



Awareness of Beneficiaries on the School–On-Air (SOA) Program of the Department of Agriculture on Halal Goat Production in Maguindanao

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Author's contribution

The sole authors designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The study was conducted to evaluate and assessed the evident of awareness of beneficiaries on the School on Air (SOA) program on Halal Goat Production of the Department of Agriculture – Maguindanao, BARMM. It was conducted in the province of Maguindanao, Bangsamoro Autonomous Region in Muslim Mindanao. Specifically, it covered six (5) municipalities with one hundred eighty (100) goat raisers who also participated in the Halal Small Ruminant School on the Air Program.

Results showed that majority of the respondents/goat raisers have high level of awareness on the Halal Goat program based on their responses to the different survey parameters. Many of them also disclosed that thru Halal goat school on the air program their knowledge, skills and attitudes (KSA) were enhanced and improved. On the other hand, some of the respondents also observed some gaps and issues in the program implementation, however, they also indicated recommendations for the improvement of future programming. Among them were, use of bilingual

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in the delivery of relevant information, especially to the rural farmers, regular monitoring of DA technical experts/personnel to their farms and careful use of the word "halal" which, according to them, must be supported by corresponding verses from the holy Quran whenever possible.

Keywords: Halal; haram; KSA; SOA; BARMM; small ruminant.

1. INTRODUCTION

The word Halal is derived from the Qur'an, the holy book of Islam, which mean "permissible". Its opposite, "Haram", means "non-permissible" and "forbidden to the followers of Islam". Halal is most commonly associated with food. But presently, the Halal is interpreted comprehensively to include chemicals, health care, cosmetics, Pharmaceuticals, leather products and Islamic banking. According to Islamic law, Muslims may not consume food or medicines containing alcohol, pork or its by-products, blood, birds of prey or carnivorous animals. Halal meat comes from an animal that has had its throat cut swiftly and humanely and its carcass drained of blood. Both halal and Haram are used to apply Islamic precepts to all aspects of human activity [1].

In the Philippines Halal-compliant food production and marketing is led by BARMM region where Muslim population is concentrated. The region also has the institutionalized Halal certification, Halal auditing, Halal Diagnostic and Halal labeling system that started way back 2008 (Johanna Paola D., P. 2015, January 11). As a commitment to pursue and develop Halal production in the country, the Philippine government supported the initiative thru institutionalization of Philippine National Standards and mainstreaming Halal programs in the Department of Agriculture. The country is now pushing Halal industry as a global competitive enterprise. In fact, on February 2018, the Department of Agriculture launched the Halal Food Industry Development Program as one of the banner program of the Department. To jumpstart the program, a national Halal roadmap, executive committee and technical working group was created.

In the Bangsamoro Autonomous Region in Muslim Mindanao a subsequent regional Halal roadmap was consequently done. The roadmap became a guiding tool of the then Department of Agriculture – Maguindanao in starting up Halal goat production project. The salient features of the project includes dispersal of 22-does to qualified farmer-beneficiary, technical know-how

training on Halal goat production and school on the air (SOA). Hence, the School on the air (SOA) is a component program of the Department of Agriculture in the Bangsamoro Autonomous Region in Muslim Mindanao. The program utilized quad media to disseminate relevant information to the program beneficiaries and other agricultural clientele of the BARMM region, particularly in the province of Maguindanao. It is conducted every quarter of the year in collaboration with local radio station DXMS. The SOA, from its name, often uses broadcast media such as radio programs, inter alia, to reach greater number of audiences in the communities. Semi-structured questionnaires are also used, particularly in selecting participants.

The Halal Small Ruminant School-On-Air (SOA) Program was started by the Department of Agriculture and Fisheries (DAF)-ARMM and being continued by Ministry of Agriculture, Fisheries and Agrarian Reform (MAFAR)-BARMM. The program was launched to emphasize the socio-economic importance of Halal Small Ruminant Production as a banner program of the Department. This particular SOA selected eleven (6) municipalities with one hundred eighty (180) farmer beneficiaries as primary audience or respondents.

2. MATERIALS AND METHODS

2.1 Research Method

The researcher adhered to the existing research protocol of seeking a new knowledge associated with the subject of this study. To further preserve the integrity and authenticity of the information to be used in this undertaking, the study adopted community immersion where opinions of local executives, traditional leaders and concerned government officials are equally solicited and respected. Consequently, planning for a benchmarking, primary and secondary data banking - thru meetings and interpersonal contact was done, respectively.

Data generated from the key informants underwent validation to verify its authenticity, reliability, coherence and relevance to the

information needed for the study. Hence, the research team did a series of courtesy meetings, benchmarking, data collection, and validation.

