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# University of Guam

## College of Natural & Applied Sciences

### Cooperative Extension & Outreach

**Jesse P. Bamba:** Extension Agent II

**5-year plan:** December 7, 2020 - December 07, 2025

When I was hired as an Extension Agent in December of 2020, my 5-year promotion and tenure journey began. During my first two years (2020-2022), my CFES/POW guided me with a strong plan to achieve faculty success. I will be using the same CFES/POW format for the next three years to strategically navigate thru the promotion and tenure process. In the CFES/POW, role assignments are divided into three sections 1. Extension, Community Activity, and Instruction, 2. Creative/Research/Scholarly, and 3. University Service.

#### Extension, Community Activity, and Instruction 2020-2022 accomplishments

My Extension appointment, which takes up 60% of my time and effort is unique because of the service that Extension & Outreach (E&O) provides to the island of Guam. The technical advice that I give on agricultural production, fruit tree health, crop production, pest management, landscape management, and agriculture produce marketing can be delivered through site visits, workshops, extension literature, phone calls, emails, clients that visit the University of Guam ANR office, and more recently social media platforms.

The 2020 COVID-19 health disaster brought the world to a standstill with the implementation of travel restrictions. The controls varied from country to country, but they all encouraged some sort of travel control, limit of people at social gatherings, sheltering in place, social distancing, wearing a mask, and shutting down of non-essential services during the height of the virus infection. The restrictions caused E&O to change the way traditional services were delivered to clients. In my case I turned to social media platforms provided by WhatsApp, Zoom and Teams which enabled me to reach many clients without personal contact during the health restrictions.

The use of WhatsApp, specifically, allowed me to safely correspond to questions from clients via photos, texts, and phone conversations. WhatsApp improved my ability to answer questions faster, and to also send E&O literature when needed. More importantly, the WhatsApp platform enabled me to regain the lost personal contact I shared with clients before the COVID-19 pandemic. In the coming years (2023-2025) I intend to continue to take advantage of the social media platforms that most people use today in the coming years.

#### E&O collaboration

Another highlight from my first two years of E&O work was creating a working relationship between the Department of Public Health and Social Services Division of Senior Citizens (DPHSS/DSC) Guam State Office on Aging, Guam Farmers' Cooperative Association of Guam (FCAG), and the University of Guam's Cooperative Extension & Outreach Agriculture & Natural Resources (UOG/E&O/ANR). A project called the Mixed Local Produce Bags initiative was started because of the COVID-19 health restrictions.

The Mixed Local Produce Bags was initiated after (DPHSS/DSC) approached UOG/E&O/ANR and FCAG about providing clients from there Senior Citizen programs who stayed at home, with locally grown fresh produce bags. In 2021, with the help of Dr. Bob Barber, I was able to connect DPHSS/DSC with FCAG and successfully planned and delivered 2,684 \$8.00 fresh produce bags on September 21<sup>st</sup>, 22<sup>nd</sup>, 28<sup>th</sup>, and 29<sup>th</sup>, 2021 to 13 different Senior Centers/Adult Care Centers

across the island and the S. H. Enterprises Inc., who assisted with home deliveries, building in Tamuning. The project involved coordinating with several local farmers to produce thousands of pounds of produce for the 4 days of scheduled deliveries to different parts of the Island. The total dollar amount for the 2021 September contract “*Mixed Local Produce Bag Initiative*” amounted to \$21,472.00 worth of locally grown produce. The funding for the 2021 September “*Mixed Local Produce Bag Initiative*” came from the CARE Act Nutrition funding.

In the coming years (2023-2025) I want to establish more opportunities for FCAG members to collaborate with DPHSS/DSC or any other organization that acknowledges the importance of projects, like the Mixed Local Produce Bag initiative, that strengthens the local farming industry and reduces the dependence on imported produce.

