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DEPARTMENT OF SCIENCE AND TECHNOLOGY
DOST Regional Office No. XII
and
UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato

Implementation of Upgraded Consultancy Services for MSMEs thru Consultancy for Agricultural Productivity Enhancement (CAPE) Program in Region12

FINAL REPORT

1. Name of Farm/Location: Sox Free-Range Chicken Farm
Address : Brgy. Kipalbig Tampakan, South Cotabato

2. Brief Description of the Farm:

The farm has a total land area of eight (8) hectares which is comprised of two (2) sites (Site 1: 5 hectares loc and Site 2: 3 hectares). Both farm sites are located at Brgy. Kipalbig Tampakan, South Cotabato (Figure 1). The land is an inheritance, and it was established in February 2019 when the farm owner, retired from the government service. The farm is managed by Mr. Bonifacio Pales and assisted by his son, Dr. Chris George Pales.

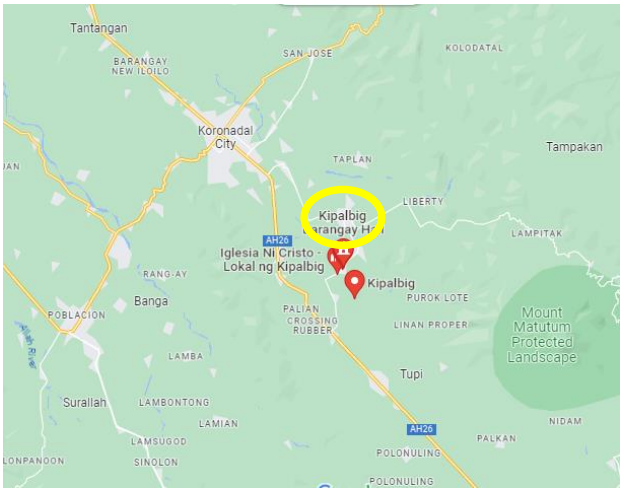

Figure 1. The estimated location of SOX Free-range Chicken Farm at Brgy. Kipalbig, Tampakan, South Cotabato as specified by the yellow circle.

The farm has a loamy type of soil and flat to sloping terrain with an estimated elevation of 400 feet above sea level (ASL). Its location is suitable for propagating fruit trees and for raising livestock and poultry animals. The farm is planted with various fruit-bearing trees with at least 200 hills of cacao, 250 hills of coconut, 100 hills of dragon fruit, and 30 hills of black pepper.

The farm started raising heritage chicken adopting free-range production system in 2019. The breeds of these chickens are Black Australorp, Rhode Island Red, and Barred Plymouth Rock. With the aim to maximize the land area, the farm also extended its operation into rabbit production and raising cattle (15 heads), goat (5 heads), turkey (10 heads), native chicken (20 heads) and mallard duck (400 heads).

Currently, the farm has four (4) regular farm workers where two (2) of them are assigned in heritage chicken production, one (1) in rabbit and other animals, and one (1) in cacao including other farm crops.

1. Technical Problems Encountered by Farm Beneficiary.

COMPONENT 1: FREE-RANGE CHICKEN

1. High feed cost (Pure commercial feeds)
2. High expense cost on commercial supplements.
3. Lack of pasture area for sustainable free-range chicken
4. Poor Breeding program (Low Fertility and Hatching Rate)
5. No Proper implementation of regular health program (deworming, supplements, and Vaccinations)
6. No implementation of biosecurity measures in the breeder house.
7. Poor sanitation practices inside the breeder house and incubation area.
8. Limited/lack of market linkages
9. No proper record keeping and inventory on number of stocks (# of breeders –hens and roosters, # of newly hatched chicks, and # of Pullets); breeding programs, Flock health management, financial inflow/outflow is undertaken.

