

## **SOCIO-ECONOMIC ASPECTS OF RAISING VUHUS CATTLE IN THE ISLAND PROVINCE OF BATANES**

Cristy M. Bueno<sup>1\*</sup>, Oliver D. Abanto<sup>1</sup>, Blessy Hanna M. Albaladejo<sup>1</sup>,  
and Von Kevin B. Alag<sup>2</sup>

### **ABSTRACT**

**The Vuhus Cattle Raisers Association, Incorporated (VCRAI), as authorized by the local government, utilizes Vuhus island in Sabtang, Batanes as their cattle pasture. Vuhus cattle are raised in the range without any management intervention. The impacts of raising Vuhus cattle on the socio-economic lives of Ivatans were assessed by conducting a survey-interview with the members of VCRAI. It was revealed that the respondents' (n=39) household number ranges from 2-12 persons, and their majority household income is ≤Php20,000.00 per month. Some are regularly employed either by the government or by private businesses. Majority of the members have up to 4 shares of cattle (1 share = 2 heads of cattle). The animals are extracted from Vuhus island on a regular basis and distributed to the members, which are raised further for 2-3 years in Sabtang island before selling or slaughtering. Majority of the respondents are raising 1-6 heads of cattle in Sabtang despite experiencing challenges such as limited feed resources and water during summer. Only a few respondents give economic value to cattle production (23%), while most are reserving the animals for festivities, usually selling part of the carcass to buy cooking ingredients. Traditional slaughtering method in the field by singeing for a prolonged period is practiced, resulting in low meat quality. Beef is marketed as “pure lean” and “mixed”, without giving premium price on high-valued cuts, making the overall marketing and utilization inefficient. The establishment of acceptable cattle slaughtering and carcass fabrication procedure is recommended for greater economic return to the Ivatans while considering their customs and traditions.**

Keywords: beef, Ivatan, Sabtang island, socio-economic, Vuhus cattle

### **INTRODUCTION**

Lying on the northernmost tip of the Philippines, Batanes is the smallest province in the Philippines in terms of population and land area. The province is closer to Taiwan than to the northern tip of Luzon; which is located between 121° 45' to 122° 15' east longitudes, and at 20° 15' north latitudes. It is composed of 29 barangays and six (6) municipalities, namely Ivana, Uyugan, Mahatao, Basco, and the island municipalities of Sabtang and Itbayat. With

---

<sup>1</sup>Institute of Animal Science, College of Agriculture and Food Science, University of the Philippines Los Baños, College, Laguna 4031; <sup>2</sup>Department of Agriculture, College of Agriculture, Southern Luzon State University, Lucban, Quezon 4328 (\*email: cmbueno@up.edu.ph).

an estimated total land area of 209 square kilometers and almost one-half are hills and mountains, the people of Batanes depend mainly on small-scale farming and fishing for their livelihood (Alonzo, 1966; PSA, 2002).

Out of the 10 volcanic islands composing the province, only three are inhabited, including Batan (where the provincial capital of Vasay, currently called Basco, is located), Sabtang, and Itbayat. A fourth island, Ivuhos (Vuhus), lies about a kilometer and a half east of Sabtang, where cattle are raised. The other uninhabited islands are Yami, North, Mavudis, Siayan, Di-nem, and Dequey (Alonzo, 1966).

Vuhus Island is part of the Municipality of Sabtang, Batanes with a total land area of about 645 hectares (PhilAtlas, nd) with no human habitation. A small portion of the island is utilized by the Sabtang Municipal Agriculture Office for their food production programs, while the majority serves as cattle pasture.

In the historical accounts from Ivatan elders, the cattle were brought to Batanes island by Spanish Missionaries. Since then, Vuhus Island has been established as a communal pasture for cattle due to the limited pasture area in mainland Sabtang. Ranching in the island was governed by unwritten agreements that were passed on by generations with the main goal of having readily available cattle for members for special occasions like fiesta, wedding, birthday, and baptism. It was only in 1997 that the local government of Sabtang established ordinances on the use of the pasture land, wherein the Vuhus Cattle Raisers Association was formally formed. The association was later on registered with the SEC in 2012 as Vuhus Cattle Raisers Association, Inc. (Companies House, nd), however, active status was not maintained.

