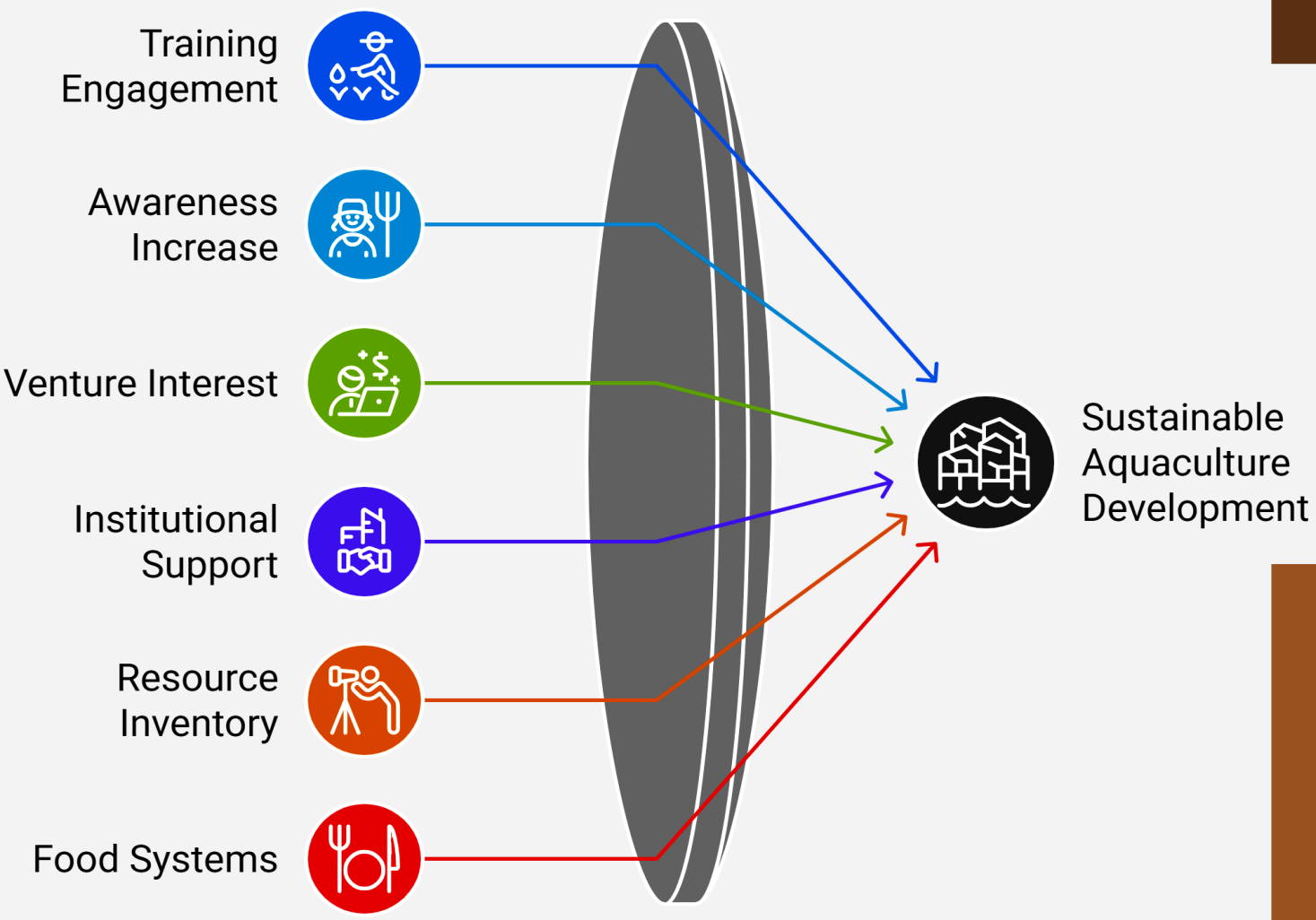
Activities

- **Overall Outreach**
  - Conducted sustainable aquaculture awareness sessions reaching a total of **157 clients** over three months (**57** in May, **50** in June, and **50** in July).
- **Training Content**
  - Provided education on:
    - **Mangrove crab culture**
    - **Rabbitfish cage farming**
    - **Giant clam farming**
  - Target audience included fish farmers and youth, focusing on sustainable practices and opportunities for income generation.
- **Partnership Development**
  - Established working relationships with the **State Marine Resources Office** and the **Office of Fisheries and Aquaculture** to:

- Conduct aquaculture resource inventories.
- Provide technical assistance for new and existing aquaculture initiatives.

