

Extension Outreach and Assistance in Improved Pasture and Livestock Management Practices for Pacific Islanders

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Introduction

Project Location:

The Territory of Guam is the southernmost island in the Mariana island chain with 541 km² of land (Figure 1). Guam is an organized unincorporated territory of the United States. Between 2000 and 2007 the population on the island increased from 154,805 to 173,456 (CIA World Factbook 2007). The largest ethnic group, the native Chamorro, make up 57% of the population followed by Filipino and other groups. Over 25% of Guam's population is involved in production agriculture (CIA World Factbook 2007).

The Commonwealth of the Northern Mariana Islands (CNMI) is a chain of Pacific islands in political union with the U.S. The Commonwealth includes 14 islands; the largest include Saipan, Rota, and Tinian (Figure 2). The population of CNMI has increased 22% to an estimated 84,546 since 2000 (CIA World Factbook 2007). Native Pacific Islanders comprise approximately 36% of the population. Saipan and Tinian are the largest islands with 115 and 101 km² of land, respectively. Rota has a land area of 85 km².



Figure 1. The island of Guam is an organized unincorporated territory of the United States with 541 km² of land.

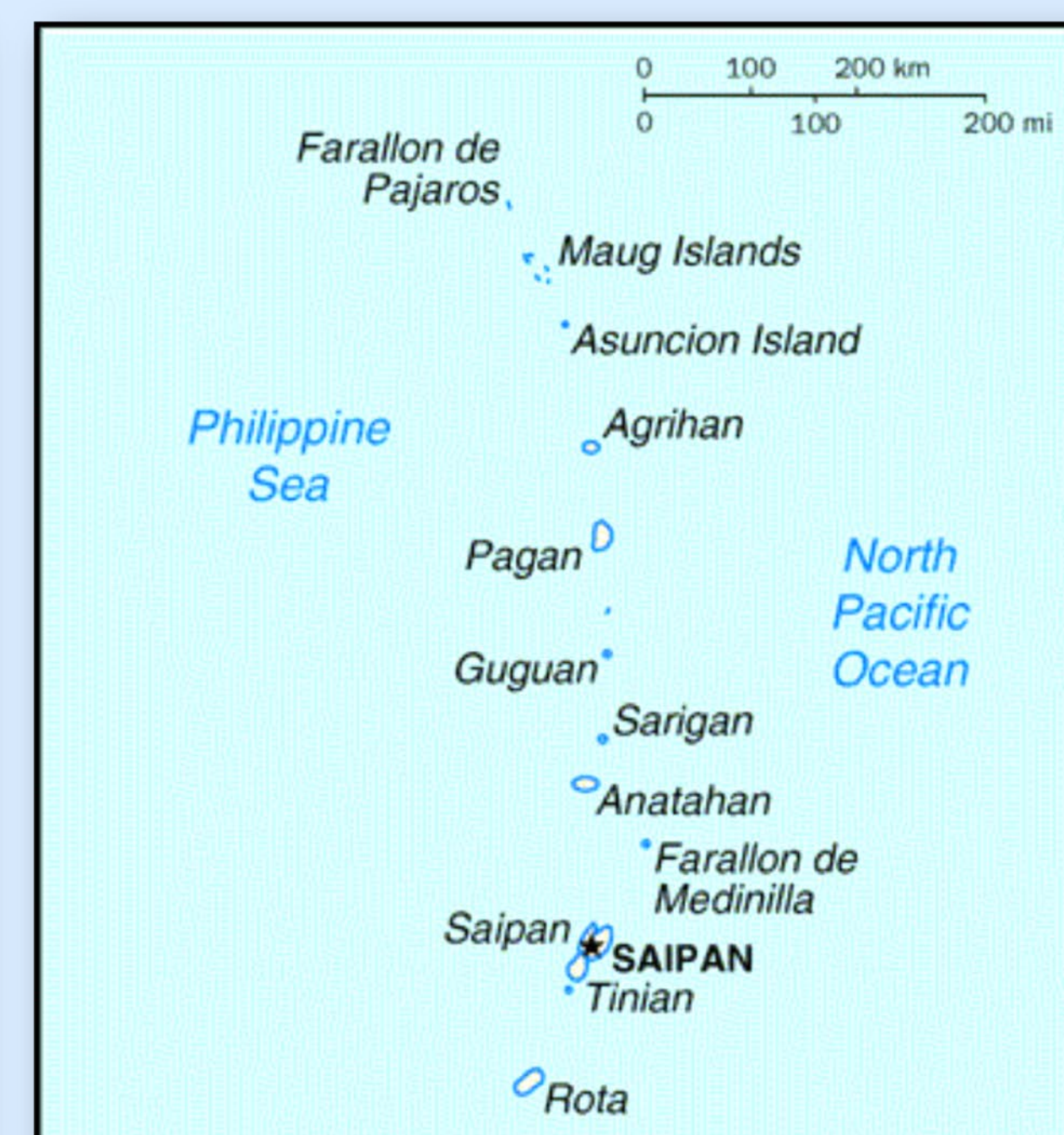


Figure 2. The Commonwealth of the Northern Mariana Islands is a Trust Territory of the Pacific under U.S. administration comprised of 14 islands, the largest being Saipan, Rota, and Tinian

Need:

High demand for product and limited land availability imposes tremendous pressure on livestock producers to maximize their productivity; often at the expense of the land resources. Improper grazing management practices typically result in decreased forage production, animal carrying capacity, and soil fertility. Without mitigation these conditions lead to overgrazing which commonly result in soil erosion, weed infestations and ultimately, loss of economic viability of the operation. Outreach and assistance programs in grazing and livestock management can help many existing and new livestock producers acquire the necessary skills and technology for pasture improvement, adopt better grazing management practices, and increase the overall profitability of their operations. Livestock producers in Guam and CNMI will benefit from such outreach and assistance programs especially as it will encourage adoption of sustainable pasture and herd management programs, improvement of herd genetics, and better marketing decisions. Ultimately this program will help the producers in Guam and CNMI become more productive, more profitable, and better stewards of the lands in their care.