There are an estimated 800 heads of cattle grazing in the entire island of Vuhus (Corrales, 2014). The Vuhus cattle, named from the island where they inhabit, are raised organically and thrive well on their own with the existing native vegetation and without any veterinary intervention. These cattle are valued by locals for their unique characteristics such as prolificacy, resistance to diseases, climate resiliency, and flavorful meat. Despite the high potential of Vuhus cattle in the market as a source of organic meat and meat products, and its gene contribution in the livestock industry to counter climate resiliency, the farmers are still dependent on the traditional feeding systems and husbandry management practices (Come, *et al.*, 2014). Assessment of the impact of raising Vuhus cattle on the socio-economic lives of Ivatans; documentation on the utilization of Vuhus cattle; and identification of the possible interventions to improve cattle management on the island are relevant. As food security on the island is a perennial concern, this information is important to assist the farmers in enhancing the production and harnessing the potential of Vuhus cattle in the market that will further contribute to the improvement of the lives of the Ivatans; hence, this study.

## MATERIALS AND METHODS

### Data gathering and survey-interview

Data on animal population was gathered from the local government units of Batanes, including the Provincial Veterinary Office, Municipal Agriculture Office of Basco, Mahatao, Ivana, Uyugan, Sabtang and Itbayat. A survey-interview, through the aid of a questionnaire, was conducted to gather information on the demographic information of Vuhus Cattle Raisers Association, Incorporated (VCRAI) members and the Vuhus cattle production system. A total of 39 members representing 40% of VCRAI members participated in the study. The

questionnaire was divided into four major sections: demographic, cattle production system, marketing, and utilization. Additional information on the Vuhus cattle production system was gathered through farm visits.

**Data analysis and interpretation**

The gathered data were analyzed using descriptive statistics.

**RESULTS AND DISCUSSION**

**Livestock and poultry production in the island province of Batanes**

The six (6) municipalities of Batanes are located on three major islands: Batan, Itbayat, and Sabtang. Other islands and islets were either inhabited by livestock or left deserted. The livestock and poultry populations in key municipalities are presented in Figure 1.

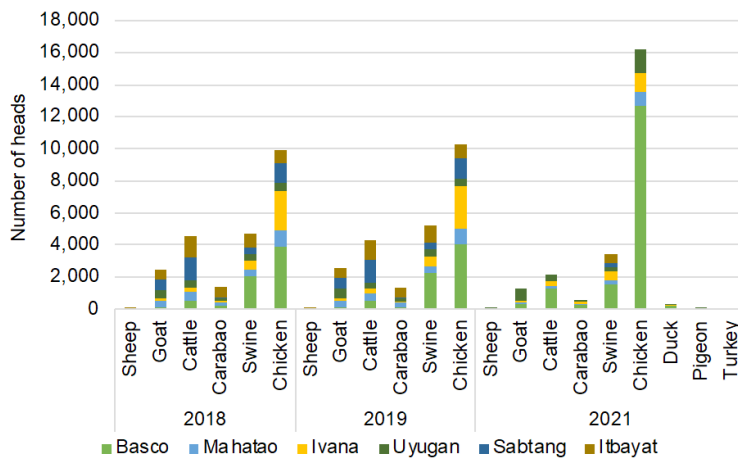


Figure 1. Livestock and poultry population in Batanes Province.