Accomplishments

- Successfully engaged **157 participants** in sustainable aquaculture training, building local capacity in key farming techniques.
- Increased awareness of **three aquaculture production systems** — mangrove crab, rabbitfish, and giant clam — among fish farmers and youth.
- Stimulated strong interest in developing **new income-generating aquaculture ventures** within Pohnpei and outer islands.
- Strengthened institutional support for aquaculture development through partnerships with **two key state agencies.**
- Laid the groundwork for **resource inventories and technical assistance programs** to guide future aquaculture expansion.



AQUACULTURE RESEARCH

Activities

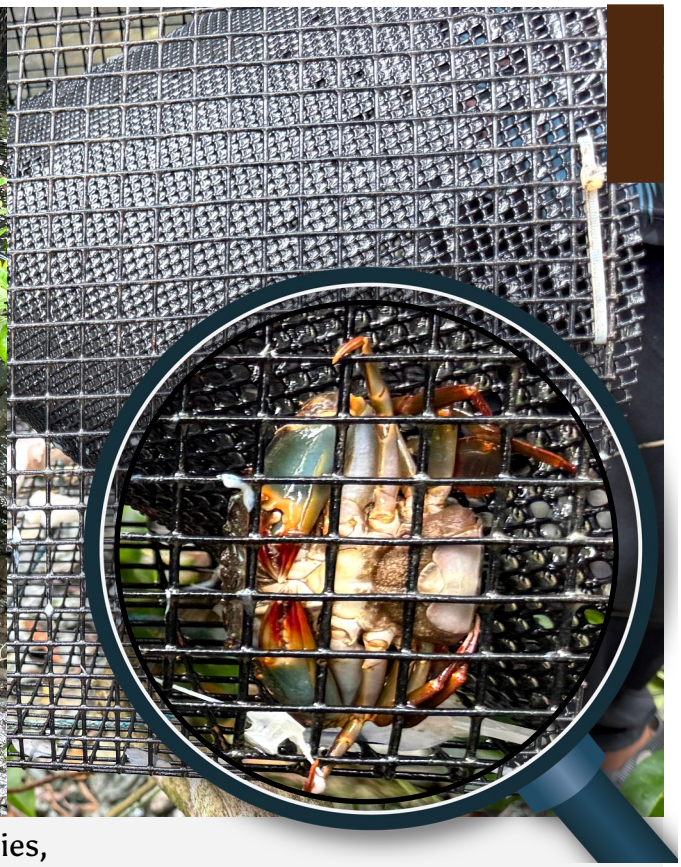
From May to July 2025, research activities progressed under **three USDA-NIFA approved hatch projects**:

1. **Sustainable Mangrove Crab (*Scylla serrata*) Aquaculture Practices in the Federated States of Micronesia (FSM)**
2. **Green Seaweed (Caulerpa racemosa) Cultivation in the Tank Farming System, Kosrae**
3. **Cultivation of Hatchery-Produced Edible Oyster Spats (Crassostrea sp.) in Kosrae Waters**

These projects aim to establish an aquaculture hatchery program, initiate sustainable aquaculture practices, provide technical knowledge to local communities, replenish depleted wild stocks, enhance food security, and create potential income opportunities for Micronesian communities.

For the mangrove crab project, **site surveys, sample collection, and data assessments** were completed in **Kosrae, Pohnpei, and Yap.** Statistical analysis revealed **phenotypic variation** in *Scylla serrata* populations. The crab stocks from Kosrae and Pohnpei are geographically mixed, whereas the Yap's stock is significantly different from these population. This suggests that both biotic and abiotic factors may have influenced their distribution in the FSM waters. The **Chuuk State survey** remains pending.