Poor grazing management practices result in soil erosion, weed infestations and ultimately, loss of economic viability of the operation.



Project Activities

In May the project team traveled to Guam and CNMI to meet with livestock producers, cooperating partners, allied industry representatives, and government agency personnel. This 14 day tour of the islands helped the project team gain a perspective on livestock and pasture management needs and issues, cultural practices and limitations to change, and resources available for providing educational outreach activities.

The project team met with and/or toured over 21 separate livestock producers and their operations on the islands. Many of these producers expressed a great interest in our outreach project and were eager to participate in workshops and support for study trials and demonstration projects. During these visits we evaluated pasture and herd conditions, collected soil samples, assessed animal husbandry practices, animal handling facilities and marketing practices and strategies.

We also met with 29 individuals representing the University of Guam-CSREES; Northern Marianas College-CSREES; USDA-NDCS and APHIS; Guam Association of Soil and Water Conservation Districts, CNMI-Department of Land and Natural Resources, and allied industry representatives. These meetings provided a valuable perspective on cultural, political, and social challenges in carrying out our proposed outreach activities. In addition we were able to evaluate the resources available to support our workshops and demonstration projects over the next three years.

During the tour the project team held daily debriefing/strategy meetings to assess each team members observations and impressions from the day's meetings and to plan the next day's activities. A final debriefing and strategy meeting was held on May 14 before leaving the islands to begin prioritizing our future outreach activities.



Recent project activities included meeting with livestock producers in Guam and CNMI to evaluate pasture conditions, grazing management strategies, animal husbandry practices, herd health and genetics, animal handling facilities, and resources and support for future educational outreach activities.

