

**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE
(*Bos Indicus*) IN THE SELECTED BARANGAYS IN THE
MUNICIPALITY OF UBAY, BOHOL**

**College of Teacher Education
BOHOL ISLAND STATE UNIVERSITY
Zamora, Bilar, Bohol**

**MARY ANN T. LABAGRIL
MADELYN A. QUILATON
ROCHIE MAR R. ROMANA**

JUNE 2022

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A Thesis
Presented to the Faculty of the
College of Teacher Education
BOHOL ISLAND STATE UNIVERSITY
Zamora, Bilar, Bohol

In Partial Fulfilment
of the Requirements for the Degree of
Bachelor of Technology and Livelihood Education

Mary Ann T. Labagril
Madelyn A. Quilaton
Rochie Mar R. Romana

June 2022

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This thesis entitled, "ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos indicus*) RAISERS IN THE SELECTED BARANGAYS IN THE MUNICIPALITY OF UBAY, BOHOL", was prepared and submitted by Mary Ann T. Labagril, Madelyn A. Quilaton, and Rochie Mar R. Romana, in partial fulfilment of the requirements for the degree of Bachelor of Technology Livelihood Education, major in Agri-Fishery Arts has been examined and recommended for acceptance and approval for oral defense.

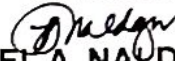
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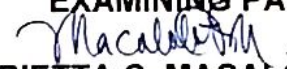

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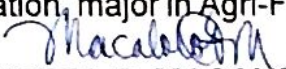

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Mary Ann T. Labagril
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ABSTRACT

The research was conducted in the Municipality of Ubay, from January 17-18, 2022. The general objective of the study was to assess the feeding system of beef cattle raisers in the Municipality of Ubay, Bohol. It sought to answers the following questions: demographic profile, farming profile, feeding strategy of beef cattle raisers, types of grass usually eaten by the beef cattle and the common problems encountered in beef cattle raising. There were 50 respondents with top 3 barangays with the highest number of beef cattle raisers. Based on the results, the cattle raisers aged ranging from 30 years old and above, both males and females, some were elementary graduate, others are degree holder , most of them were married and the main source of income were farming, majority of them experience raising beef cattle for approximately 11-20 years. However, they owned a land area of 500 sq. meters and above, commonly were engaging backyard raising. Cattle raisers typically have 5 below heads grown, which are primarily crossbreed beef cattles. Furthermore, cattle raisers have attended seminar/trainings. Moreover, they practiced free range system of feeding the cattle. The study revealed that scarcity of grasses or forages was of the problems encountered in raising beef cattle. From the results of the data gathered, the researcher concluded that most of the farmer were undergraduate. The researcher have concluded that the farmers need more knowledge from the expert which can improved their ways on raising the cattle. Therefore we recommend that the local government unit of Ubay should conduct seminars related to cattle raising for the sake of the farmers.

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Chapter 1

THE PROBLEM AND ITS SCOPE

Rationale

Cattle feeding is a high risk industry. During some years, an operation may not be able to recoup its out-of-pocket expenses. The beef industry is highly cyclical, and cattle prices can fall dramatically when ranchers reduce herd sizes due to drought and high feed costs. There are usually few barriers to entry into the cattle feeding business. Feeding cost per animal decrease as the number of animals in the operation increases. Beef feeding enterprise are not as well suited to small- scale and part-time farms as beef cow-calf operations due to the high risks and economies of scale that favor larger operations.

Beef cattle production systems are defined as all commercial cattle production systems where the purpose of the operation includes some or all of the breeding, rearing and finishing of cattle intended for beef consumption.

Grazing and backgrounding some cattle feeders buy lightweight feeder calves, graze them in the spring and summer, and finish them all in the feedlot beginning in late summer to fall. Backgrounding is a type of program that typically combines pasture systems and lightweight cattle. These cattle require exceptional nutrition and management. With these, well- managed and high quality pastures can be used effectively.

A cattle feeding enterprise's feeding system should be adaptable. Corn silage and, on rare occasions, hay crop silages can be incorporated into the

feeding program for farmer- feeders. The amount that forages contribute to a ration is determined by the price of feed grains or food processing by-products with equivalent feed value. When grain prices are relatively low, increasing forages in feedlot cattle diets will generally increase the cost of weight gain. Specific ration composition is determined by the combination of available feedstuff that will minimize the cost of weight gain, provide a balanced diet, and meet market endpoints. This feed mix will change as grain prices fluctuate.

The most common issues encountered in backyard operations are inefficient breeding techniques, insufficient feed supply, and a lack of adequate technical support, veterinary, and extension services from the government. This scenario reduced the number and performance of cow- calf operations in the country.

The most common limiting factor in backyard cattle production, is poor feed quality or insufficient feed. Cattle production is highly dependent on the quality and quantity of feed available. Grasslands and native pastures only provide fodder for animals' maintenance, not improved reproduction or performance. Feed quality, rather than quantity, is critical in cattle feeds and feeding. Nonetheless, cattle production in the Philippines is essentially small-scale.

With this, the researchers aim to assess the feeding system of beef cattle raisers in the selected barangays in the municipality of Ubay, Bohol.

Literature Background

The following related readings served as the legal bases of the study:

Republic Act No. 1556, an act to regulate and control the manufacture, importation, labelling, advertising and sale of livestock and poultry. Section 3. Feeds or feeding stuff shall include all such articles used for the purpose of feeding purporting to supply proteins, carbohydrates, fats, minerals, vitamins, antibiotics and/or correcting nutritional disorders. Such articles may be locally produced or imported, mixed or in the form of simple ingredients.

Republic Act No 9296, ordained the "Meat Inspection Code of the Philippines" to strengthen the country's meat inspection system to assure safety and quality of meat and meat products for human consumption both in the domestic and international markets.

