

### V(A). Planned Program (Summary)

#### Program # 7

#### 1. Name of the Planned Program

Global Food Security and Hunger - Sustainability of Small Scale Swine and Poultry Farms on Guam

Reporting on this Program

#### V(B). Program Knowledge Area(s)

##### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals	10%			
307	Animal Management Systems	90%			
	<b>Total</b>	100%			

### V(C). Planned Program (Inputs)

#### 1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	1.2	0.0	0.0	0.0
Actual Paid Professional	1.0	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

#### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
82858	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
29781	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
31261	0	0	0

### V(D). Planned Program (Activity)

#### 1. Brief description of the Activity

Forage feeding trials for small ruminants were one of the main activities conducted this year. Five varieties of forages were harvested from demonstration plots planted from previous years. This activity proved that protein supplement can be in easy reach for goats when forages are planted nearby the farms. There is no need to buy those imported alfalfa hay. Goats fed with the forages were healthy and a good growth rate.

I worked with our local cattle ranchers to bring in frozen bull semen for genetic upgrading of our cattle population. Inbreeding is becoming a serious problem. It took us almost a year to bring in the semen because of existing quarantine laws. Current regulations have to be amended to meet current importation laws.

## 2. Brief description of the target audience

Primary local clients will include former, existing and potential new animal producers (cattle, swine and layer) both small-scale and subsistence level. On Guam over the past decade, 1,000+ new agriculture land leases have been signed by the Chamorro Land Trust. Many of the producers possess limited resources and are in desperate need of education and technical support programs.

A second target group is the local and regional agricultural professionals. Regional workshops related to animal production will be conducted at the demonstration farm. Extension agents and local and regional professionals from the different Land Grant Institutions from Micronesia and Northern Marianas will participate in activities at the site. Guam will continue to be the source of swine breeders and replacement chicks for Marianas and Micronesia.

A third audience is University agricultural students. The demonstration farm will be utilized as laboratory classroom for students enrolled in agriculture courses (Introduction to Agriculture and Introduction to Animal Science) at the University of Guam.

## 3. How was eXtension used?

eXtension was not used in this program

## V(E). Planned Program (Outputs)

### 1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	150	200	0	0

### 2. Number of Patent Applications Submitted (Standard Research Output) Patent Applications Submitted

Year: 2013  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2013	Extension	Research	Total
Actual	0	0	0

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- # of workshops

Year	Actual
2013	1

**Output #2**

**Output Measure**

- # of extension publications

Year	Actual
2013	2

**Output #3**

**Output Measure**

- # of applied research conducted in demonstration site

Year	Actual
2013	1

**Output #4**

**Output Measure**

- # of one to one contacts

Year	Actual
2013	100

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	# of producers increasing in knowledge and husbandry skills on an integrated to approach to animal and plant farm operations (short term)
2	# of producers indicating adoption recommended practices practices
3	# of producers practicing regular replacements of broodstocks (medium term)
4	# of producers decreasing in feeding imported commercial feeds (medium term)
5	Number of producers reporting inceased dollar returns per sow/laying hen

## **Outcome #1**

### **1. Outcome Measures**

# of producers increasing in knowledge and husbandry skills on an integrated to approach to animal and plant farm operations (short term)

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	25

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Local goat raisers tend to give minimal care and feeding management to goats because they believe that goats can survive on anything that is green on the ground. Goat ranchers lack concept of high quality grasses and forages that should be fed to goats for better growth and performance.

#### **What has been done**

Five varieties of forages were planted at three demonstration sites. Once forages were ready for harvest, feeding trials were conducted using the five varieties and comparisons were made on palatability and acceptance by the goats, incidence of digestive problems and growth rate of the goats.

#### **Results**

Farmers learned the relevance of feeding high quality forages to goats. Protein source for goats can be cheap by planting forages around goat facilities. These forages can act as protein supplements instead of buying imported goat meal or hay. Planting forages around the farm prevent ranchers from the practice of "cut and carry" along highways or areas they have to drive to avail of these feeds.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
302	Nutrient Utilization in Animals
307	Animal Management Systems

## **Outcome #2**

### **1. Outcome Measures**

# of producers indicating adoption recommended practices practices

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	3

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Small-scale agriculture producers are very limited in their resources. Most of them are part-time producers and farm sales are not on a regular basis. They tend to rely on subsidies and any form of assistance from government to improve facilities or implement new technology in their farm. There are many challenges and obstacles that farmers face as they try to improve their farm productivity and profitability.