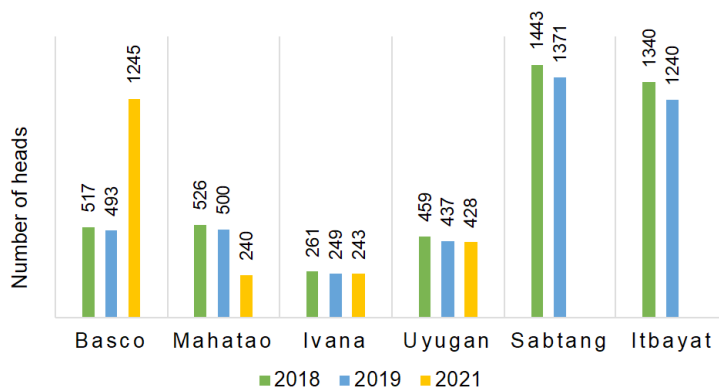


Figure 2. Cattle population per Municipality in Batanes Province

As for the general trend in the livestock and poultry population in the province, Batanes chicken population had the highest number followed by swine. Both species are mostly raised in the municipality of Basco. Cattle population ranked 3rd in the years 2018, 2019, and 2021. However, it is worthwhile to note that the total ruminant population in the province exceeded that of the swine population. This trend can be due to the reason that these ruminants can thrive well on the natural vegetation of the island. On the other hand, commercial feeds for swine and poultry are quite expensive and their availability is a challenge, especially during the times when weather conditions do not permit transport of goods to the island. It can be observed that out of the six municipalities, Sabtang had the highest population of cattle in 2018 and 2019 followed by Itbayat, Figure 2. These two (2) municipalities are located on different islands and will need further transport of supplies from mainland Batan making the production of swine and chicken with less appeal to the Ivatans. It can be noted also that in the year 2021, Basco had a relatively high number of cattle at 1,245 heads. This may be due to the lesser demand for cattle in the year 2020 when the pandemic started and the influx of tourists was halted. Tourists contributed to the greater demand for beef, thus lesser extraction of cattle for slaughter was observed during the pandemic period.

### **Cattle raisers' demographic and socio-economic characteristics**

The data from the Vuhus Cattle Raisers Association, Incorporated (VCRAI) members' interviews are summarized in Table 1. The demographic profile of the respondents, including age bracket, household number, average monthly income (PhP), source of income, and number of shares in VCRAI are presented.

Majority of the cattle raisers were 41 years old and above, comprising 80% of the total respondents. The household number of 2-5 and 6-10 represents 59% and 36%, respectively. A total of 81% had a household income of PhP 10,000 - 20,000. While a number of respondents are employed either by government (33%) or private (15%) sectors with their salary as their primary source of income, they also practice farming and fishing at the same time. The rest of the unemployed respondents, comprising 52%, have multiple sources of income as farmer (31%), fisherfolk (5%), construction worker (5%), business owner (3%), and from pension (3%).

It can be noted that 59% of the respondents have 3 to 4 shares and 33% have 1 to 2 shares of cattle with 1 share equal to 2 heads. They may have been members even before the VCRAI was officially organized and others have inherited shares from their parents or relatives. Recently, the association implemented equal shares with 2 shares equivalent to 4 heads of cattle per member only to facilitate the management of shares. Those with more than 2 shares have to sell their excess cattle either to other members with less than 2 shares or sell to the association.

### **Vuhus cattle production system**

The cattle on Vuhus Island (Figure 3) subsist on their own through the natural vegetation of the area where they can freely graze in vast areas of sloped terrain land with a combination of wild and semi-developed pastures. Drinking water for the animals is provided by the solar-powered water pump and by a newly established rainwater collector system. Currently, no improved feed materials are given in Vuhus island but efforts on improving the pasture are currently undertaken by VCRAI through the "*bayanihan*" system of its

members. They perform pasture clearing of unwanted plants, maintaining the paddocks' fences, construction of farm structures, planting of improved grasses, and other activities.

Table 1. Demographic profile of survey-interview respondents.