A series of **field-based crab fishing assessments** using traditional fishing gear (gill nets and traps) was conducted at **five coastal stations** in Yap in collaboration with **7 local fishermen** and **3 CRE staff.** These efforts yielded **30 mangrove crabs**, providing baseline biological data (size, sex ratio, catch frequency) and seasonal patterns. **Two CRE staff** received training in crab field survey protocols and basic laboratory handling techniques.



Additional activities included procurement of lab supplies, field sampling, data analysis, and laboratory collaboration with internal and external universities. Seasonal observations confirmed that wild mangrove crabs are available year-round, supporting the viability of future **community-based hatchery initiatives**.

Accomplishments

- Conducted **site surveys** and **sample collections** in three FSM states (Kosrae, Pohnpei, Yap) for mangrove crab population studies.
- Identified **distinct phenotypic variation** in Yap's crab stock compared to Kosrae and Pohnpei, providing important biological insights for future broodstock management.
- Established **five field stations** for traditional crab fishing assessments.

- Captured and assessed **30 mangrove crabs**, generating baseline biological and seasonal availability data.
- Engaged **7 local fishermen** and **3 CRE staff** in sampling, fostering community involvement and traditional knowledge exchange.
- Trained **2 CRE staff** in field survey protocols and laboratory techniques, enhancing local technical capacity.
- Increased **community awareness and interest** in mangrove crab aquaculture through hands-on participation and knowledge sharing.
- Strengthened research partnerships with local communities, government agencies, and universities to support **environmentally sustainable aquaculture**.
- Contributed to CRE objectives by promoting **non-formal education**, stakeholder partnerships,

new livelihood opportunities, and **food security** through sustainable aquaculture practices.

Extension Specialist Activities

The CRE team conducted **five stakeholder consultation meetings** to advance the development of a **community-based hatchery program** at **Lelu Marine Park.** These meetings brought together **over 30 participants**, including representatives from **Lelu Town Government**, **Kosrae Island Resource Management Authority (KIRMA)**, the **Department of Fisheries and Marine Resources (DFMR)**, and local fishing communities from Lelu Municipality.

Discussions focused on gathering stakeholder input, identifying a suitable hatchery site, and defining shared responsibilities for program implementation. Based on these consultations, the project team drafted and revised a **Memorandum of Agreement (MOA)** between COM-FSM and the Lelu Town Government, outlining partner roles, responsibilities, and resource commitments. As of **July 2025**, the MOA has undergone **two rounds of review** and awaits final approval. The process also included mapping the proposed hatchery site within **Lelu Marine Park.**

Accomplishments

- Drafted an **MOA** with Lelu Town Government, incorporating multi-stakeholder feedback to ensure shared ownership and clear governance.
- Engaged **30 stakeholders**, including **12 local fishers** and **5 agency representatives**, strengthening cross-sector collaboration.
- Identified and mapped **one proposed hatchery site** within Lelu Marine Park.
- Built consensus and secured partner commitments to support the CRE hatchery program's long-term goals of:
  - Establishing sustainable aquaculture practices in Kosrae.
  - Developing a pipeline of trained local aqua-farmers.
  - Expanding income-generating opportunities for coastal households.

Determining maturity of mud crabs involves examining both external and internal features

Activities

As part of the Hatch Project on *Rejuvenation of Declined Citrus Species in Kosrae*, CRE implemented citrus propagation through **air-layering** of thornless lime at the **MPPRC site** and tangerine at the **Lelu site**. These efforts aimed to establish nursery stock for experimental trials and future farmer distribution.

To complement propagation activities, CRE conducted a **community-based training session** titled *"Quality Production of Citrus Cultivars"*, reaching **19 citrus-growing households**. The training covered seasonal pruning, soil and fertilizer management, and included hands-on demonstrations of site-specific fertilizer application techniques. As part of the activity, compound fertilizer and potting mix were distributed to **Utwe citrus farmers** to improve orchard productivity.

In addition, the **dragon fruit project** advanced with **bimonthly data collection** to assess yield performance, cultivar variations, and growth conditions. A series of **three training sessions** benefited **21 participants** (students, staff, and community members), focusing on yield data collection, dragon fruit juice processing, planting material distribution, and practical cultivation techniques.