Republic Act 11511, and amendment to RA 10068 or the Organic Agriculture Act of 2010, seeks to beef up the national organic agricultural program and promote the consumption of organic products by launching a nationwide educational awareness campaign for consumers.

In Article XII, Section 5 of the Philippine Constitution states that they should recognize the right of farmers, farm workers, and landowners and provide support to agriculture through appropriate technology and research, and adequate, financial, marketing, and other support services (cited on Duat's study, 2017).

The safety and quality of animal feed is also vital for preventing hazardous substances entering the food. Feed analysis laboratories are essential for ensuring

accurate information on the composition of feed ingredients and determining the level of desirable and undesirable substances, enabling the production of safe balance diets for livestock (FAO, 2014).

Cattle feeding is a high-risk business. During some years, an operation may not recover out-of-pockets costs. The beef industry is very cyclical and cattle prices can fall dramatically when beef operations reduce herd sizes because of drought and the high cost of feed (Kime & Harper, 2014).

Meat is the most valuable livestock product. Meat is composed of protein and amino acids, minerals, fats and fatty acids, vitamins and other bioactive components, and small quantities of carbohydrates. From the nutritional point of view, meat's importance is derived from its high quality protein, containing all essential amino acids and its highly bioavailable mineral and vitamins (FAO, 2019).

Giving farm animals more space, more natural environment, more companions does not right the fundamental wrong any more than giving lab animals more anesthesia or bigger, cleaner cages would right the fundamental wrong in their case (Stucki, 2020).

As stated in Republic Act 8435, it prescribes to enhance their profitability and prepare the sectors for the challenges of globalization through an adequate focused and rational delivery of necessary support, services, and appropriating funds (Department of Agriculture. DA, 2012).

Stated in the Republic Act 8485 is to protect and promote the welfare of animals in the Philippines by supervising and regulating the establishment and operations of all facilities utilized for breeding, maintaining, keeping, treating or training of all animals (officialgazette.gov.ph).

The following related literature provide background information and discussion of the study:

Feed resources and nutrition constitute the principal technical constraints to ruminant production in Asia. Four main categories of feed resources are potentially available for use of smallholder crop-animal system. These are pastures (native and improved grasses, herbaceous legumes and multi- purpose trees), crop residues, agro- industrial by- products (AIBPs), and non- conventional feed resources (NCFRs). Priorities for the use of crop residues in terms of nutrient potential and animal species are indicated (Devendra & Sevilla, 2002)

One of the major economic factors influencing the profitability of beef cattle enterprises is the provision of feed, which represents up to three-quarters of total direct costs. In addition, within the context of climate change and more restrictive environmental legislation, beef production is under increased scrutiny. Consequently, there is considerable interest in improved feed efficiency as a means of augmenting the economic and environmental sustainability of beef production systems. (Nielsen, 2013)

Feed provision is one of the greatest cost of beef production and, with the increasing costs of feed, will remain so for the foreseeable future. Improvement in

efficiency has the potential to not only increase profits for cattle producers, but also to decrease the environmental footprint of beef cattle production. Both are important in addressing the challenges of increasing feed costs and land pressure (Moore, Mujibi & Sherman, 2009).

Feed intake is a function of meal size and frequency and is regulated by a combination of physical and metabolic mechanisms, with the relative importance of these two processes dependent on prevailing dietary characteristics (Fitzsimons, McGee, Keogh, Waters & Kenny, 2017). Feeding behaviour is determined by the integration of central and peripheral signals in brain feeding centres (Allen, 2014).

Feed intake plays an important economic role in beef cattle, and is related with feed efficiency, weight gain and carcass traits. However, the phenotypes collected for dry matter intake and feed efficiency are scarce when compared with others measures such as weight gain and carcass traits (Santana, Utsunomiya, Neves, & Gomes, 2014).

The availability and efficient use of the feed resources in Asia are the primary drivers of performance to maximize productivity from animals. Feed security is fundamental to the management, extent of use, conservation and intensification for productivity enhancement. The awesome reality is that current supplies of animal proteins are inadequate to meet human requirements in the face of rapidly depleting resources: arable land, water, fossil fuels, nitrogenous and other fertilizers, and decreased supplies of cereal grains (Devendra & Leng, 2011).

Energy and protein resources are of prime importance for ruminants as they stimulate microorganisms in the rumen and enhance the productive functions of the animals. Cassava roots in the form of dry cassava chips or pellets as energy resources and dried cassava leaves and cassava hay as protein sources have been used successfully in ruminant rations (Wanapat, 2009).

There is a growing body of evidence that there is genetic variation in beef cattle feed intake relative to their liveweight and weight gain. Difference in feed intake, above and below that expected or predicted on the basis of size and growth, is measured as residual feed intake. Variation in residual feed intake must be underpinned by measurable differences in biological processes (Richardson et al. 2004).

Variation of the energy thresholds at which feeding started and finished had little effect on the predictions, except at extreme values. Manipulation of animal parameters in order to simulate growth, fattening, pregnancy and lactation yielded predicted changes in daily food intake which agreed quite well with observed changes. Parameters of the digestion, passage and availability of feed were varied in order to simulate changes in feed quality, restricted feeding and feed availability with reasonable success (Forbes, 2011).

Animal's feed efficiency in growing cattle (i.e. the animal ability to reach a market or adult BW with the least amount of feed intake), is a key factor in the beef cattle industry. Feeding systems have made huge progress to understand dietary factors influencing the average animal efficiency (Hijar, Ismail, & Kenny, 2018).

Improvements in feed efficiency of beef cattle have the potential to increase producer profitability and simultaneously lower the environmental footprint of beef production. Although there are many different approaches to measuring feed efficiency, residual feed intake (RFI) has increasingly become the measure of choice. Defined as the difference between an animal's actual and predicted feed intake (based on weight and growth), RFI is conceptually independent of growth and body size (Fitzsimons & Kenny, 2018).