<b>Profile</b>	<b>Category</b>	<b>Number of Respondents</b>	<b>Percentage</b>
		<b>(n=39)</b>	
Age Bracket	< 31	2	5%
	31 - 40	6	15%
	41 - 50	11	28%
	51 - 60	10	26%
	> 61	10	26%
Household Number	2 - 5	23	59%
	6 - 10	14	36%
	> 10	2	5%
Average Monthly Income, PhP	<10,000	18	46%
	10,000 - 20,000	16	41%
	21,000 - 40,000	3	8%
	41,000 - 60,000	2	5%
Source of Income	Business	1	3%
	Construction	2	5%
	Farming	12	31%
	Fishing	2	5%
	Government employee	13	33%
	Part-time employee	2	5%
	Pension	1	3%
	Private employee	6	15%
Number of Shares in VCRAI (1 share = 2 heads of cattle)	1 - 2	13	33%
	3 - 4	23	59%
	5 - 6	3	8%

The animals received no management practices nor veterinary intervention. The animals, mostly male, are extracted 2-3 times a year, and distributed to the members on a rotational basis. These animals are transferred to Sabtang Island for further fattening for three (3) months up to three (3) years. Figure 4 shows the number of cattle raised & fattened in Sabtang by the respondents at the time of the survey. These cattle are taken care of by the male members of the family (father, brother, or son).

Shepherding in open pasture and tethering are the primary cattle management



Figure 3. Cattle at Vuhus island.

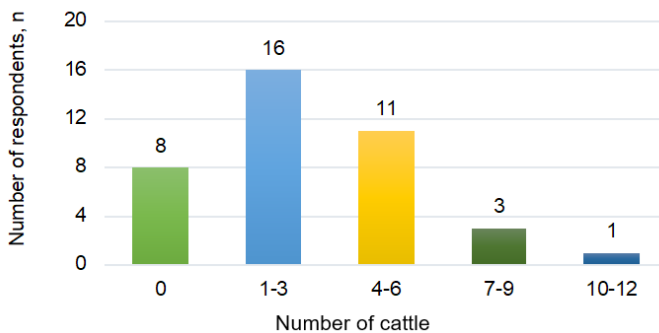


Figure 4. Number of cattle raised and fattened in Sabtang (n = 39).



Figure 5. Vuhus cattle at Sabtang island.

practices in Sabtang (Figure 5). Combined with cut and carry, cattle are fed mainly with Napier grass, roughages, and leaves of plants that are locally available on the island such as Tuhuy, Tipuho (breadfruit); Antipolo tree, and Aramay.

In terms of challenges in raising cattle on Sabtang island, most of the respondents indicated drinking water and limited forages during summer time (41%) followed by limited forage material during summer (15%) and lack of drinking water (10%). Disease contributed 3% only while 31% of the respondents stated none (Figure 6).

Since their pastures in Sabtang island are mostly located in hilly areas that are relatively far from the water source, the raisers bring drinking water to the animals using

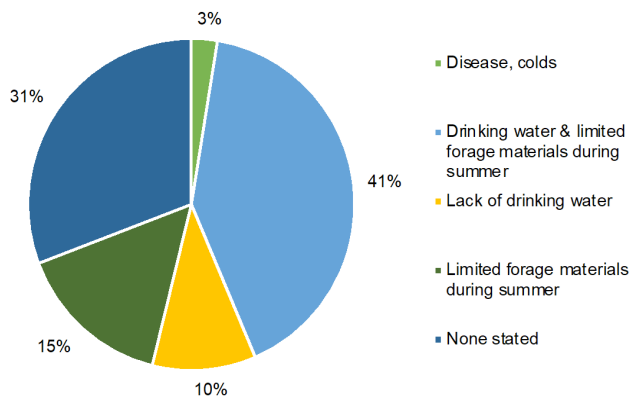


Figure 6. Challenges in cattle raising (n = 39).

motorbikes or by foot. This challenge highlights the need for more rain collectors & water reservoirs on the island. Forage materials are also limited during summer and forage management is needed to augment this problem. Despite the lack of intervention, it was noted that the cattle are generally resistant to diseases.

Table 2. Vuhus cattle utilization.