COMPONENT 2: RABBIT PRODUCTION

1. Poor feeding and nutrition program for rabbits
2. No implementation of proper breeding program for rabbits.
3. No established forage area as primary source of feed for rabbits.
4. Inappropriate housing design (low height of roofing/ceiling; undersize cages/clutches)
5. Rabbit housing is lack of ventilation
6. Filthy water storage containers
7. No implementation of proper and regular health program (deworming, vit administration, etc).
8. Poor sanitation practices inside the rabbit house.
9. No implementation of biosecurity measures
10. Limited local market and lack of market linkages.
11. No proper record keeping and inventory on number of stocks (# of stocks i.e., doe, buck, fryers, kits); breeding programs, health management, financial inflow/outflow is undertaken.

2. CAPE interventions

COMPONENT 1: FREE-RANGE CHICKEN

1. Incorporation of alternative feeds such as Madre de Agua and Azolla in the chicken's diet. These alternative feeds are high in protein and is low cost (almost no cost).

3. Introduced the different natural supplements such as decoction and concoctions.
4. Provision of IEC material, planting material and established alternative forage crops for chicken.
5. Developed and followed the proper breeding and Incubation techniques.
6. Established an isolation area for sick birds.
7. Performed daily cleaning of water storage and changing of water offered to chickens.
8. Enhanced and applied the proper health program in free-range chickens (Vaccination, Vitamin supplementation and Deworming).
9. Provision of dewormers and vitamins.
10. Implementation of proper biosecurity measures in the main gate and each chicken house.
11. Developed and practiced the proper sanitation such as regular cleaning and removal of manure, disinfection and maintain orderliness and cleanliness inside the farm.
12. Ensured basic care, proper provision of feed and water and maintenance activities for the animals.
13. Identified new market and/or established new market linkages through online advertisement (Facebook page).
14. Established a proper record keeping in all farm activities – production and financial aspects.

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COMPONENT 2: RABBIT PRODUCTION

1. Provided one on one technical advisory to the owner on proper nutrition, feeding and breeding program for rabbits including goat and cattle.
2. Provided learning material/guide on rabbit production and management.
3. Provided forage planting materials for the establishment of forage production area.
4. Provided one on one technical advisory to the owner on appropriate or suitable house and cage design for rabbits.
5. Provided learning material on rabbit production and management.
6. Provided technical advisory and emphasized the importance of cleanliness and sanitation on farm equipment and fixtures.
7. Advised the farm worker to perform thorough cleaning of the storage containers.
8. Provided one on one technical advisory to the owner on proper livestock health management.
9. Provided veterinary products (vitamins, antibiotic, and dewormer).
10. Provided one on one technical advisory to the owner on proper sanitation practices such as regular cleaning and regular removal of manure, disinfection, and preventive measures to maintain cleanliness of the farm and its perimeter to avoid disease infestation.
11. Provided one on one technical advisory to the owner on proper implementation, protocol, and importance of biosecurity measures in the farm.
12. Assisted the owner on the identification of other possible new market for rabbit.
13. Shared online linkage in terms of processing and development of rabbit meat products.
14. Provided one on one technical advisory and guide on proper recording and rabbit colonies monitoring/ inventory program.
15. Provided one on one lecture on the basics of animal husbandry practices including care and maintenance activities of the animals considering the ease and comfort of animals.

