



Prepared by:
Office of the Vice President for
Innovation and Sustainability



JUNE - AUGUST 2026

QUARTERLY REPORT

BUILDING RESILIENT COMMUNITIES



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.

Executive Summary



During the June-August 2026 reporting period, the College of Micronesia-FSM Cooperative Research and Extension (CRE) continued to strengthen its role as the College's primary platform for applied agricultural research, community extension, workforce development, and technical assistance across the Federated States of Micronesia. Through the combined work of the Agricultural Experiment Station (AES) and Cooperative Extension Service (CES), CRE advanced initiatives in crop and livestock production, aquaculture, food and water safety, nutrition and healthy lifestyles, youth and family development, marketing and export readiness, and entrepreneurship. AES researchers progressed field and hatchery-based studies on citrus, coconut, dragon fruit, bush pepper, virus-indexed sweetpotato, climate-resilient staple crops, sea cucumber, giant clam, rabbitfish, mud crab, seaweed, and oyster production, while CES personnel translated practical knowledge into farmer training, demonstrations, technical assistance, school and youth programming, household outreach, and follow-up support.

Across the quarter, the emphasis increasingly shifted from reporting activities alone toward demonstrating adoption and measurable results, including farmers generating income from crop and livestock production, youth independently continuing gardening and production activities, improved hygiene behaviors among students, expansion of commercially operated hydroponic farms, and women-led extension networks reaching thousands of households with food-processing and preservation skills. CRE also continued to leverage external partnerships and grant-funded initiatives with organizations including UNICEF, the Government of New Zealand, Micronesia Conservation Trust, FSM Research and Development, the Pacific Community, the University of Guam, USDA-ARS, and other national, state, regional, and international partners to expand the College's research, extension, and community-development impact.

Quarter at a Glance



4,111

Eggs supplied to
Yap markets

from 5 poultry farmers |
June–July 2026



11

Virus-indexed
sweetpotato cultivars
introduced

31 tissue-cultured
plants established



231

SAP020 training
events completed

reaching 2,283
households



150 lbs/week

Leafy vegetables
supplied to
local markets

+ 10 lbs/week tomatoes
from a CFE-assisted
hydroponic client



60

Chinese cabbage
heads harvested

first harvest from
upgraded aeroponic
towers



1,748

Layer chicks
dispersed

from a CRE-supported
Pohnpei breeder farm |
since 2025



72%

Preliminary bush
pepper cutting
survival

from Yap AES
propagation trials



10

Underwater
temperature sensors
deployed

+ 1 weather station for
environmental
monitoring

Crop Production

AGRICULTURAL EXPERIMENT STATION

AES crop research continued to develop practical solutions for food security, crop diversification, climate resilience, and reduced dependence on imported agricultural inputs and planting materials.

In Kosrae, the Citrus Rejuvenation Project evaluated six propagation treatments for thornless lime. Improved air-layering and alternative growing substrates produced stronger root development than conventional topsoil methods, providing a foundation for future multiplication and distribution of healthier planting material.

The Kosrae Coconut Yield Assessment collected and evaluated 100 coconut samples from Utwe, identifying two additional coconut variants with distinctive characteristics and building agronomic information that can support future variety selection, processing, and value addition. Research on dragon fruit also advanced with stock multiplication, experimental plot design, and procurement of artificial lighting and plant growth regulators in preparation for controlled off-season production trials.

In Yap, bush pepper propagation trials achieved preliminary cutting survival rates of up to 72%, advancing efforts to standardize propagation of black pepper as a potential small-scale cash crop. Yap also introduced 11 virus-indexed sweetpotato cultivars, with 31 tissue-cultured plants successfully acclimatized and hardened to establish clean nucleus planting stock for future multiplication and farmer distribution.