Nutrient Requirements of Beef Cattle represents a comprehensive review of the most recent information available on beef cattle nutrition and ingredient composition that will allow efficient, profitable, and environmentally conscious beef production (National Academies Press, 2016).

Natural replete with observations on feeding, yet only recently have investigators begun to treat feeding as a device whose performance- as measured in net energy yield/ feeding time or some other units assumed commensurate with fitness- may be maximized by natural selection (Schoener, 1971).

The feeding system for a cattle- feeding enterprise should remain flexible. The extent that forages contribute to a ration is determined by the price of feed grains or food processing by- products with equivalent feed value. Increasing forages in the diet of feedlot cattle will generally increase the cost of weight gain (due to slower weight gain and higher carrying cost) when grain prices are reasonably low. Specific ration composition is determined by the combination of available feedstuffs that will minimize the cost of weight gain, provide a balance

diet, and reach desired endpoints for the market (Comerford, Kime, & Harper, 2020).

The availability of local feed resources in various seasons can contribute as essential sources of carbohydrate and protein which significantly impact rumen fermentation and the subsequent productivity of the ruminant. Recent developments, based on enriching protein in cassava chips, have yielded yeast fermented cassava chip protein (YEFECAP) providing up to 47.5% crude protein (CP), which can be used to replace soybean meal (Wanapat, Kang & Polyorach, 2013).

Local feed resources, particularly low-quality roughages and agricultural crop-residues, are of prime importance for ruminants raised in the tropics. These feeds exhibit close relationships with rumen ecology, microbes and rumen fermentation patterns. A number of dietary factors could influence rumen fermentation especially the basal roughage source, its physical form and fermentation end-products (Wanapat, 2000).

Introduction to plant forages in these systems has the potential to increase substantially the quality and quantity of available forages, thus providing fodder to supplement low- quality naturally occurring forages and crop residues. Adoption of forages by smallholder farmers in the rain fed upland areas of the Philippines is conditioned by dual- purpose role of forage plants. A number of forage species have been used as contour hedgerow species for the reduction of soil erosion (Ehui, 2003).

Energy and protein sources are of prime importance for ruminants as they stimulate microorganisms in the rumen and enhance the productive functions of the animals. Cassava roots in the form of dry cassava chips or pellets as energy sources and dried cassava leaves and cassava hay as protein sources have been used successfully in ruminant rations. These uses of cassava could provide year-round feed which results in a high yield and good quality of milk and contribute to a more lucrative dairy and beef cattle enterprise, especially for small-holder dairy farming systems. There are many other available feed resources in the tropics of potential use in ruminant feeding and particularly in the development of food-feed-systems that are not only beneficial for human and animals but also for the environment (Wanapat, 2008).

Feed resources and nutrition constitute the principal technical constraints to ruminant production in Asia. Four main categories of feed resources are potentially available for use in smallholder crop–animal systems. These are pastures (native and improved grasses, herbaceous legumes and multi-purpose trees), crop residues, agro-industrial by-products (AIBPs), and non-conventional feed resources (NCFRs). Priorities for the use of crop residues in terms of nutrient potential and animal species are indicated (Sevilla et al., 2002).

Feeding cattle successfully is as much art and judgment as science. Judgment is required to balance between over-and under-feeding. Under-feeding limits performance and possibly Quality Grade. Feeding too much increase feed waste and more importantly can trigger acidosis poor performance, and increased death loss (Northern broadcasting, 2019).