Accomplishments

- Established **nursery stock** for thornless lime and tangerine to support future farmer distribution and disease-resistant cultivar development.
- Trained **19 citrus-growing households**, resulting in **100%** of participants applying fertilizers correctly after the training.
- Increased farmer awareness of seasonal orchard management, improving community capacity for sustainable citrus production.
- Conducted **three dragon fruit training sessions**, engaging **21 participants**, and building skills in

value addition, crop diversification, and post-harvest processing.

- Distributed planting materials to promote wider adoption of dragon fruit cultivation, contributing to **enhanced food security**, **income generation**, and **agricultural resilience**.

Fertilizer application demonstration

Extension Specialist Activities

Activities

Extension activities were delivered through **collaborative efforts** involving farmers, CRE staff, students, pilot farm managers, and technicians in both **Kosrae** and **Pohnpei**. Over the reporting period, **six major events** were conducted, focusing on resilient and income-generating crops such as coconut, lime, tangerine, and dragon fruit. These events included training sessions, farm visits, and knowledge-exchange activities designed to promote **science-based farming practices** that address local agricultural challenges and enhance community resilience.

Accomplishments

- Engaged **40 stakeholders** across Kosrae and Pohnpei in hands-on learning and practical demonstrations.
- Promoted cultivation of high-value crops—**coconut, lime, tangerine, and dragon fruit**—to strengthen **food security** and generate local income.
- Fostered **cross-site collaboration** that improved technical knowledge sharing between islands.
- Increased farmer capacity to adopt **sustainable, science-driven agricultural techniques** adaptable to island conditions.

EXTENSION PROGRAMS

Crop Production

Activities

- **School-Based Agriculture Initiatives**
  - At **Malem Elementary School**, the Farming Club, guided by Teacher Swin Tara, harvested apples from a tree planted by students the previous year. Planted **papaya seedlings** on the school grounds to prepare for the next harvest season, integrating hands-on learning with food security awareness. This activity marked the culmination of a school-based gardening initiative aimed at promoting food security awareness among youth through hands-on agricultural experiences.
  - At **Utwe Elementary School**, Teacher Bob and **23 students** prepared crops for the 2025 School Base, with assistance from CRE in soil preparation, planting, and crop care. Students actively learned about the crop cycle, from planting to harvest, and engaged in promoting their produce. This collaborative effort reflects a crucial educational outcome, integrating classroom learning with environmental stewardship and food production. The activity contributes to local food system awareness and encourages sustainable practices among Kosrae's younger generation.
- **Specialized Farmer Training**
  - Conducted a **citrus restoration and propagation training** in Utwe, Kosrae, focusing on reviving tangerine production.
  - Over **15 farmers** participated, receiving guidance on citrus management, dragon fruit, and coconut cultivation.
  - Delivered **hands-on grafting demonstrations**, showing techniques to graft local orange onto tangerine to improve production.

Farmer Training

- **Community and Stakeholder Engagement**
  - CRE representatives met with **Congressman Asher**, COM-FSM leadership, and the Board of Regents to discuss ongoing agricultural programs and secure continued political support for community-based initiatives.

Accomplishments

- Engaged **38 students** (15 at Malem and **23** at Utwe Elementary) in hands-on agriculture, fostering early awareness of sustainable farming and food security.
- Expanded diversity of fruit trees in school gardens, adding **papaya seedlings** to existing apple trees at Malem Elementary.
- Strengthened the technical skills of **15 farmers** through practical citrus grafting training, increasing local capacity for tangerine restoration.
- Secured verbal commitment from **Congressman Asher** to continue supporting COM-FSM agricultural and extension programs.
- Fostered strong collaboration between schools, farmers, local government, and CRE, promoting sustainable agriculture and environmental stewardship in Kosrae.

Farmer training—Citrus grafting demonstration

Activities

During the reporting period, the EFNEP Agent delivered nutrition education and food processing training to community youth and adult participants through hands-on, experiential learning sessions.