100

Coconut
samples assessed



6

Citrus propagation
treatments tested



72%

Preliminary bush
pepper cutting
survival



11

Virus-indexed
sweetpotato
cultivars introduced



31

Tissue-cultured
sweetpotato plants
established and
hardened

COOPERATIVE EXTENSION SERVICE

Crop Extension continued to demonstrate a shift from training to measurable adoption, increased production, income generation, and commercial expansion. Across the states, CRE provided practical assistance in vegetable production, seedling management, composting, soil improvement, demonstration farming, and hydroponics, while follow-up activities helped ensure that participants continued applying the skills introduced through extension.

In Pohnpei, Crop Extension recorded 100 crop-production contacts and 87 compost and soil-management contacts. Follow-up showed farmers independently germinating seeds, transplanting crops, purchasing their own inputs, and applying improved soil and compost practices—evidence that extension recommendations are being sustained beyond the initial training. In Chuuk, the reestablishment of the CRE demonstration garden and community composting activities strengthened local capacity for food production following Typhoon Sinlaku.

In Yap, direct technical assistance produced a clear economic result: a CRE-assisted farmer sold 465 Chinese cabbages for \$1,162.50, while retaining additional produce for household consumption and sharing. This demonstrates how extension support can contribute simultaneously to household food security, local market supply, and farmer income.

Hydroponics showed even greater potential for commercial scaling. With continued CFE technical assistance, A-Exports and Trading has progressed from establishing its first hydroponic farm to operating two 20 × 80-foot commercial farms, producing approximately 150 lbs of leafy vegetables and 10 lbs of tomatoes each week for the local market. Demand remains higher than current supply, encouraging the company to pursue five additional 66 × 100-foot farms with the longer-term goal of supplying neighboring islands. This provides a strong example of CRE assistance contributing to private-sector investment, import substitution, local food availability, and future inter-island trade.

CRE also strengthened its demonstration capacity through support from the Government of New Zealand through the New Zealand North Pacific Development Fund. Upgraded hydroponic systems, including new aeroponic towers, produced an initial harvest of approximately 60 heads of Chinese cabbage. CTEC Agriculture and Food Technology interns participated directly in installation and operation, combining agricultural innovation with practical workforce development.

Overall, the quarter demonstrated that Crop Extension is not only increasing knowledge—it is helping clients produce more food, earn income, adopt improved technologies, and expand successful agricultural enterprises.



SWINE AND POULTRY PROGRAM

7

COOPERATIVE EXTENSION SERVICE

SWINE PROGRAM

The Swine Extension Program continued to strengthen farmer skills in animal health, medication, vaccination, deworming, piglet management, castration, dosage calculation, and safe husbandry.

In Pohnpei, the program recorded 88 participant/client contacts and approximately 37 hours of extension assistance during June and July. Follow-up with participating farmers documented approximately **\$7,000 in income over three months**, demonstrating the livelihood potential of improved swine management. Rising feed costs remain a significant production challenge.



POULTRY PROGRAM

Poultry Extension continued to support household and small-scale commercial production through farmer training, natural health management, feed supplementation, production monitoring, and market development.

Yap currently supports 15 active poultry farmers. Production records from only five farmers documented 4,111 eggs (342.58 dozen) supplied to local markets during June and July, generating approximately \$1,993 in egg sales. Including two live birds, total documented poultry **sales reached approximately \$2,023**. Two poultry workshops reached 16 participants, while SAP020-supported poultry expansion continued. Of 17 planned community sites, 12 have been identified and three established. Eight existing poultry farmers are also helping incubate and supply chicks locally.

Pohnpei poultry activities reached 26 participants and promoted locally available ginger, garlic, turmeric and moringa as natural poultry-management inputs. Farmers also reported egg and chicken sales. In Pohnpei, CRE's support for local poultry breeding has also contributed to the development of small-scale hatchery capacity. Lei's Mini Poultry Hatchery, established using Rhode Island Red and Barred Plymouth Rock breeder stock provided through CRE, has dispersed 1,748 layer chicks to farmers since 2025, helping expand access to locally produced chicks and strengthen domestic poultry production.