3. Accomplishments as against interventions

COMPONENT 1: FREE-RANGE CHICKEN

Interventions	Accomplishments
A. Nutrition, Feeding, and Breeding	
▪ Incorporation of alternative feeds such as Madre de Agua and Azolla in the chicken's diet. These alternative feeds are high in protein and is low cost (almost no cost). ▪ Introduced the different natural supplements such as decoction and concoctions. ▪ Provision of IEC material, planting material and established alternative forage crops for chicken ▪ Developed and followed the proper breeding and Incubation techniques.	▪ Incorporation of low-cost alternative feeds to the diets of chicken. ▪ Practicing natural supplements for free-range chickens. ▪ Established pasture area and incorporation of alternative feeds to the diets of chickens ▪ Established and practiced the proper breeding and incubation techniques ▪ Established an isolation area for sick birds ▪ Enhanced and applied the proper health program for free-range chickens (Vaccination, Vitamin supplementation and Deworming).
B. Housing and other Facilities	
▪ Established an isolation area for sick birds. ▪ Daily cleaning of water storage and changing of water offered to chickens	
C. Health Management, Biosecurity, and sanitation Practices	
▪ Enhanced and applied the proper health program in free-range chickens (Vaccination, Vitamin supplementation and Deworming). ▪ Provision of dewormers and vitamins. ▪ Implementation of proper biosecurity measures in the main gate and each chicken house. ▪ Developed and practiced the proper sanitation such as regular cleaning and removal of manure, disinfection and maintain orderliness and cleanliness inside the farm.	▪ Implemented a proper biosecurity measure in the main gate and each chicken house. ▪ Practiced the proper sanitation such as regular cleaning and removal of manure, disinfection and maintain orderliness and cleanliness inside the farm. ▪ Established a local market through online advertisement (facebook page).
D. General Husbandry practices/Animal Welfare	

▪ Ensured basic care, proper provision of feed and water and maintenance activities for the animals.	
E. Marketing	
▪ Identified new market and/or established new market linkages through online advertisement (Facebook page).	▪ Established a local market through online advertisement (facebook page).

COMPONENT 2: RABBIT PRODUCTION

Interventions	Accomplishments
A. Nutrition, Feeding, and Breeding	
• Provided one on one technical advisory to the owner on proper nutrition, feeding and breeding program for rabbits including goat and cattle. • Provided learning material/guide on rabbit production and management. • Provided forage planting materials for the establishment of forage production area.	▪ The farm has already established its forage garden and is currently expanding their forage production area by continuous planting and maximization of their available land area. ▪ The rabbits are now fed with quality forages (grasses and legumes) that were propagated in the forage garden of the farm.
B. Housing Management	
▪ Provided one on one technical advisory to the owner on appropriate or suitable house and cage design for rabbits. ▪ Provided learning material on rabbit production and management. ▪ Provided technical advisory and emphasized the importance of cleanliness and sanitation on farm equipment and fixtures. ▪ Advised the farm worker to perform thorough cleaning of the storage containers.	▪ Repair of some existing rabbit cages was undertaken. ▪ The unnecessary housing fixtures and old cages were removed to improve the ventilation of the rabbit housing. ▪ Water containers and waterers were thoroughly cleaned and disinfected.
C. Health Management, Biosecurity, and Sanitation Practices	
▪ Provided one on one technical advisory to the owner on proper livestock health management.	▪ The farm has adapted and implemented regular health program for rabbits.

▪ Provided veterinary products (vitamins, antibiotic, and dewormer). ▪ Provided one on one technical advisory to the owner on proper sanitation practices such as regular cleaning and regular removal of manure, disinfection, and preventive measures to maintain cleanliness of the farm and its perimeter to avoid disease infestation. ▪ Provided one on one technical advisory to the owner on proper implementation, protocol, and importance of biosecurity measures in the farm.	▪ An improved implementation of biosecurity measure in the farm has already been observed compared the previous farm visitation and consultation. ▪ The rabbit housing including its perimeter area were observed cleaned and in order. Farm wastes and garbage were properly segregated to biodegradable and non-biodegradable. A significant improvement in terms of waste disposal management of the farm has been observed.
D. Marketing	
▪ Assisted the owner on the identification of other possible new market for rabbit. ▪ Shared online linkage in terms of processing and development of rabbit meat products.	▪ Accessed to possible online market
E. Recordkeeping	
▪ Provided one on one technical advisory and guide on proper recording and rabbit colonies monitoring/ inventory program.	▪ The farm has started to make a record on its farm activities such as medication program and stocks inventory.
F. General Husbandry Practices/Animal Welfare	
▪ Provided one on one lecture on the basics of animal husbandry practices including care and maintenance activities of the animals considering the ease and comfort of animals.	▪ A significant improvement on the overall production management system of the farm has been observed.