Key activities included:

- Conducted **training sessions** with the **UYG youth group** in one Kosrae village, focusing on **healthy recipes** and **food processing techniques**, including fish processing. Participants applied these skills to prepare and sell food during their Market Day, integrating EFNEP lessons into their income-generating activities.
- Led a **Food Demonstration and Food Safety presentation** during the **2025 Youth Summer Camp**.
- Delivered **interactive, learn-by-doing sessions** that helped both adults and youth acquire practical skills in food safety, healthy cooking, and nutrition.

Accomplishments

- Reached a total of **106 participants** during the Youth Summer Camp (**89 youth** and **17 adults**) EFNEP workshop.
- Empowered the **UYG youth group** to apply EFNEP training for **business purposes**, generating income from prepared food sales on Market Day.
- Strengthened food safety and nutrition knowledge, equipping participants with practical skills to benefit their households and communities.
- Fostered **self-worth and community contribution**, with participants recognizing their ability to support family health and economic well-being through improved dietary habits and safe food preparation.

Youth Program

Activities

During the reporting period, the youth program in Kosrae implemented a variety of educational, skills-building, wellness, and counseling initiatives to promote personal growth, community engagement, and self-reliance among young people. Key activities included:

- Delivered a presentation on youth programs during the Behavioral Health and Wellness Program summer camp, providing critical information on the dangers of drug use, encouraging informed decision-making, and promoting school retention.
- Assisted with the 1st Kosrae Summer Reading Program (KSRP), engaging youth in reading activities, interactive discussions, and knowledge-sharing sessions to enhance literacy and communication skills.
- Facilitated social network development activities where youth exchanged knowledge and skills on preventing and managing communicable diseases.
- Provided youth counseling sessions, leading to improved attendance, academic focus, and successful graduation for two senior students.
- Conducted FAFA-making training, equipping participants with traditional food preparation skills for community events and enabling them to generate income.
- Delivered a three-part sewing presentation during summer camp, including:
  - Introduction to the sewing program and its community benefits.
  - Five key benefits of sewing as a personal, economic, and creative skill.
  - Hands-on demonstration of a simple hand-sewing project, reinforcing the importance of self-sufficiency and confidence-building.
- Organized and supported awareness, training, and fundraising activities in partnership with community stakeholders.

Accomplishments

- Conducted 5 trainings: 2 community trainings (Awareness on Hansen's disease – 15 participants; FAFA-making – 25 participants) and 3 sewing training sessions.
- Supported two youth fundraising activities with 70 participants, fostering teamwork, entrepreneurship, and community service.
- Held 12 short-term sessions with 101 participants, delivering targeted educational and wellness messages.
- Provided one counseling session to 2 youth, both of whom successfully completed their senior year and earned diplomas.
- Reached a total of 418 participants (273 youth and 145 adults) across all activities.

College of Micronesia-FSM, Pohnpei State Office of Fisheries and Aquaculture, and Pohnpei State Department of Resources and Development Sign MOU for Nett Point Hatchery

On August 12, 2025, the College of Micronesia-FSM (COM-FSM), through its Cooperative Research and Extension (CRE), the Pohnpei State Office of Fisheries and Aquaculture (OFA), and the Pohnpei State Department of Resources and Development (R&D) signed a five-year Memorandum of Understanding (MOU) to jointly develop and operate the Nett Point Hatchery and to support aquaculture initiatives in Pohnpei.

This partnership is designed to strengthen sustainable aquaculture research, enhance local food security, and build capacity in communities across the Federated States of Micronesia (FSM). Under the agreement, COM-FSM CRE will serve as the lead institution, coordinating research, student engagement, and community outreach in close collaboration with OFA and R&D.

The MOU outlines shared responsibilities in research and development, extension services, capacity building, and resource sharing. The Nett Point Hatchery will serve as a hub for practical training, providing students, farmers, and partner institutions with opportunities for hands-on learning, technical support, and collaborative projects.

The hatchery's objectives align with state and national priorities to strengthen resilient food systems, support sustainable livelihoods, and advance technical expertise in aquaculture for the benefit of Pohnpei and the wider FSM.

The agreement was formally signed by Dr. Theresa Koroivulaono, President & CEO of the COM-FSM, Mr. Jorg Y. Anson, Administrator of OFA, and Ms. Michaela Saimon, Acting Director of R&D.

COOPERATIVE RESEARCH AND EXTENSION

Building Resilient Communities