Prioritization of Future Project Activities

(Objectives 1-6)

Immediate Priorities Identified:

1. Establish advisory groups/rancher organizations
 - a. Identified 3-4 livestock producers as potential members of an advisory group for each island
 - b. Draft letters of invitation to participate in advisory groups
 - c. Establish and hold scheduled poly-com meetings with advisory groups
2. Develop livestock producer mailing list and survey
3. Establish initial workshop content, materials, and agenda
 - a. Content
 - i. Animal health and handling; genetics,
 - ii. Livestock producers associations /cooperatives;
 - iii. Weed control pasture management/improvement
 - b. Materials;
 - i. Course handbook
 - ii. Extension publications
 - iii. On-line information
 - c. Agenda (initial workshops)
 1. Tinian-Rota, August-September 2009
 2. Saipan-Guam, December 2009
4. Develop project website and on-line resources; a Cooperative effort between: University of Hawaii at Manoa; University of the Virgin Islands; University of Guam; and Northern Marianas College.
5. Develop and distribute extension publications, course materials, and on-line resources.



The goal...productive pastures...healthy animals...sustainable operations...for the people of the Marianas Islands.

Situation:

The bulk of food resources for these islands are imported. On average Guam imports over \$206 million in food items including meat products that account for 50% of the import value (Guam Bureau of Statistics and Plans 2007). Annually, CNMI imports over 62,000 tons of food (CNMI Department of Commerce 2006). The cost of importation of food items to the islands is expensive and will continue to rise with rising fuel costs. These costs are passed on to the consumer in the form of higher retail prices.

The demand for imported meat products will increase as the populations of Guam and CNMI continue to grow; especially as the U.S. Military increases its presence in the islands. Local consumers will increasingly compete for imported meat product with tourist populations that far exceed the local population. Guam, for example averages 1.2 million visitors annually (Guam Visitor Bureau 2006); 7 times greater than the local population. The annual average number of visitors (544,065) to CNMI is 6 times greater than the local population (CNMI Department of Commerce 2006). Thus, while tourism is important to the economies of Guam and CNMI, the large influxes of visitors creates a tremendous demand on food resources; especially imported meat products. Visitors are often capable and willing to pay higher prices for food than what local consumers can afford. Therefore, livestock production on the islands of Guam, Saipan, Tinian, and Rota is a valuable and important industry that, to a limited extent, can supplement the importation of meat products into the islands. Indeed, as a necessity, the demand for local meat products, as a healthy, safe, and economical alternative to imported meat products will continue to grow.

The increasing demand for local meat products has encouraged an increase in the number of producers in Guam and CNMI. Guam has seen a 23% increase in the number livestock producers while CNMI has had a three-fold increase since 1998 (USDA-NASS 2004). However, while the number of livestock operations has increased, the land available for grazing animals continues to decrease under the pressure of urban development and military buildup. Still on each of the islands there are many hectares of potential grazing land currently unutilized. Tinian, for example, has approximately 2,500 hectares available for lease to locals for grazing through a Military Lands Leaseback program with the CNMI-Department of Public Lands. Outside of the Military Leaseback Lands, there are another 1000 to 1500 hectares of land potentially available for grazing. Whether or not these lands are eventually utilized for grazing livestock depends on many variables including land ownership, government policies, and the ability and availability of livestock producers willing to assume the risk. Lack of experience, training, and financial capital often prevent existing producers from expanding operations and limits the ability new producers to enter into the industry.



Typical cattle raised in Guam and the Mariana Islands are a mix of *Bos taurus* and *Bos indicus* breeding.

Goals and Objectives

The goal of this three-year project is to work in partnership with local farmers, ranchers, technical resource personnel and other interagency collaborators to deploy extension outreach and assistance in grazing and livestock management practices and pasture improvement techniques. In addition, provide assistance and guidance in planning and development of special local needs projects to further benefit the economic viability of livestock producers in the Marianas Islands. Divided into three phases, the objectives of this project are:

Phase 1:

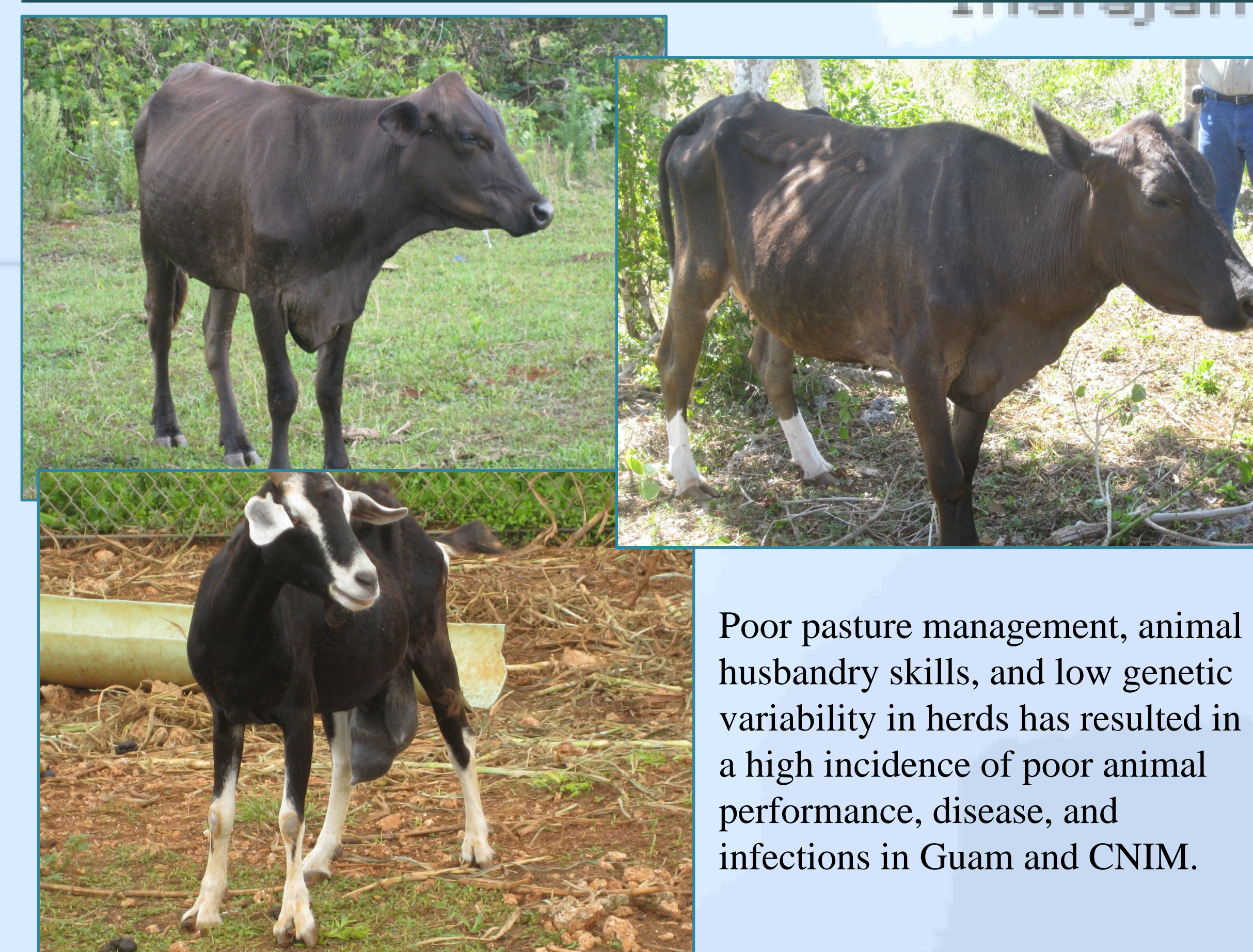
1. Conduct evaluations of land and livestock resource through individual farm visits, advisory meetings, and pasture and herd surveys.
2. Work with local livestock advisory groups for strategic planning and identification of emerging issues critical to sustainable livestock production.
3. Identify cooperating producers and develop demonstration projects and investigative trials for determination of Best Management Practices for pasture improvement.

Phase 2:

4. Develop, organize and provide a series of appropriate grazing and livestock management workshops.
5. Organize and provide artificial insemination education and assistance programs.
6. Develop and disseminate educational and technical publications on Best Management Practices for pasture improvement and grazing and livestock management.

Phase 3:

7. Develop and implement a plan for continued cooperation and partnership in extension outreach and assistance with Guam and the Mariana Islands.



Poor pasture management, animal husbandry skills, and low genetic variability in herds has resulted in a high incidence of poor animal performance, disease, and infections in Guam and CNMI.

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