4. Cost and return analyses before and after CAPE interventions Partial Budget Analysis

COMPONENT 1: FREE-RANGE CHICKEN

(Before Intervention)

COST AND RETURN ANALYSIS	
RETURNS:	
Cash	
Sales of Chicks and Growers (liveweight)	**36,000.00**
Total Cash Returns	**36,000.00**
Non-cash	
Home Consumption	**4000.00**
Total Non-cash Returns	**4,000.00**
TOTAL RETURNS	**32,000.00**
EXPENSES	
Cash	
Utilities/medication Expense	**1000.00**
Feed Cost	**14,400.00**
Labor Cost	**6,000.00**
TOTAL CASH EXPENSE	**21,400.00**
TOTAL EXPENSES	**21,400.00**
NET RETURNS	**10,600.00**
NET PROFIT MARGIN	**33.12%**

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(After Intervention)

COST AND RETURN ANALYSIS	
RETURNS:	
Cash	
Sales of Chicks and Growers (liveweight)	**36,000.00**
Total Cash Returns	**36,000.00**
Non-cash	
Home Consumption	**4000.00**
Total Non-cash Returns	**4,000.00**
TOTAL RETURNS	**32,000.00**
EXPENSES	
Cash	
Utilities/medication Expense	**450.00**
Feed Cost	**10,800.00**
Labor Cost	**6,000.00**
TOTAL CASH EXPENSE	**17,250.00**
TOTAL EXPENSES	**17, 250.00**
NET RETURNS	**14,750.00**
NET PROFIT MARGIN	**46.10%**

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COMPONENT 2: RABBIT PRODUCTION

(Before the intervention)

COST AND RETURN ANALYSIS	
RETURNS:	
Cash	
Sales of rabbit (liveweight)	**7,000.00**
Total Cash Returns	**7,000.00**
Non-cash	
Home Consumption	**3,500.00**
Total Non-cash Returns	**3,500.00**
TOTAL RETURNS	**10,500.00**
EXPENSES	
Cash	
Utilities Expense	**500.00**
Feed Cost	**3,600.00**
Labor Cost	**4,000.00**
TOTAL CASH EXPENSE	**8,100.00**
TOTAL EXPENSES	**8,100.00**
NET RETURNS	**2,400.00**
NET PROFIT MARGIN	**23%**

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(After the intervention)

COST AND RETURN ANALYSIS	
RETURNS:	
Cash	
Sales of rabbit (liveweight)	**7,000.00**
Total Cash Returns	**7,000.00**
Non-cash	
Home Consumption	**1,750.00**
Total Non-cash Returns	**1,750.00**
TOTAL RETURNS	**8,750.00**
EXPENSES	
Cash	
Utilities Expense	**500.00**
Feed Cost	**1,656.00**
Labor Cost	**4,000.00**
TOTAL CASH EXPENSE	**6,156.00**
TOTAL EXPENSES	**6,156.00**
NET RETURNS	**2,594.00**
NET PROFIT MARGIN	**30%**

5. **Impact of CAPE interventions (income production volume farm operation etc.)**

1. Increased income of the farm
2. Reduced feed cost
3. Improved overall production management practices of the farm.
4. Improved animal welfare
5. Reduction of waste treatment costs
6. Improvement of working conditions

6. **Comments/recommendations to ensure continuous adoption of yield increasing technologies**

1. Expansion of the forage garden.
2. Proper implementation of alternative feeding and supplementation practices
3. Maintain biosecurity measures.
4. Close monitoring to all animals.
5. Observe proper management practices in the farm.

7. **Pictures before and after CAPE interventions**

Status of the farm before the intervention:

Figure 1. A major problem on housing ventilation and sanitation was observed.

Figure 2. Existing forage (Madre de agua) has not been maximized for forage production. No forage garden/area was established to serve as primary source of feed for rabbits.