Profile	Category	Number of Respondents	Percentage
(n=39)			
Cattle Utilization	Bayanihan	1	3%
	Emergency funds	5	13%
	Family consumption	1	3%
	For occasion	5	13%
	Occasion + sell some meat	6	15%
	Live animal selling	9	23%
	Not stated	12	30%
Cattle Pricing Method	Eyeball estimation of live animal	23	59%
	Dressed Meat	1	3%
	No cattle sold yet	15	38%

### Vuhus cattle utilization and marketing

After further fattening the cattle in Sabtang island, the raisers utilize these animals for various reasons including *bayanihan* (3%), emergency funds (5%), family consumption (1%), for occasion (13%), occasion and selling of some meat (15%) or live animal selling (23%). It can be noted that 30% of the respondents did not specify the utilization as they had not yet given their shares at the time of the survey or the cattle is still being fattened (Table 2).

The occasions wherein Vuhus cattle were utilized and slaughtered include



Figure 7. Ivatan traditional cattle slaughtering in Sabtang, Batanes.

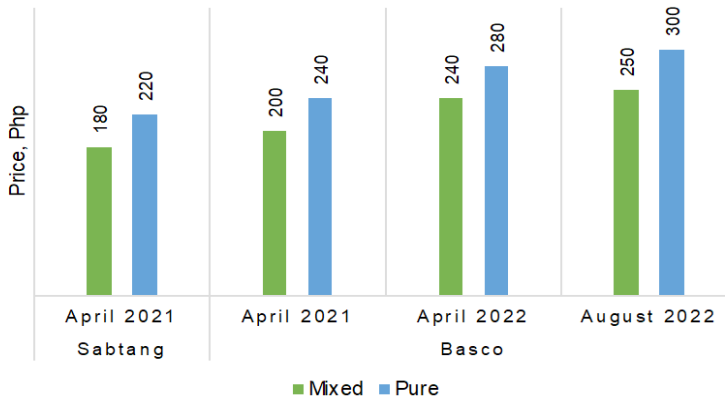


Figure 8. Price of mixed and pure lean beef meat in Sabtang and Basco.

celebrations or festivities such as wedding, birthday, christening, Christmas, and fiesta. Some also slaughter for funeral.

The raisers either slaughter or sell the live animals to local traders. If the animals are to be sold live, pricing is mostly based on eyeball estimation or what they refer to as *bultuhan* since there is no available weighing scale for cattle on the island. It can be noted that 59% of the raisers priced their cattle based on *bultuhan*, while only 3% priced it based on dressed weight.

Traditional method of cattle slaughter is practiced in the island following floor/ground slaughtering and singeing the carcass using coconut leaves, used carton boxes, and other suitable materials (Figure 7).

After slaughtering, the carcass is fabricated without following any standard cutting method for beef. The meat is normally sold in bone-in cut-ups format, which they refer to



as *mixed* while selling of pure lean meat on the island is seldom done. The selling price of mixed and pure lean meat is shown in Figure 8. The selling price of beef in Sabtang is cheaper than in Basco. Factored in the price difference is the transportation cost, in the event that the animal is from Sabtang to be slaughtered in Basco. The average price of beef in the Philippine for the month of April on year 2021 and 2022 were PhP 348.75 and PhP 381.20, respectively (Statistica Research Department, 2023).

Selling of locally processed or value-added Vuhus beef products is seldom done on the island due to the limited knowledge of locals in meat processing. In 2014, the development of Vuhus Island as a possible source of the country's first-ever organic beef tapa for export

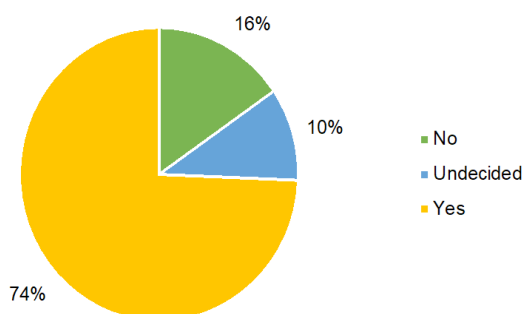


Figure 9. Willingness to value-add Vuhus cattle beef.

was stated by the Department of Agriculture (Official Gazette, 2014). However, to date, this has not pushed through due to food security considerations on the island. The supply of Vuhus beef is limited and can only cater to the demand of locals and a few tourists who visit Sabtang. Results show that 74% of the respondents were open to the idea of value-adding Vuhus cattle beef, while 16% were not willing. The remaining 10% are still undecided (Figure 9). The respondents stated reasons for value-adding such as source of additional income and product variety. Furthermore, some mentioned that the decision will depend on the type of product and the willingness of VCRAI as a whole.