#### Pesticide Safety Education Program (PSEP)

The effects from COVID-19 also took a toll on the way traditional pesticide safety education was delivered on Guam and the country. The shutdown of most services due to government restrictions to combat the virus shifted any type of meeting, training, class setting, or congregation to some sort of online venue. The CORE, (P. L. 30-197) consists of sixteen (16) hours of class training, which covers the basics of how to spray pesticides, is required by the Guam Environmental Protection Agency (GEPA). The mandate for all Guam farmers who sell produce on island, was completely abandoned by GEPA because of the restrictions brought on by COVID-19.

As the COVID-19 restrictions persisted from 2020 and well into 2021, I saw the need for some form of EPA CORE training for new and expired CORE card holder. The pesticide CORE manual contains a total of 11 units that have learning objectives that the applicators study before taking the CORE exam. I developed the review material for the 11 units and the in-class activities needed to help applicators make safe decision if spraying a pesticide is needed. With the help of Phoebe Wall Extension Associate III, I scheduled a (2) two-day CORE review workshops that targeted 25 farmers on September 21<sup>st</sup> and 22<sup>nd</sup> 2022.

In the coming years (2023-2025) I want to develop and establish an online or hybrid option for Guam farmers who need EPA CORE cards to operate a commercial farm operation.

#### Conduct workshops that target vegetable/ fruit cultivation, Agriculture marketing and New and emerging issues in agriculture

Extension & Outreach is one of my primary roles as an Extension Agent and conducting farmer focus groups is important to find out what is happening in Guam’s agriculture industry. With the help of Dr. Kuan Chen, we developed survey and interview instruments that enabled us to conduct and coordinate focus group studies. The results emphasized major issues faced by Guam farmers and it identified the issues and needs for program development.

On June 19<sup>th</sup>, 2021, E&O invited farmers (Producers) to the Hyatt hotel in Tumon to participate in 6-hour agriculture needs assessment. The 18 producers represented different industries within the local agricultural community. The objectives for the 6-hour session revolved around surveys, focus group activities that helped identify challenges that producers face, the opportunities available, and possible solutions to the identified concerns. I conducted and coordinated a focus group study, to better understand the experiences and thoughts on major issues faced by Guam farmers and to hear the diverse experiences and perspectives from the producers/growers on Guam.

#### Tomato Virus Workshop

As the IPM Coordinator for Guam, we hosted an IPM and Tomato Virus Workshop on July 13, 2022. A total of 14 farmers or farm employees attended the workshop. I spoke on topics focused on IPM practices for tomato production and tomato viruses. Farmers were given a copy of the Guam Tomato Production Guide, a factsheet about growing tomatoes on Guam, and other handouts related to the

workshop topics. After presentations ended, we held an open discussion period with farmers where they were allowed to discuss their specific concerns and ask questions.

The importance of conducting workshops and needs assessments of the local Agriculture industry is vital to addressing the challenges that happen within the certain timeframe. I am committed to conducting agriculture workshops and needs assessment that will improve the Guam agriculture industry for the future.

#### Extension, Community Activity, and Instruction planned activities for 2023 - 2025

Planned Activities	Planned Evidence of Accomplishment
1. Address client requests	Continue to provide technical assistants with the use of phone calls, email correspondence, site visits, social media platforms to farmers, homeowners, landscapers, pesticide companies, schools, various government agencies and non-profit organizations.
2. Engage with local farmers on market and management issues.	Provide technical assistants to the Farmer's Cooperative Association of Guam (FCAG) and Guahan Livestock Producers Cooperative.
3. Engage in agricultural focus groups to identify their issues and needs for program development.	Survey and interview instruments. Program proposal and summary.
4. Develop the extension project "Agricultural Technology for Viable Small Production Storage".	Extension workshop. Outreach evaluation.
5. Conduct workshops that target vegetable/ fruit cultivation, Agriculture marketing and New and emerging issues in agriculture.	Coordinate/Conduct/Present Workshops that will focus on growing recommendations, agriculture marketing and new and emerging issues in agriculture.
6. Develop new or update Extension fact sheets, booklets, leaflets, etc.	Develop new or update at least 8 Extension fact sheets, booklets, leaflets, etc.