Figure 3. No biosecurity measures implemented around the farm and in every poultry house.

Status of the farm after the intervention (1st to 2nd visitation):

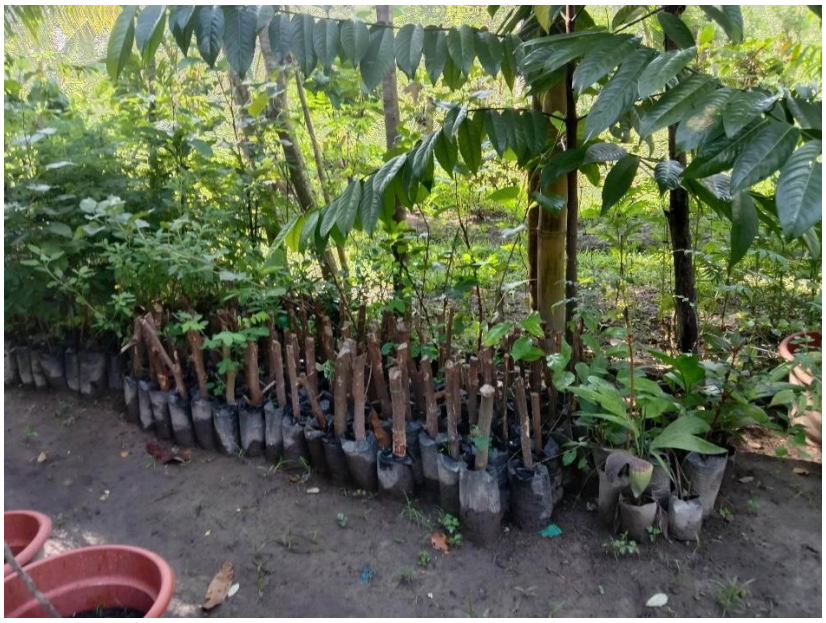

Figure 4. The farm has started to propagate forage seedlings for the establishment of its forage area.

Figure 5. Newly established forage area of the farm. The area was planted with Madre de agua ang Indigofera

Figure 6. Another area of the farm that has been already planted with Super Napier (Pakchong) grass. The farm is currently making efforts to maximize their area and add more napier seedlings to be planted in their farm.

Figure 7. An improved status of the rabbit housing after the first and second farm visitation/ intervention.

Figure 8. Incorporation of alternative feeds to the diets of chicken.

Figure 9. Implementation of Biosecurity measures in the farm.

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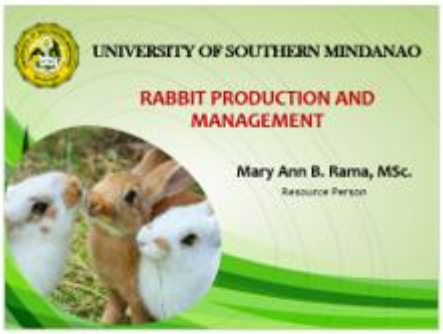
8. Other supporting documents such as test results/soil analysis. Gantt chart of activities, farm layout/sketch, etc.

Learning Material/Guide on Rabbit Production



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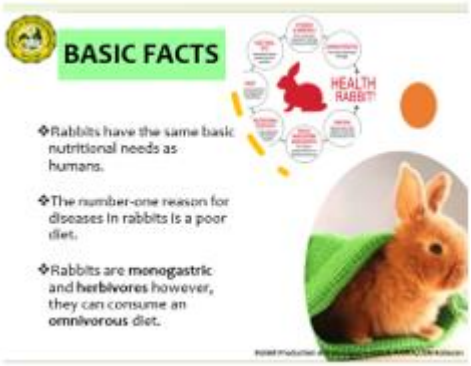