AQUACULTURE PROGRAM

AGRICULTURAL EXPERIM

Aquaculture AES activities: research, rabbitfish resear and student research.

In Yap, four batches of 1 microalgae, rotifer and polyculture experiments in

Yap also continued giant c In Kosrae, two seaweed c lease for a hatchery at Lel

In Pohnpei, repairs restor facility to operational cor microalgae cultures.

Working with SPC, CRE temperature sensors and c



3

Oyster cultivation trials completed



2

Giant clam species monitored



2

Rabbitfish species studied



10

Underwater temperature sensors deployed



8

Days of field monitoring completed

COOPERATIVE EXTENSION

Aquaculture Extension co
engagement and educati

Chuuk conducted three a
77 participants (44 male,

A technical visit to Jeju, Re
Chuuk's capacity in marin

Pohnpei Aquaculture Exte

In Yap, the CRE hatchery
demonstrating larval reari



YOUTH AND FAMILY PROGRAM

COOPERATIVE EXTENSION SERVICE

The Youth and Family Program continued to combine leadership, mentoring, agriculture, entrepreneurship, positive coping strategies, cultural skills, community engagement and experiential learning.

Pohnpei recorded 112 youth and family client contacts. Youth involved in cucumber production had progressed beyond initial training by harvesting crops, saving their own seed, and preparing for the next production cycle. Sports-based outreach reinforced healthy choices, teamwork and drug-prevention messages.

In Yap, five Upward Bound youth received ongoing mentoring, while 97 new youth at Yap Catholic High School participated in leadership, positive values and responsible-citizenship outreach.

In Kosrae, more than 30 clients participated in garment construction and entrepreneurial skill development. Follow-up found that **participants independently produced more than 40 dresses and mu'umu'us**, while former participants began teaching others.

UNICEF Internship Program

CFE also implemented a paid experiential internship program with UNICEF involving 14 paid interns, each receiving \$50 per day while participating in experiential learning activities.

Interns helped operate CFE demonstration farms while learning:

- hydroponics,
- raised-bed farming,
- composting,
- crop production,
- extension activities,
- practical workplace skills.



FOOD SAFETY, NUTRITION & HEALTH

Food & Water Safety

Pohnpei reached 30 participants in food, water-quality and sanitation activities. Fifteen participants in Pahn Takai specifically received guidance on filtration, chlorination and safe drinking water.

Yap Health Programs

Yap's school-based education produced one of the clearest behavior-change results this quarter. 59 students were reached at Gagil Elementary and St. Mary's School, with follow-up showing **that 31 adopted improved personal-hygiene practices**. Another 30 youth received hygiene education through a Summer Reading Program.

Yap is also working with DOE, Behavioral Health and Wellness, Public Health and other partners to develop a coordinated school wellness program incorporating nutrition, food safety, physical and behavioral wellness, and healthy-lifestyle education.

EFNEP - Chuuk

Chuuk conducted four EFNEP outreach activities in Sapuk, the Chuuk Women's Council and Nema, reaching 85 participants, including 67 females and 18 males.



MARKETING & EXPORT PROGRAM

SAP020 PROJECT

Through the SAP020 Project implemented with the Micronesia Conservation Trust and FSM Department of Research and Development, CRE continued the large-scale delivery of community training on processing, preserving and utilizing local staple crops.

Over an approximately two-month period, the SAP020 Project achieved substantial community reach through women-led food processing and preservation training. The Pohnpei Women's Council completed 159 training events reaching 1,490 households, while the Chuuk Women's Council completed 72 training events reaching 793 households. Combined, the two councils delivered 231 training events and reached 2,283 households. Beyond strengthening household knowledge and practical skills in preserving and processing staple crops, the initiative has also created meaningful benefits for the women serving as trainers, who have described the work as a source of personal fulfillment, community contribution, and supplemental income.