#### Planned activities for Instruction 2023-2025

Planned Activities	Planned Evidence of Accomplishment
I will be the Instructor for AL- 340 Tropical Fruits Horticulture Lecture and AL- 340/L Laboratory in Spring 2023 and 2025.	Completion of teaching AL- 340 (including Lab) in Spring 2023 and 2025. Submission of student grades, class evaluation, and other pertinent documents. Evaluations submitted by students online.
I will be the Instructor for AL-485 Tropical Fruits Horticulture Lecture and AL-485/L Laboratory in Spring 2024 and 2026.	Completion of teaching AL 485 (including Lab) in Spring 2024 and 2026. Submission of student grades, class evaluation, and other pertinent documents. Evaluations submitted by students online.

## Planned Activities for Creative/Research/Scholarly: 2023 - 2025

Planned Activities	Planned Evidence of Accomplishment
<p>1. Awaiting funding approval for: Pesticide Safety Education Funds Management Program (PSEFMP) Grant 2023.</p> <ul style="list-style-type: none"> <li>- I am the Pesticide Safety Education Program Coordinator.</li> </ul>	<p>This proposal entails working with the Hawaii, American Samoa and the Commonwealth of the Northern Mariana Islands.</p>
<p>2. Received funding for WSARE grant proposal Professional + Producer Grant. "5 Future Trainers: Developing a farmer run agriculture production monitoring program for the Farmer's Cooperative Association of Guam (FCAG)". (2022-2025) \$58,401.00</p> <ul style="list-style-type: none"> <li>- I am the PI</li> </ul>	<p>This proposal has been fully approved the money will help establish an agriculture monitoring program for the FCAG operations. This will enable FCAG to purchase and increase agriculture production in Guam with the help of the University of Guam Cooperative Extension &amp; Outreach.</p>
<p>3. I am the CO-PI on the National Conservation Innovation Grants (CIG) Program "Forecasting daily reference evapotranspiration and rainfall for water resources conservation and sustainable agriculture; The geographic location of the project: Hawaii (HI) [Oahu, Maui, and Big Island], Guam (GU), and Nebraska (NE) ". \$935,581.00 (1/2/2020-1/1/2023)</p>	<p>I provided technical assistance for two Guam farmers for the "Forecasting daily reference evapotranspiration and rainfall for water resources conservation and sustainable agriculture" grant which was funded by the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS). I am the Co-PI and coordinator for field day workshops.</p>
<p>4. Awaiting funding for WSARE 2023 Professional Development Grant. <i>Pesticide Safety Education for Pacific Island Educators and Stakeholders</i>. \$99,099.00.</p> <ul style="list-style-type: none"> <li>- I am the PI</li> </ul>	<p>The purpose of the proposal is to provide pesticide safety education regarding exposure reduction, label comprehension, sprayer calibration, respirator fit testing and recognition of potential pesticide exposure to Service Providers (SP's) in the Pacific Islands. Train-The-Trainer outreach activities and educational resources will be offered at extension offices, local farmer markets, and in health care facilities to develop a trusted relationship between the two groups.</p>