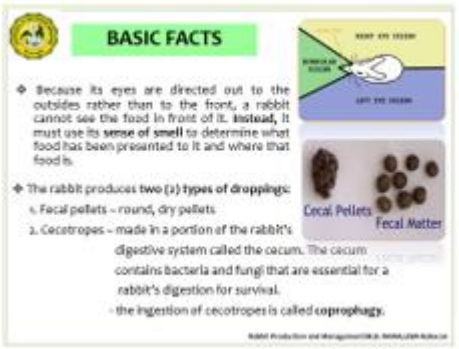

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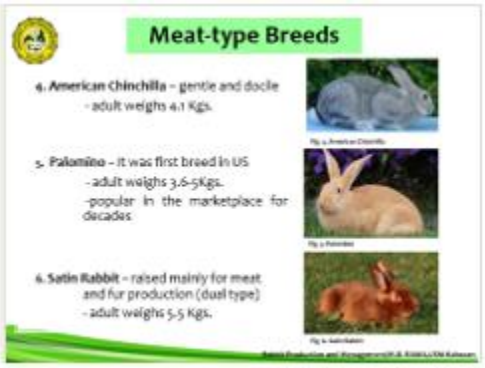

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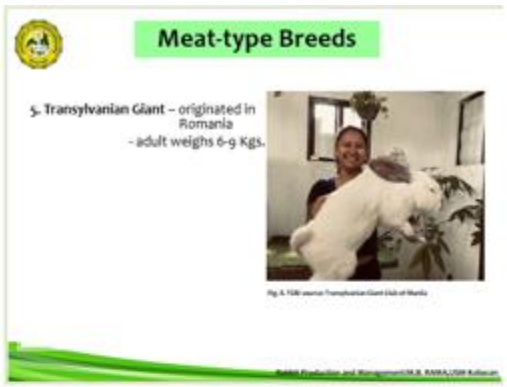

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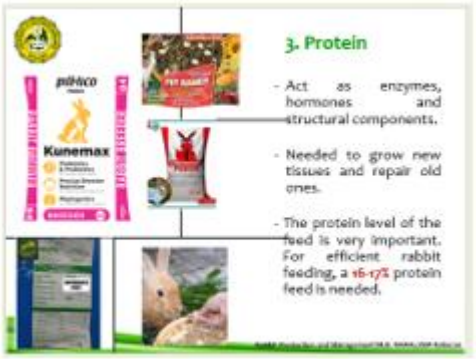

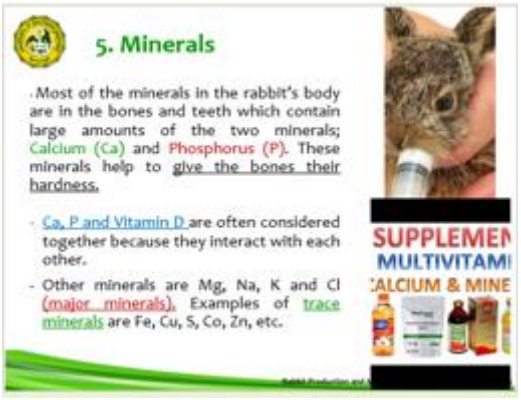

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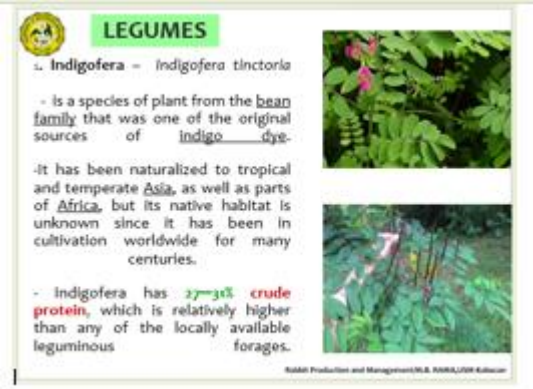