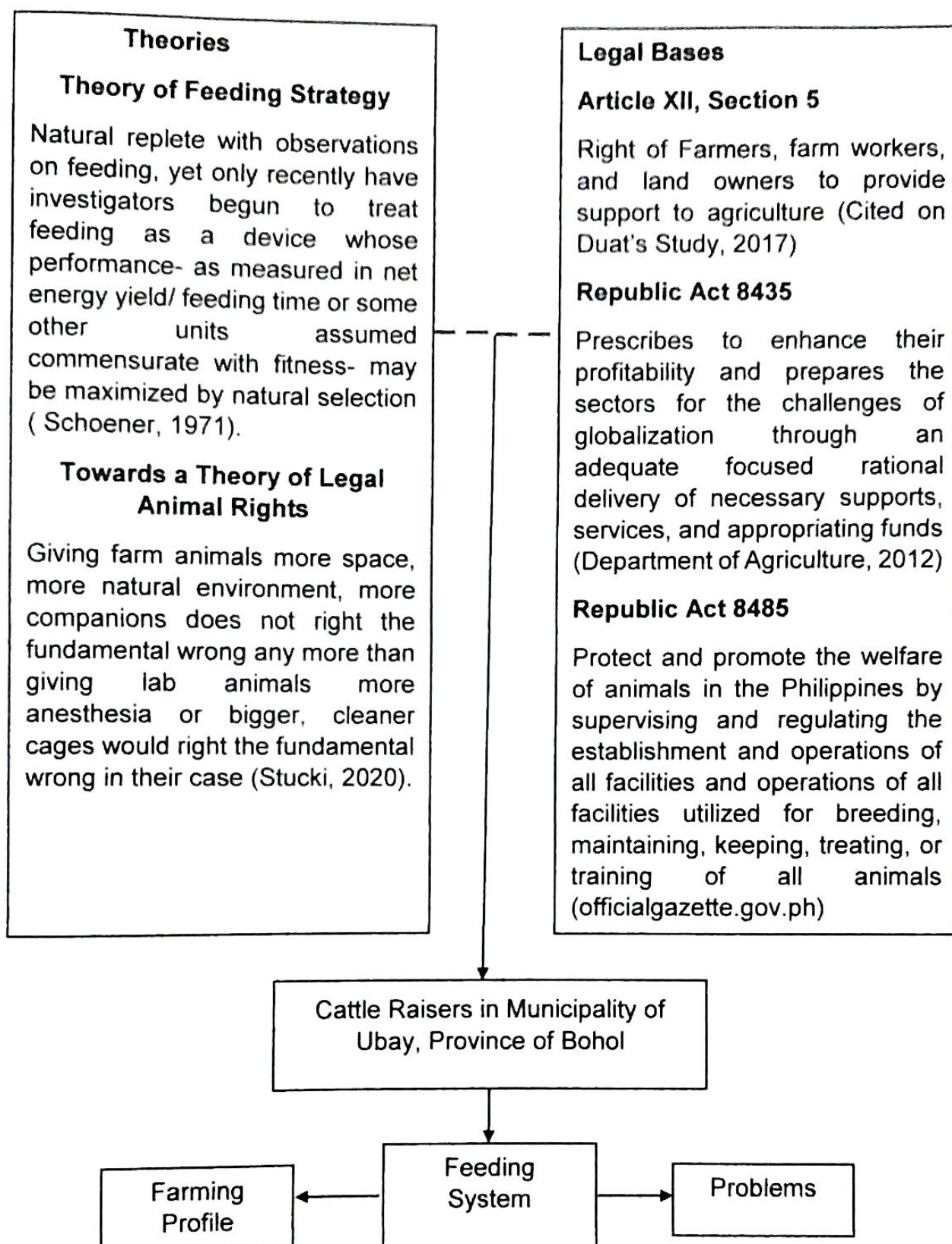


Figure 1: Theoretical and Conceptual Framework of the Study

THE PROBLEM

Statement of the Problem

The main objective of the study was to assess the different feeding system of beef cattle (*Bos indicus*) raisers in the Municipality of Ubay.

Specially, it sought to answer the following questions;

1. What is the farming profile of the respondents in terms of:

1.1 sex;

1.2 age;

1.3 civil status;

1.4 educational attainment;

1.5 occupation; and

1.6 number of years in beef cattle production;

1.7 farm size;

1.8 farm site; and

1.9 total number cattle raised

2. What is the frequency used by the cattle raiser in terms of:

2.1 types of feed

2.2 feeding system

3. What are the challenges encountered in raising beef cattle

4. What action plan can be proposed based on finding.

Significance of the Study

Beef cattle production is an integral part of farming in the rural areas in the Philippines. And thus, the outputs of this study would benefit the following groups of people and institutions:

Farmers. The output of this study would be useful to the local farmers that would engaged in beef cattle production. It would help in promoting to create techniques and ideas in raising beef cattle in terms of feeding system.

Researcher. This study would benefit the researchers to serve as their references in conducting their field study.

Extension workers. The outputs of this study would be useful to the extension workers to promote the best feeding system in beef cattle production.

Academe. The results of this study would benefit the institution in extending the different technologies made from the institution into the local farmers in different towns of Bohol.

Government. This study could help the government agencies / LGU's to identify the needs and profiling of the local beef cattle raisers and other cattle farmers.

Department of Agriculture. This study help the agriculture department to identify the needs of the beef cattle raisers.

Environmental Impact. The outputs of this study would give insights to raise beef cattle and feed the cattle with the proper feeds which is the country's primary concern to sustain the present generation and the future generations.

Economic Impact. Other beef cattle raisers would apply the best feeding system because of the fact that it has the sufficient nutrients needed by the beef cattle. This would help the beef cattle growers by providing a new way of feeding their beef cattle. Beef cattle growers would be able to use their own feeding system based on their preference and they would be able to lessen the labour cost and feed cost.

RESEARCH METHODOLOGY

Design

The data needed were collected by conducting a survey. The questionnaire written in English form in collecting the data. Purposive sampling was done.