## Planned Activities for Community Service: 2023- 2025

Planned Activities	Planned Evidence of Accomplishment
1. I am the University of Guam E&O representative to the Farmer's Cooperative Association of Guam (FCAG)/Guam Farmers Market Board.	Provide meeting documentation and accomplishments.
2. Serve on the Mongmong-Toto-Maite (MTM) Municipal Planning Council (MPC). (2021-2023)	Letter from MTM Mayor acknowledging my participation. Provide meeting documentation and accomplishments.
3. Continue to serve on the Marriage Ministry and head the Western Vicariate for the Roman Catholic Archdiocese of Hagatna.	Letter from the Roman Catholic Archdiocese of Hagatna Marriage Ministry Coordinator acknowledging my participation.
4. Serve as Member of College Search Committees as called upon.	Provide copies of documents given to me when called upon for service.
5. Serve on the University of Guam Faculty Senate (2-year term) (2022-2024).	Provide copies of documents given to me when called upon for service. Review IRB applications from different colleges and independent entities.
6. Serve on the University of Guam's Faculty Election Commission (2-year appointment) (2021-2023).	Provide copies of documents given to me when called upon for service.
7. Serve on the University of Guam's Institutional Review Board (IRB) (2-year appointment) (2021-2023).	Provide copies of documents given to me when called upon for service.

## **Publications and Grant Activities**

1. San Nicolas, P. J., Bamba J. P., and Dresbach S. H. (2021). Electric Fence for Feral Swine: Materials, Installation Guidelines, & Maintenance. Cooperative Extension & Outreach, College of Natural & Applied Sciences, University of Guam.  
[Electric Fencing](#)
2. Casila J., Delfin M., Galsim F., Golabi M. H., Bateni S. M., and Bamba J. P. (October 2021). Improving Irrigation Efficiency on Vegetable Crops Using Smart Irrigation Technologies in Guam Technical Report No. 4. Western Pacific Tropical Research Center (WPTRC). College of Natural & Applied Sciences, University of Guam.  
[CIG/WPTRC-Tech-Rept-4](#)
3. Schlub R. L., Li R., Bamba J. P., Marutani M., and Ling K. S. (2021). Complete Genome Sequences of Tomato Leaf Curl Guam Virus, a Novel Tomato-Infecting Begomovirus from Guam, USA. American Society Microbiology Journal, Microbiology Resource Announcements.  
[Complete Genome Sequences of Tomato Leaf Curl Guam Virus, A novel Tomato-infecting Begomovirus from Guam, USA](#)
4. Chen K. J., Bamba J. P., Wiley M. C., and Vinca L. (2022). Head Start for Agriculture on Guam: Focus Group Studies on Challenges and Opportunities Ahead. Cooperative Extension & Outreach, College of Natural & Applied Sciences, University of Guam.  
[Head Start Agriculture Guam](#)
5. Agricultural Enterprise Development using Research and Extension to work with Agriculture producers and Farm Operators. (2022)  
[Youtube Video: Reinforcing a Sustainable Guam](#)
6. Bamba J. P., Hahn E., Quitugua R. J., and Wall P. (2022). Draft 6<sup>th</sup> Edition, 2022 Guam Fruit and Vegetable Pesticide Guide. University of Guam College of Natural & Applied Sciences Cooperative Extension & Outreach.  
[FINAL VERSION PESTICIDE GUIDE](#)

## **In Review**

1. Sweetsop Tree Care on Guam. In review - E&O publication committee
2. Jesse P. Bamba, Phoebe Wall, Roland J. Quitugua, and Elizabeth Hahn. Growing Tomatoes on Guam- In review- E&O publication committee.

## **Grants applied for**

1. WSARE 2023 Professional Development Grant. Pesticide Safety Education for Pacific Island Educators and Stakeholders. \$99,099.00 (2023-2026)

## **Grants won**

1. I am the coordinator (PI) for the 2021 Pesticide Safety Education Funds Management Program (PSEFMP) grant. \$16,625.00 (2021)
2. Received 2021 grant funding from GEDA. \$9,984.00 (2021)
3. I am the coordinator (PI) for the 2022 Pesticide Safety Education Funds Management Program (PSEFMP) grant. \$17,025.00 (2022)
4. I am the PI for the WSARE 2022-2025 grant Professional + Producer Grant. “5 Future Trainers: Developing a farmer run agriculture production monitoring program for the Farmer’s Cooperative Association of Guam (FCAG)”. \$58,401.00 (2022-2025)