## CONCLUSION

The Vuhus cattle owned by the Vuhus Cattle Raisers Association, Incorporated subsist on their own on the Vuhus island with no management and veterinary interventions. The animals are regularly extracted and distributed to the members on a rotational basis and are further raised in Sabtang island prior to utilization either by slaughtering under the traditional way or selling the animal live. The animals are mostly used in festivities and some are sold as a source of cash. Raising animals in Sabtang island poses some challenges during summer time such as drinking water supply and availability of sufficient feed resources. Some live animals in Sabtang are sold to Basco buyers. There is no standard beef cutting and beef is sold as “mixed” in Sabtang by the butchers. Only a few raisers are giving economic value to cattle production (23%) and a large percentage of the respondents are reserving it for festivities, (usually selling part of the carcass to buy cooking ingredients). Limited information was gathered as to the value-adding of Vuhus beef but most of the respondents are willing to develop specific products for it. Whenever possible,

the introduction of cutting standards that will suit the tradition of the Ivatans should be introduced to improve the economic returns of cattle raising to the locals and contribute to the food security of the province.

### ACKNOWLEDGEMENT

The authors would like to acknowledge the financial support from the Department of Agriculture – Bureau of Agricultural Research (DA-BAR) for the funding of the R&D project titled “Evaluation of Production System and Live Animal, Carcass and Meat Characteristics of Batanes Vuhus Cattle”. Acknowledgment is also extended to the Department of Agriculture – Batanes Experiment Station (DA-BES), the Provincial Government Office of Batanes, the Provincial Veterinary Office, the Sabtang Municipal Agriculture Office, and the members of Vuhus Cattle Raisers Association, Incorporated (VCRAI)

### REFERENCES

- Alonzo JG. 1966. *The Batanes Islands*. Acta Manilana UST Research Center.
- Come WD, Schlecht E and Brinkmann K. 2016. Characterization of ruminant husbandry systems in protected areas of Batanes Islands, Philippines. *Ann Trop Res* 38(2):17-29.
- Companies House. nd. Vuhus Cattle Raisers’ Association, Inc. Retrieved on 15 July 2023 from <https://companieshouse.ph/vuhus-cattle-raisers-association-inc>.
- Corrales N. 2014. *Batanes eyed as PH source of organic beef ‘tapa’ for export*. Retrieved on 15 August 2022 from <https://business.inquirer.net/164899/batanes-could-be-phs-source-of-first-organic-beef-tapa-export-alcala>.
- Official Gazette. 2014. *DA sees Batanes as possible source of organic beef tapa export*. Retrieved on 22 August 2022 from <https://www.officialgazette.gov.ph/2014/02/26/da-sees-batanes-as-possible-source-of-organic-beef-tapa-export/>.
- PhilAtlas. nd. *Ivuhos*. Retrieved on 24 August 2023 from <https://www.philatlas.com/physical/islands/ivuhos.html>
- Philippine Statistics Authority [PSA]. 2002. *Population of Batanes Showed an Upward Swing (Results from the 2000 Census of Population and Housing, NSO)*. Retrieved on 17 August 2022 from <https://psa.gov.ph/content/population-batanes-showed-upward-swing>.
- Statistica Research Department. 2023. *Domestic retail price of beef lean meat from cattle livestock Philippines 2012-2022*. Retrieved on 15 November 2023 from <https://www.statista.com/statistics/1048065/domestic-retail-price-beef-lean-meat-cattle-livestock-philippines/>.