POHNPEI WOMEN'S COUNCIL

159

Training events

1,490

Households reached

Community members gained practical skills in processing and preserving staple crops. Trainers also reported personal fulfillment and a source of income.

CHUUK WOMEN'S COUNCIL

72

Training events

793

Households reached

Community members gained practical skills in processing and preserving staple crops. Trainers also reported personal fulfillment and a source of income.



MARKETING & EXPORT PROGRAM

IAS / GEF-6 PROJECT

CFE reached a major milestone in the FSM GEF-6 Invasive Alien Species Project by completing the non-credit IAS certification program and holding the certificate distribution ceremony during the quarter.

Participants **completed 60 hours of instruction** and successfully passed the required assessment to receive the Certificate of Completion.

The program has also been **institutionalized through Moodle**, providing future participants with continued access to course presentations, lecture recordings, notes, practice activities and training materials.

Community-level farmer training required under the project has now been:

Completed: Yap and Kosrae

Underway: Pohnpei and Chuuk

CFE expects to complete the overall project by December 2026.





Expanding COM-FSM's Research Reach through Remote Collaboration in Climate-Resilient Agriculture

Building climate resilience. Strengthening food security. Advancing Pacific futures.

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OVERVIEW

Yap CRE supported a remote research assignment by Ms. Suhani Sharma, graduate student at Dr. Y.S. Parmar University of Horticulture and Forestry, India.

Under the guidance of Dr. Muru, she conducted a six-month comparative assessment of four important staple crops in the FSM: cassava, taro, sweetpotato, and swamp taro.



Ms. Suhani Sharma

Graduate Student
Dr. Y.S. Parmar University of
Horticulture and Forestry, India



PURPOSE OF THE STUDY

To assess the climate resilience of four staple crops important to island food systems and identify the strengths of each crop under different island conditions and climate-related stresses.

THE FOUR STAPLE CROPS ASSESSED

Cassava



Taro



Sweetpotato



Swamp Taro



METHODOLOGY

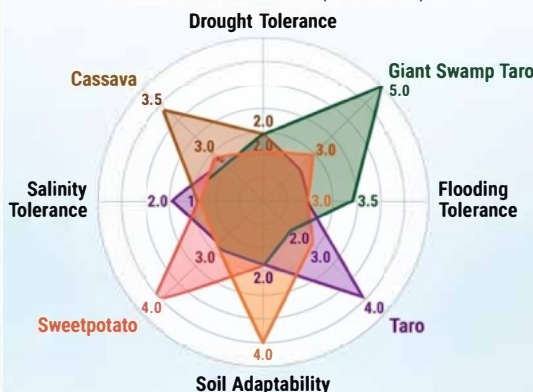
The study compared the four crops across six key parameters:

- 1 Drought Tolerance
- 2 Salinity Tolerance
- 3 Flooding & Waterlogging Tolerance
- 4 Soil Adaptability
- 5 Nutritional Value
- 6 Production Feasibility



KEY FINDINGS

THE RESILIENCE RADAR (1-5 SCORE)



- ✓ Each crop shows unique strengths across different climate and soil conditions.
- ✓ Crop diversification is essential for building resilient, nutritious, and sustainable food systems.
- ✓ Matching crops to appropriate agroecological environments enhances productivity and reduces climate risks.



CONFERENCE PRESENTATION

An abstract titled
**"Climate Resilience through Crop Diversification:
A Comparative Assessment of Four Staple Crops
for Pacific Island Food Security"**

- ✓ Submitted to the Regional Climate Change Conference 2026 and accepted for presentation in Bangkok, Thailand.
- ✓ Authors: Suhani Sharma, Murukesan Krishnapillai, and Steven Young-Uh.
- ✓ Ms. Sharma will present the study virtually during the conference.



NEXT STEPS



The research team is preparing a full article based on the study for submission to a reputable peer-reviewed journal.



This work contributes valuable evidence for climate-resilient agriculture and supports sustainable food systems in the FSM and across the Pacific.