#### **What has been done**

Producers are encouraged to apply for grants from federal agencies. Two goat farmers visited research goat facilities in the Philippines to observe and experience goat production and pasture management. Demonstration plots of forages were set up at various sites for farmers to see follow. Seedlings of these forages were given to farmers to propagate at their farms.

#### **Results**

Two goat raisers planted forages in their farm. One swine producer adopted the dry-litter method of swine production to save on water and minimize effluents going to the environment. Maintaining the adopted practice can also be a challenge to the raiser even with positive results for the farm. No exerted efforts and time on the ranchers to sustain the practice.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
302	Nutrient Utilization in Animals
307	Animal Management Systems

### **Outcome #3**

#### **1. Outcome Measures**

# of producers practicing regular replacements of broodstocks (medium term)

#### **2. Associated Institution Types**

- 1862 Extension

#### **3a. Outcome Type:**

Change in Condition Outcome Measure

#### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	0

#### **3c. Qualitative Outcome or Impact Statement**

##### **Issue (Who cares and Why)**

Many poultry enthusiasts and raisers wanted to raise 10 to 30 heads of chickens for family consumption and sell any extra production. Getting in new replacements is difficult for these raisers because off-island hatcheries have a minimum order of 100 chicks per shipment. Besides the cost of importation, the permitting process to bring in poultry can also be time-consuming.

##### **What has been done**

The livestock and poultry facility of the Guam Department of Agriculture closed down due to budgetary constraints and retirement of personnel. For the past five years, this facility was able to supply small volume of replacement chicks from purebred breeder stocks brought in from Texas.

##### **Results**

Poultry raisers have to import replacement chicks from Hawaii or in the continental United States.

#### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

## **Outcome #4**

### **1. Outcome Measures**

# of producers decreasing in feeding imported commercial feeds (medium term)

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Knowledge Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	0

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

Guam has non-conventional feedstuffs for livestock feeding (swine, goats and poultry) but most of these resources are underutilized. Most raisers still purchase expensive imported feeds to feed their generally inbred livestock population.

#### **What has been done**

Most of these non-conventional feed materials have been analyzed for nutrient contents and level by a feed laboratory. The results can now be used to formulate local feeds. Local feed materials have been formulated and use in feeding trials in goats and layers. Results were positive in terms of feed consumption and intake, no incidence of digestive upsets and growth rate.

#### **Results**

Processing of raw feed materials is a big challenge for farmers. They have seen the positive results of using these feed materials for livestock feeding but the whole procedures in making the feed would require time, efforts, equipment and storage facilities. It is also difficult to find feed equipment for small-scale feed operation. equipment for

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
307	Animal Management Systems

## **Outcome #5**

### **1. Outcome Measures**

Number of producers reporting increased dollar returns per sow/laying hen

Not Reporting on this Outcome Measure

### **V(H). Planned Program (External Factors)**

#### **External factors which affected outcomes**

- Economy
- Appropriations changes
- Competing Public priorities
- Other (Closure of livestock breeding facility; producers' priorities in the farm.)

#### **Brief Explanation**

1. A new director was appointed at the Guam Department of Agriculture. This brought changes in their programs and personnel. One of the changes was the closure of the livestock and breeding facility. This facility was producing hatching eggs from five different breeds of poultry. Eggs were being hatched and farmers were buying the chicks for their replacement. This facility was also being used for demonstrations and workshop venue. The University of Guam Extension Service and Guam Department of Agriculture had an agreement to operate this facility to address the needs of agriculture producers on island and also for Micronesia.

2. Our unit core funds given to Extension Faculty have diminished through the years. Each faculty used to get \$5000 annually and dropped to \$ 2300 this year. Without any grants to supplement core funds, extension activities to enhanced knowledge and skills of farmers decreased also through the years.

3. Stringent federal and local environmental regulations designed for large commercial farms are also being imposed to small-scale producers. Due to financial limitations of these small producers to install or re-design their facilities, either the farms closed down or decrease animal population to be exempted from new regulations.

### **V(I). Planned Program (Evaluation Studies)**

#### **Evaluation Results**

I did not do a formal evaluation like a survey of any kind among my contacts and clients. It had been a one-to-one sharing of thoughts and ideas with the clients at the site of the demonstration site. The producers and ranchers see the positive results of the demonstration and find it applicable and practical to incorporate the practices in their farm operations. But since farming is not their primary source of income, there is not much time and effort invested from them to implement such proven best management practices.

**Key Items of Evaluation**