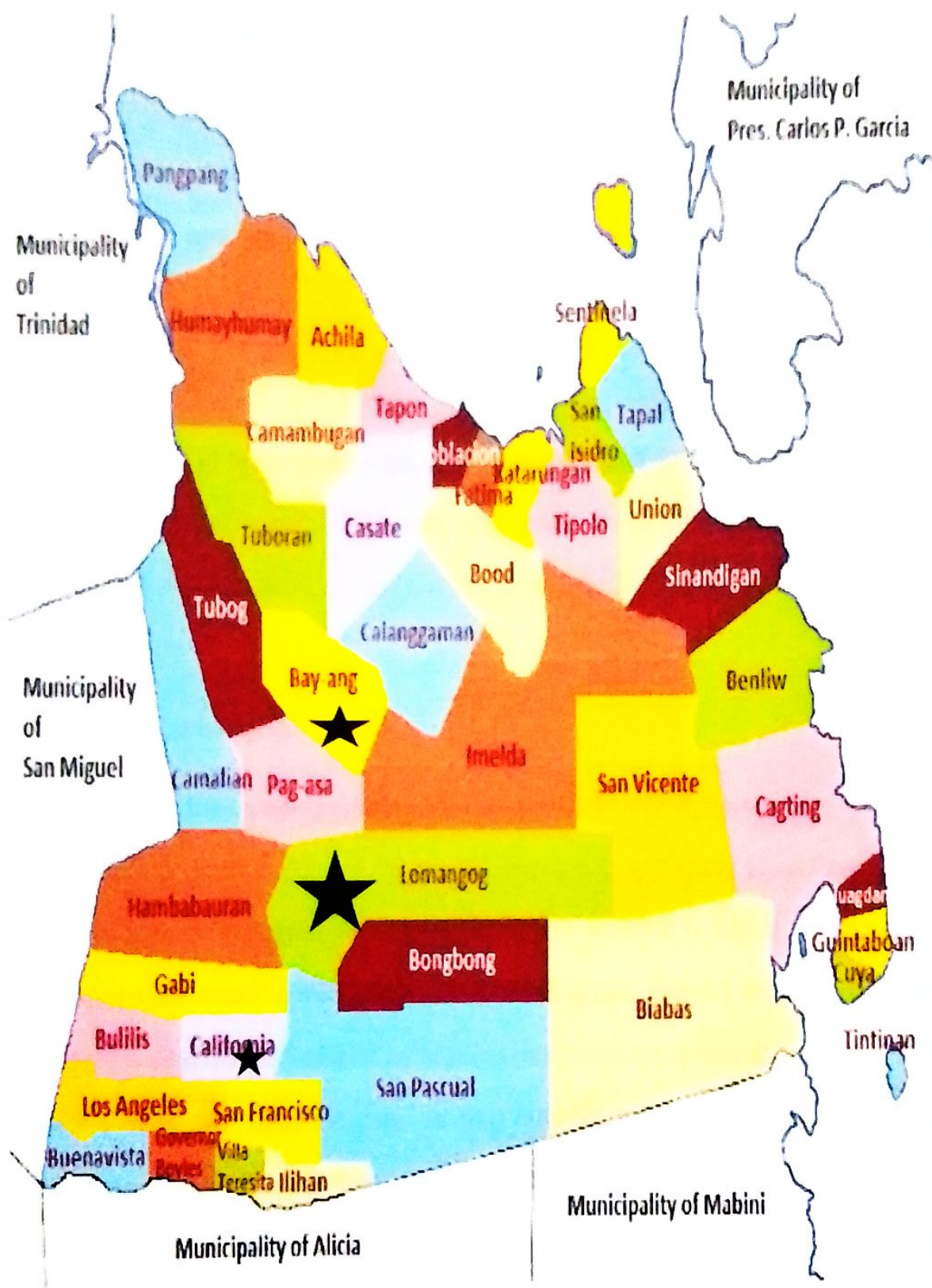
Environment and Participants

The study covered three barangays in the Municipality of Ubay. The respondents were one hundred (100) and would be based on the data from Barangay Lomangog, Barangay California and Barangay Bay-ang Office.

Municipality of Ubay

Ubay has a number of business establishment commercial trading firms engage in retail and wholesale. The regular market day is Monday and local

traders from neighboring towns come to sell their merchandise consisting mostly of agricultural products and small consumer items like used clothes, household utensils, and other product. Ubay also provides a market for the neighboring island municipality of Pres. Carlos P. Garcia. Another well-known public market is located in Barangay San Pascual, south of the municipality. If you are looking for a place to escape of the noise and pollution in the city, Ubay Stock Farm is one of your choices. Ubay Stock Farm Bohol is the oldest and largest government livestock facility in the Philippines, the facility have 3,600 hectare. The facility have different farm animals, cow, carabao, horse, chicken, turkey, duck, goat and many more. And they produce product from the milk of the carabao they create it to yogurt. Since Ubay have 44 barangay's the researcher did purposive sampling in chosen the respondents.



LEGEND: ★ - STUDY SITES

Figure 2: Map showing the target site

Barangay Bay-ang

People in the barangay are mostly farmers whose living is based on planting rice, camote, cassava, banana and other vegetables. Some of the population weave mats and produce palm oil and coconut products. There are 30 cattle raisers in this barangay.

Barangay California

People in the barangay are mostly farmers who live by planting rice, taro, camote, cassava, banana, and other vegetables. Some of population also weave mats, and produce palm oil and coconut products. There are 20 cattle raisers in this barangay.

Barangay Lomangog

Barangay Lomangog is the barangay in Ubay where there are government establishments like Philippine Carabao Center (PCC) and Ubay Stock Farm which are the primary source of milk production in the province of Bohol. People in the barangay are mostly farmers who live by planting rice, camote, cassava, banana, and other vegetables. Some till agricultural smallholdings. Some of population also weave mats, and produce palm oil and coconut products. The Alturas group operates a large rice and feed mill in Lomangog. 80% of its output is consumed within the group, by the piggery, poultry and aquaculture operations of Marcela Farms. Expansion in 2011 cost 800 million pesos, and delivers the ability to process 20,000 tons of hog feed per hour.

Instrument

A self-made questionnaire was used by the researchers to obtain information from the respondents. It was written in English language and was translated in vernacular dialect. Researchers also used other instruments such as camera, ball pen or pencil, lists of beef cattle raisers from the Municipal Agriculturist, approved permits from the Mayors and Barangay Captains.

Procedure

Before the conduct of the study, the researchers asked for the list of beef cattle raisers from the Municipal Agriculture Office. The questionnaires were pre – tested before conducting the onsite survey to 100 beef cattle raisers to enhance the contents and revision and translation of the questionnaire into vernacular language. Sought the approval of permission from the Mayor and asked for the list at the Municipal Agriculturist Office of the selected baranggay. Upon approval of the letters which the researchers presented to the different barangay captains asking permission in conducting the study and being approved, the actual site survey was started. Selected beef cattle raisers were interviewed and asked based on the questionnaires prepared individually. This procedure was done repeatedly on the different selected barangays. Data gathered from the study were tallied and tabulated.

Statistical Analysis

The data gathered would be tabulated, analyzed and interpreted statistically using frequency count and equation presented below:

$$P = \frac{F}{N} \times 100$$

Where:

P =percentage

F =frequency

N =number of respondents

DEFINITION OF TERMS

Agriculture. The art of cultivating the soil, raising animals for human consumption.

AI. Artificial Insemination the medical or veterinary procedure of injecting semen into the vagina or uterus.

Beef Cattle. These cattle are raised intended for beef production

Beef Cattle Raisers. These are the farmers who are raising cattle for their consumptions.

Breeding. Controlled propagation of domestic animals in order to improve desirable qualities.