SIGNIFICANCE & IMPACT FOR COM-FSM



Demonstrates COM-FSM's ability to mentor graduate researchers and contribute to advanced scholarship beyond its geographic boundaries.



Strengthens international academic partnerships and collaboration with global institutions.



Increases the College's academic visibility and research credibility through a conference presentation and planned peer-reviewed publication.



Reinforces COM-FSM's role as a Pacific leader in climate resilience, food security, and applied agricultural research.



Through innovation, collaboration, and mentorship, COM-FSM continues to advance research that strengthens island communities and builds a resilient future for the Pacific.

Think. Explore. Achieve.

The Root Crop Portfolio: Building Climate Resilience in Micronesia

A spatially distributed, multi-crop strategy to protect food security against diverse climate hazards.

CASSAVA: The Drought Specialist

Hero Nutrient:
Energy (Calories)

Supporting Detail:
Primary energy source on well-drained ridges & degraded soils. High photosynthetic efficiency, sheds leaves to survive dry seasons.



Drought

SWEETPOTATO: The Rapid Recovery Crop

Hero Nutrient:
Vitamin A

Supporting Detail: Most important for post-disaster food security. Short growth cycle, quick propagation from vine cuttings. Just 221g/day meets daily Vitamin A needs.



Post-Disaster Recovery



Flood

GIANT SWAMP TARO (Babai/Mahra): The Insurance Policy

Hero Nutrient:
Antioxidants & Zinc

Supporting Detail:
Agricultural infrastructure in deep pits; uniquely adapted to permanent inundation & saline conditions.



TARO: The Mineral Powerhouse

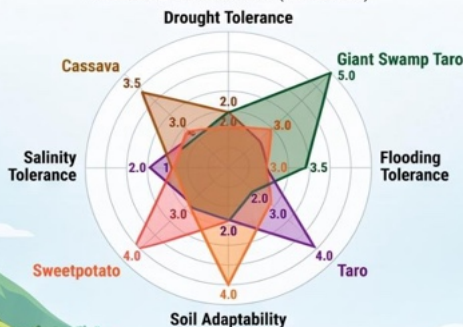
Hero Nutrient:
Minerals (Potassium, Iron)

Supporting Detail: Thrives in high-moisture watland terraces, offering highly digestible starch. Viable 80% more than dryland conditions.

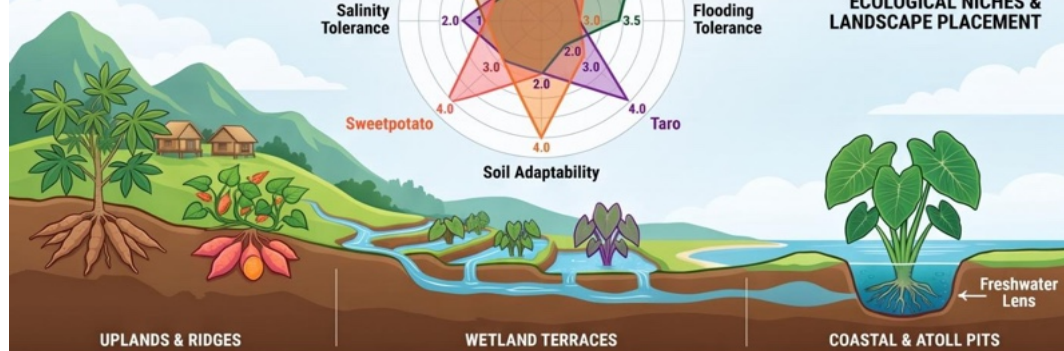


Coastal Salinity

THE RESILIENCE RADAR (1-5 SCORE)



ECOLOGICAL NICHES & LANDSCAPE PLACEMENT



THE RECOVERY TIMELINE

3-5 MONTHS:
SWEETPOTATO RECOVERY
("Sprint Crop", fastest route to food supply)