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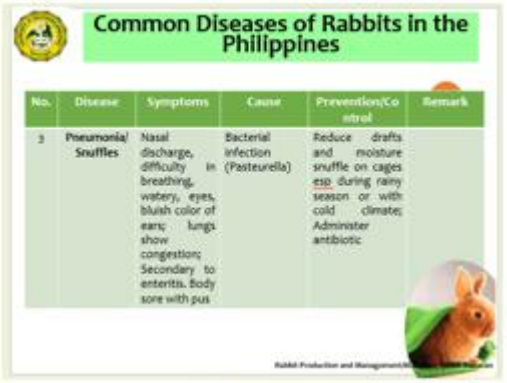

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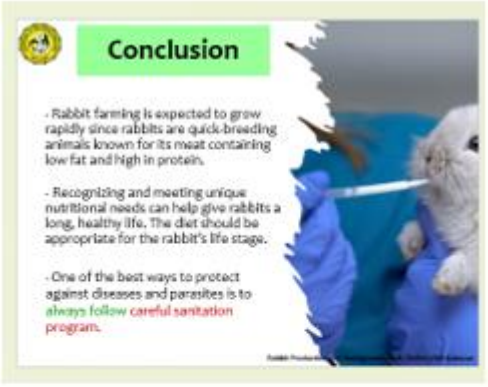
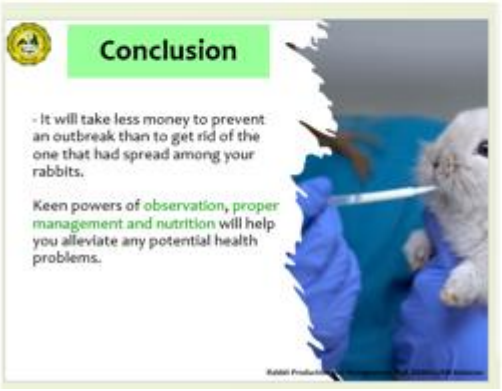
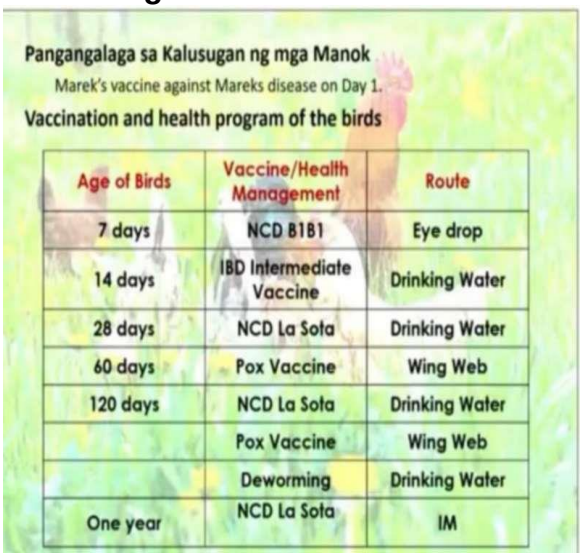




Health Program for Free-range Chickens



Age of Birds	Vaccine/Health Management	Route
7 days	NCD B1B1	Eye drop
14 days	IBD Intermediate Vaccine	Drinking Water
28 days	NCD La Sota	Drinking Water
60 days	Pox Vaccine	Wing Web
120 days	NCD La Sota	Drinking Water
	Pox Vaccine	Wing Web
	Deworming	Drinking Water
One year	NCD La Sota	IM

9. Recommendations to improve the CAPE program

1. **Strengthen Collaboration:** Foster stronger collaborations between academic institutions, research organizations, industries, and government agencies. Encourage cross-disciplinary collaboration to address complex challenges and promote knowledge sharing.

2. **Foster Entrepreneurship:** Provide training and support for farmers/ owners to develop entrepreneurial skills.

3. **Enhance Public Awareness:** Increase public awareness of the CAPE program and its achievements.

Prepared by:

PRECIOUS AMOR A. BESO

MARY ANN B. RAMA

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CAPE Consultancy Firm Representative

Certified Correct:

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DOST Regional Office

Conforme:

BONIFACIO PALES
PRINT NAME/SIGNATURE
Farm Beneficiary