Cattle. Cows, bulls, or steers that are kept on a farm or ranch for meat or milk.

Copra meal. Is an important feed ingredient and the by- product of the oil extraction from dried coconut kernels.

Farmer. A person engaged in agriculture, raising living organism for food or raw material.

Fattening. The intensified feeding of animals to obtain the greatest quantity of high-quality meat.

Feeding. The act or process of eating or being fed.

Grass. Plants that have narrow green leaves, that are eaten by cows, sheep, horses, etc., and that are commonly grown on lawns and in gardens.

Grazing. An herbage or land for grazing.

Pasture. Plants such as grass grown for the feeding especially of grazing animals.

Rice Bran. Is a good source of B vitamins and fairly palatable to farm animals.

Rice Straw. Is the vegetative part of the rice plant (*Oryza sativa* L.) cut at grain harvest.

Ruminant. A hoofed animals such as cow or sheep that chews its cud and has a stomach with usually four chambers.

Chapter 2

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the presentation, analysis and interpretation of the data gathered and collected through questionnaires and personal interview among the cattle raisers in the Municipality of Ubay.

Table 1 shows the farming profile of the cattle raisers in the municipality of Ubay, province of Bohol. Based on the result, it reveals that majority 80% of the respondents were males while 20% were females. The highest age bracket was 41-50 years old which is 34% and lowest was 30 years old below which is 18%. Seventy- six percent, 76% were married and living together with their partner while 20% were single. In addition, there were 24% of the respondents were elementary level while 22% were elementary graduate and 6% were college graduate and a degree holder.

Moreover 18% of the respondents were housekeeper. And 72% who were farmers. When it comes to raising experience, 11 years and above got a percentage of 46%, 26% were 6-10 years. Most of the respondents haven't attended seminar pertaining to beef cattle raising with a 58%.

Twenty-eight percent 28% of the respondents have the farm size of 401-500 sq.m., while 20% is 100 – 300 sq.m., and 14% is 501 and above. Meanwhile, 72% of the respondents we're engaging to far from residential area raising.

Furthermore, for the number of heads present, 84% of the cattle raisers had below 5 heads.

Table 1
Farming Profile of the Backyard Cattle Raisers
N=50

Profile	Frequency	Percentage
Sex		
Male	40	80
Female	10	20
Total	50	100
Age		
30 Below	9	18
31-40	11	22
41-50	17	34
51 Above	13	26
Total	50	100
Civil Status		
Single	10	20
Married	38	76
Widow / Widower	2	4
Separated	0	0
Total	50	100
Educational Attainment		
Elementary Level	12	24
Elementary Graduate	11	22
High School Level	10	20
High School Graduate	11	22
College Level	3	6
College Graduate	3	6
Total	50	100
Occupation		
Housekeeper	9	18
Farmer	36	72
Government Employee	4	8
Driver	1	2
Total	50	100
Raising experience		
Below 1 year	3	6
1 – 5	11	22
6 – 10	13	26
11 Above	23	46
Total	50	100
* attended seminars		
Yes	29	58
No	21	42
Total	50	100

Farm size, ssq.m.		
100 – 200	10	20
201 – 300	10	20
301 – 400	9	18
401 – 500	14	28
501 above	7	14
Total	50	100
Farm Site		
Backyard	14	28
Far from the residential area	36	72
Total	50	100
Total Number of Heads Present		
5 heads below	42	84
6 – 10 heads	6	12
11 – 20 heads	2	4
21 heads above	0	0
Total	50	100
Breeds		
Cross breed	19	38
Pure native	31	62
Total	50	100

Table 2 indicates the feeding strategy and feed intake by the cattle raisers in the municipality of Ubay. This shows that tethering has the highest percentage of 42% in feeding system. Free range system accumulates 38% out of 100 respondents. There were 20% who have been used cut and carry. It indicates the type of feed given to the beef cattle by the cattle raisers in the municipality of Ubay. In terms of type of feeds, pastures and forages accumulates 56% while the concentrates is 16%. Meanwhile 58% of the respondents used salt added to the feed of the cattle and 4% of them used sugar. In feeding time 62% answered two times a day, 24% once a day and 14% three times a day. Furthermore, 48% of the respondents answered that they let their cattle drink a water 1-3 times a day and 12% answered 10-12 times a day.

Table 2
Feeding System and Feed Intake
N= 50

Feeding system	Frequency	Percentage
Free range	19	38
Cut and carry	10	20
Tethering	21	42
Total	50	100
Types of feed		
Concentrates	8	16
Corn, hay, rice straw	14	28
Pasture and forages	28	56
Total	50	100
Feed Additives Added		
Vitamins	15	30
Minerals	4	8
Salt	29	58
Sugar	2	4
Total	50	100
Feeding Time/day		
1 x a day	12	24
2 x a day	31	62
3 x a day	7	14
Total	50	100
Drinking Behavior		
1-3 x a day	24	48
4-6 x a day	11	22
7-9 x a day	9	18
10-12 x a day	6	12
Total	50	100

Table 3 indicates the common problems encountered by the cattle raisers in the municipality of Ubay. It demonstrates that the veterinary services from the government are the most common problem encountered in backyard cattle production, accounting for 30% of all problems (medical services 8%, vaccine 10%, AI-artificial insemination 10% and free medicine 4%). Farmer's weak expertise of livestock production (26%) is followed by insufficient breeding techniques (22%), lack of feed availability and land shortage is 20%.

Table 3
Problems Encountered in Backyard Cattle Raising
N=50

Problems	Frequency	Percentage
Lack of feed supply and Land shortage	10	20
Insufficient breeding techniques	11	22
Limited knowledge of farmers in livestock production	13	26
Veterinary Services from the Government:		
• Medical services	4	8
• Vaccine	5	10
• AI	5	10
• Free medicine	2	4
Total	50	100

Chapter 3

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, the conclusions and recommendations drawn from the findings of this study.