START

1-6 YEARS:
GIANT SWAMP TARO INSURANCE
("Minathon Crop", requires protection before disaster, slow to restore)

THE PORTFOLIO DECISION MATRIX (SCENARIO PRIORITIES)

Scenario	Recommended Priority
Drought	CASSAVA (Primary)
Flooding	GIANT SWAMP TARO (Primary)
Coastal Salinity	GIANT SWAMP TARO (Primary)
Post-Disaster Recovery	SWEETPOTATO (Primary)
Mineral Deficiency	TARO (Primary)

Green = Prioritize

No Single Crop Can Do It All: A diversified portfolio ensures system survival if one hazard strikes.

KOSRAE CAMPUS WORKFORCE EXTENSION

DRONE TRAINING MOVES RAPIDLY FROM DEMAND TO HANDS-ON SKILLS

20

PARTICIPANTS ENROLLED

2 DAYS

CAPACITY REACHED

80 HRS

6-WEEK CURRICULUM



Instructor Joshua Hadik leads classroom instruction at Kosrae Campus computer lab.

Key Program Highlights & Operations

- **Rapid Community Take-up:** All available training spaces were completely filled within two days of announcement, with 16 of the 20 participants currently employed in local industry.
- **Comprehensive Curriculum:** Training covers critical operational domains including drone safety, flight operations, aerial imaging, GIS mapping, and practical field applications.
- **Immediate Next Steps:** Program progression involves equipment setup, Moodle platform orientation, hands-on flight practice, and final skills evaluation.

DRONE TECHNOLOGY GRANT ALLOCATION (\$50,000 TOTAL)

EXPENDED: \$23,974.00 | REMAINING: \$26,026.00

STATEWIDE DIGITAL WORKFORCE TRAINING

DIGITAL TRAINING DELIVERS HIGH-VALUE CREDENTIALS ACROSS ALL FOUR STATES

COURSE / CERTIFICATION	ENROLLMENT & COMPLETION	PROGRAM SCOPE & FOCUS
Cisco IT Essentials 8	25 / 25 Completed (100% Completion Rate)	70-hour hybrid course featuring 14 modules, hands-on labs, and Packet Tracer; prepares candidates for entry-level IT roles and CompTIA A+.
Fiber Optic Installer	25 Enrolled (Active Cohort)	ETA International-certified training covering fiber installation, connectorization, splicing, and testing. Next: OSHA General Industry & CETa Refresher modules.



Hybrid lab sessions and hands-on technical training active across statewide campus facilities.

TELECOMMUNICATIONS GRANT FUNDING (\$50,000 TOTAL)

EXPENDED: \$47,005.15 | REMAINING: \$2,994.85

EXECUTIVE SUMMARY

WORKFORCE PROGRAM OUTCOMES

Both workforce training programs demonstrate substantial alignment with regional labor demands, converting targeted grant funding into immediate, stackable credentials across the Federated States of Micronesia.

1. Exceptional Demand & Rapid Enrollment

Drone Technology training filled all 20 spaces within two days, while digital workforce courses enrolled full cohorts of 25 participants across both streams, reflecting severe regional demand for practical technical skills.

2. Proven Student Completion & Execution

Cisco IT Essentials achieved a 100% completion rate (25/25 graduates), establishing a robust baseline for entry-level IT roles. Meanwhile, drone training successfully transitions into applied flight and field evaluation phases.

3. Equitable Statewide Access & Reach

Hybrid course delivery paired with dedicated local campus computer labs successfully extends career-technical education to Pohnpei, Yap, Chuuk, and Kosrae seamlessly.

COMBINED GRANT PORTFOLIO SUMMARY

Total Combined Allocation:	\$100,000.00
Total Expended/Committed:	\$70,979.15 (71%)
Total Balance Remaining:	\$29,020.85 (29%)

Immediate Focus: Complete remaining delivery modules, document participant career outcomes, and transition trainees into advanced certifications or applied employment opportunities.

Thank You