Summary of Findings

This study aimed to identify the different feeding system among beef cattle raisers in the selected barangays of Ubay.

The respondents of the study were beef cattle raisers in which 18% of them aged 30 years old below, 22% aged 31-40 years old, 34% for 41-50 years old, and 26% of the beef cattle raisers aged 51 years old and above. In relation to these, out of 50 respondents, 10 of them are single, 38 were married and 2 of them were widowed.

Moreover, 80% of them are males and 20% of them were females. As for their educational attainment, 24% were elementary level, 22% were elementary graduate, 20% were able to go to high school but were not able to finish it. 22% were able to finish high school. There were 6% who were able to go to college and 6% of them were degree holder.

In addition to these, 72% of the beef cattle raisers were farmers, 18% were housekeeper, and 8% were government employee as for the number of years in raising cattle, 6% have 1 year below of raising experience, 46% are cattle raisers for almost 11 years and above. In connection to these, 29 out of 50 respondents attended seminars regarding beef cattle production organized by Philippine Carabao Center (PCC).

In terms of their farm profile, 28% of them have 401-500 sq. meters, 10% were 100-300 sq. meters and 14% of 500 sq. meters above. Most of the respondents answered 72% of them tethered their beef cattle far from the residential area and 28% were in the backyard only. There are 84% of them have raised 5 below heads, 12% were 5-10 heads and 4% have 11-20 heads. Most of the respondent raised pure native which accumulates 62%.

Moreover, 42% were engaging in tethering and 20% of them used cut and carry in feeding their cattle. In terms of feeds 56% of them answered pasture and forages, 8% concentrates. Fifty-eight of the farmers used salt as their feed additives and 4% of sugar. Most of the farmer feed their cattle 2 times a day, followed by 3 times a day. They let their cattle drink 1-3 time a day.

Conclusions

The researchers discovered that the majority of the respondents are elementary level and they based on the information acquired. One of their main sources of income is beef cattle production. Although some of them have prior expertise with cattle, the majority of them have not attended any beef cattle production courses.

As a result, the researchers concluded that the respondents require expert advice in order to improve their beef cattle-raising technique. They must understand the significance of providing the proper amount of water and feed to the cattle.

Recommendations

Based on the conclusions drawn in the study, the following are the recommended:

1. Since majority of the educational attainment of beef cattle raisers are in elementary level, they are encourage to attend seminars/trainings on raising and feeding beef cattle for them to learn more practices on cattle production.
2. Beef Cattle raisers are encouraged to properly follow feeding guidelines and procedures to have better quality and quantity of production and income as well;
3. The researchers encourage the Ubay Stock Farm and the Department of Agriculture to extend their knowledge on how to raise the beef cattle by the use of organic raising as it is cheap and easy to make.

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APPENDICES



APPENDIX A-1

Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

MA. QUIMAR Q. GAHIT Ed.D.
 Dean, College of Teacher Education
 Bohol Island State University- Bilar Campus

Ma'am:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In line with this, the researchers would like to ask permission from your good office to allow us to pilot- testing the study to the water buffalo raisers in selected barangays in the Municipality of Ubay, Bohol through direct distribution of questionnaires.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)MARY ANN T. LABAGRIL
(Sgd)MADELYN A. QUILATON
(Sgd)ROCHIE MAR R. ROMANA

Student Researchers

Noted by:

(Sgd)LIMWEL A. NALDOZA
 Thesis Adviser

Recommending Approval:

(Sgd)ADORACION P. QUITORAS, EdD
 Chairperson, DGEEd

Approved by:

(Sgd) MA. QUIMAR Q. GAHIT, EdD
 Dean, College of Teacher Education

APPENDIX A-2



Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

MA. QUIMAR Q. GAHIT Ed.D.
 Dean, College of Teacher Education
 Bohol Island State University- Bilar Campus

Ma'am:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In line with this, the researchers would like to ask permission from your good office to allow us to conduct the study to the water buffalo raisers in selected barangays in the Municipality of Ubay, Bohol through direct distribution of questionnaires.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)**MARY ANN T. LABAGRIL**
 (Sgd)**MADELYN A. QUILATON**
 (Sgd)**ROCHIE MAR R. ROMANA**

Student Researchers

Noted by:

(Sgd)**LIMWEL A. NALDOZA**
 Thesis Adviser

Recommending Approval:

(Sgd)**ADORACION P. QUITORAS, EdD**
 Chairperson, DGEEd

Approved by:

(Sgd) **MA. QUIMAR Q. GAHIT, EdD**
 Dean, College of Teacher Education

APPENDIX A-3



Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

MARIETTA C. MACALOLOT, PhD
 Campus Director
 Bohol Island State University- Bilar Campus

Ma'am:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In line with this, the researchers would like to ask permission from your good office to allow us to conduct the study to the water buffalo raisers in selected barangays in the Municipality of Ubay, Bohol through direct distribution of questionnaires.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)MARY ANN T. LABAGRIL
(Sgd)MADELYN A. QUILATON
(Sgd)ROCHIE MAR R. ROMANA

Student Researchers

Noted by:

(Sgd)LIMWEL A. NALDOZA
 Thesis Adviser

Recommending Approval:

(Sgd) MA. QUIMAR Q. GAHIT, Ed.D
 Dean, College of Teacher Education

Approved by:

(Sgd)MARIETTA C. MACALOLOT, PhD
 Campus Director BISU-Bilar

APPENDIX A-4



Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

HON. CONSTANTINO H. REYES
 Ubay Municipal Mayor
 Ubay, Bohol, Philippines

Sir:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, , "ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In connection to this, the researchers would like to ask permission form your good office to allow us to have the list of the beef cattle raisers and to pilot-testing the study to the beef cattle raisers in your municipality.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)MARY ANN T. LABAGRIL
 (Sgd)MADELYN A. QUILATON
 (Sgd)ROCHIE MAR R. ROMANA

Student Researchers

Noted by:

(Sgd)LIMWEL A. NALDOZA
 Thesis Adviser

Recommending Approval:

(Sgd) MA. QUIMAR Q. GAHIT, Ed.D
 Dean, College of Teacher Education

Approved by:

HON. CONSTANTINO H. REYES
 Ubay Municipal Mayor

APPENDIX A-5



Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

HON. AQUILANA T. QUILATON
 Barangay Captain
 Bay-ang, Ubay, Bohol, Philippines

Madam:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In connection to this, the researchers would like to ask permission form your good office to allow us to conduct the study in your barangay.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God Bless!

Very respectfully yours,

(Sgd)MARY ANN T. LABAGRIL
(Sgd)MADELYN A. QUILATON
(Sgd)ROCHIE MAR R. ROMANA

Student Researchers

Noted by:

(Sgd)LIMWEL A. NALDOZA
 Thesis Adviser

Recommending Approval:

(Sgd) MA. QUIMAR Q. GAHIT, Ed.D
 Dean, College of Teacher Education

Approved by:

HON. AQUILANA T. QUILATON
 Barangay Captain

APPENDIX A-6



Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

HON. ANECITA BONGALAN

Barangay Captain
 California, Ubay, Bohol, Philippines

Madam

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In connection to this, the researchers would like to ask permission form your good office to allow us to conduct the study in your barangay.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)MARY ANN T. LABAGRIL
 (Sgd)MADELYN A. QUILATON
 (Sgd)ROCHIE MAR R. ROMANA

Student Researchers

Noted by

(Sgd)LIMWEL A. NALDOZA
 Thesis Adviser

Recommending Approval

(Sgd) MA. QUIMAR Q. GAHIT, Ed.D
 Dean, College of Teacher Education

Approved by

HON. ANECITA BONGALAN
 Barangay Captain



APPENDIX A-7

Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY-BILAR
 College of Teacher Education



December 9, 2021

HON. FELIX C. CUTAMORA
 Barangay Captain
 Lomangog, Ubay, Bohol, Philippines

Sir:

Good day!

We, the Bachelor Technology and Livelihood Education major in Agri- Fishery Arts - IV students of College of Teacher Education of Bohol Island State University-Bilar Campus is currently undertaking a research entitled, "**ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY**" as partial fulfillment of the course Research 2. The study aims to find feeding systems practiced by beef cattle raisers.

In connection to this, the researchers would like to ask permission form your good office to allow us to conduct the study in your barangay.

Rest assured that observance of health protocols will be strictly followed, and the data gathered will be kept with utmost confidentiality.

Thank you and God bless!

Very respectfully yours,

(Sgd)**MARY ANN T. LABAGRIL**
 (Sgd)**MADELYN A. QUILATON**
 (Sgd)**ROCHIE MAR R. ROMANA**

Student Researchers

Noted by:

(Sgd)**LIMWEL A. NALDOZA**
 Thesis Adviser

Recommending Approval:

(Sgd) **MA. QUIMAR Q. GAHIT, Ed.D**
 Dean, College of Teacher Education

Approved by:

HON. FELIX C. CUTAMORA
 Barangay Captain

APPENDIX B**Instrument**

Dear Respondents,

The undersigned is conducting a study entitled **“ASSESSMENT ON THE FEEDING SYSTEM OF BEEF CATTLE (*Bos Indicus*) RAISERS IN THE MUNICIPALITY OF UBAY”**. The data needed in the study include information which you can valuably and substantially provide; hence, the undersigned humbly asks for your cooperation to answer the questionnaire below to the best of your knowledge and certainty.

Rest assured that all answers will be treated and kept confidentially.

Thank you so much and God bless.

Researchers,

Mary Ann T. Labagril
Madelyn A. Quilaton
Rochie Mar R. Romana

Survey Questionnaires (English version)

General instruction: Kindly answer the questions sincerely. Check if there are choices and write down if necessary.

1. Respondent's profile

Name (optional):
Gender:

Age:

1.1. Civil Status

- Single
- Married
- Widowed
- Separated

1.2. Educational Attainment

- Elementary Level
- Elementary Graduate
- Highschool Level
- Highschool Graduate
- College Level
- College Graduate

1.3. Occupation

- Farmer
- Housewife
- Government Employee
- Others, please specify: _____

1.4. Number of years in raising cattle

- Below 1 year
- 1 – 5 years

5 – 10 years

10 years above

1.5. Have you attended seminars/ trainings about cattle production.

Yes

No

1.6. What is the farm Size?

100-200 sq. m

201-300 sq. m

301-400 sq. m

401-500 sq. m

500 sq. m above

1.7. Where is the location of the farm/ farm site?

backyard

far from residential area

others, please specify: _____

1.8. Total number of cattle raised

5 below

5 – 10 heads

10 – 20 heads

20 heads above

1.9. What are the common breeds of cattle raised?

Pure native cattle

Cross breed

others; pls. specify

2. What type of feeding system you apply in your beef cattle farming?

Free range system/grazing

Cut and Carry

Tethering

2.1. What type of feed you give to your cattle

Concentrates

Corn, hay, rice straw

Pasture and Forages

2.2. What types of feed additives you added?

Vitamins

Minerals

Salt

Sugar

2.3. How many times/ day you feed your cattle?

1x a day

2x a day

3x a day

2.4. How many times you let your cow drink a water?

1-3x a day

4-6x a day

7-9x a day

10-12x a day

3. What are the problems encountered in raising beef cattle?

Lack of feed supply and Diseases

Insufficient breeding techniques

Fluctuation in price of meat

Veterinary and extension from the government

APPENDIX C
DOCUMENTATION