2.2 Locale of the Study

The study was conducted in the different areas where School on the Air was implemented in the province of Maguindanao, the mainland province of the region. The brief profile of the study sites was presented to have a clear picture of information relevant to the study.

2.3 Maguindanao Province

2.3.1 Topography and geography

The province lies within 7 degrees and 40 minutes north latitude and 123 degrees and 15 minutes east longitude. It is located 584 aerial kilometers away from the City of Manila. The province occupies the northeastern portion of the former empire Province of Cotabato bounded partly by vast marshland and the sea.

It is bounded on the northeast by the Province of Cotabato, on the northwest by the Province of Lanao del Sur, on the southern part by Sultan Kudarat, and on the western part by Moro Gulf. It is accessible by air through the Maguindanao (Awang) Airport on Datu Odin Sinsuat, by sea through the Polloc Free Port in Parang and by land through Cotabato City - Gen. Santos City Highway from the south, Cotabato City Davao City route from the north and the Cotabato City – Lanao route from the north-western part.

The province of Maguindanao can be divided into two physiographic units. There are the southwest cluster and Maguindanao lowland. The southwest mountain clusters include the two big groups of mountain elevation: Binace and Bilit. They are separated by the valley of MTUGAR river which flow northwest into Moro gulf and Liwasid river which flow into the Mindanao sea. The Maguindanao lowland includes the north extremity of Cotabato basin northeast of the provincial highlands. The area is generally sloping from the foot of hills to relatively flat as it approaches the sea and materials derived from the weathering and erosion of adjacent emergent land mass.

The biggest and longest river in Mindanao is the Rio Grande de Mindanao. The northeast boundary of the province and as much the west

banks are within the province, jurisdiction. This river meanders with flood rains developed at place together with extensive delta, which makes it immediate vicinity marshy. It drains westward into the Mindanao Sea. Several smaller streams and creeks are perennial type while the rest are intermittent.

The province falls under Type IV characterized by more or less even distribution of rainfall throughout the year. Its climate is comfortable. The average temperature ranges from 25.9 degree centigrade to 26.5 degree centigrade. The coldest months are from November to January.

2.3.2 Land use and classification

The province is composed of 36 municipalities stretched over 2 congressional districts. It has a total land area of 504,760 hectares (RBOI - BARMM, 2019) of which 154,708 hectares are agricultural areas, 75,575 hectares expansion areas, 89,181 hectares rehabilitation areas, 96,727 hectares are preservation areas, 293 hectares are wetland areas, and the remaining 16,276 hectares are miscellaneous areas.

2.3.3 Soil and climate

The soil of the province is classified into various types according to land forms and landscapes. There are various broad landform types based on topography, location, elevation and morphology like plains, hills and mountains. It has a Type IV climate characterized by rainfalls are evenly distributed throughout the year. The average Temperature is 25 degrees Celsius with an average annual rainfall of 1,200 mm.

2.3.4 Economic activities

Agriculture, fishing, trade and commerce are the primary source of livelihood in the province. Maguindanao grow a variety of crops, trap fish, and obtain wild foods and other materials from the marshes for their subsistence. Wet rice is grown in the lowlands, and dry rice and corn are farmed in upland areas. Tubers, including yams and sweet potatoes, are also among the staple crops. Vegetables such as tomatoes, squash, and beans are grown, and wild greens are harvested in abundance from marshlands. Coconuts abound and are gathered at an immature stage for their tender meat and water or to be made into coconut milk for cooking. Many kinds of fruit are common, including

bananas, plantains, mangoes, guavas, and durians. Freshwater fish are the main source of protein in the interior, as are saltwater fish and shellfish along the coast. Goats are raised for meat and usually are consumed on ceremonial occasions. An aged or infirm water buffalo may also be slaughtered for such events. Chickens are raised for both eggs and meat. Even today the Maguindanao produce nearly all of their own food.

Many items are handcrafted in households from wood, bamboo, rattan, thatch, and fiber. Most of these are produced for domestic use, but some weaving, mat making, and basketry is done on a limited basis for commercial sale. In the past, the Maguindanao were known for their production of ornate brass containers, ornaments,

musical gongs, etc., but brass working has become a lost art in recent times. Steel-bladed tools and weapons are still produced on a small scale.

Before this century, the Maguindanao dominated trade with people of the interior of the island and exacted tribute from them. Commodities such as salt, metal goods, Chinese pottery, cloth, beads, and other manufactured items passed inland in exchange for rice, gold, and a variety of forest products. It appears slaves may have been taken and sold as well. Trade with other islands involved many of the same items, and some Maguindanao may have been involved in piracy, which has been reported in this area for centuries (Countries and their cultures, Maguindanao Forum).

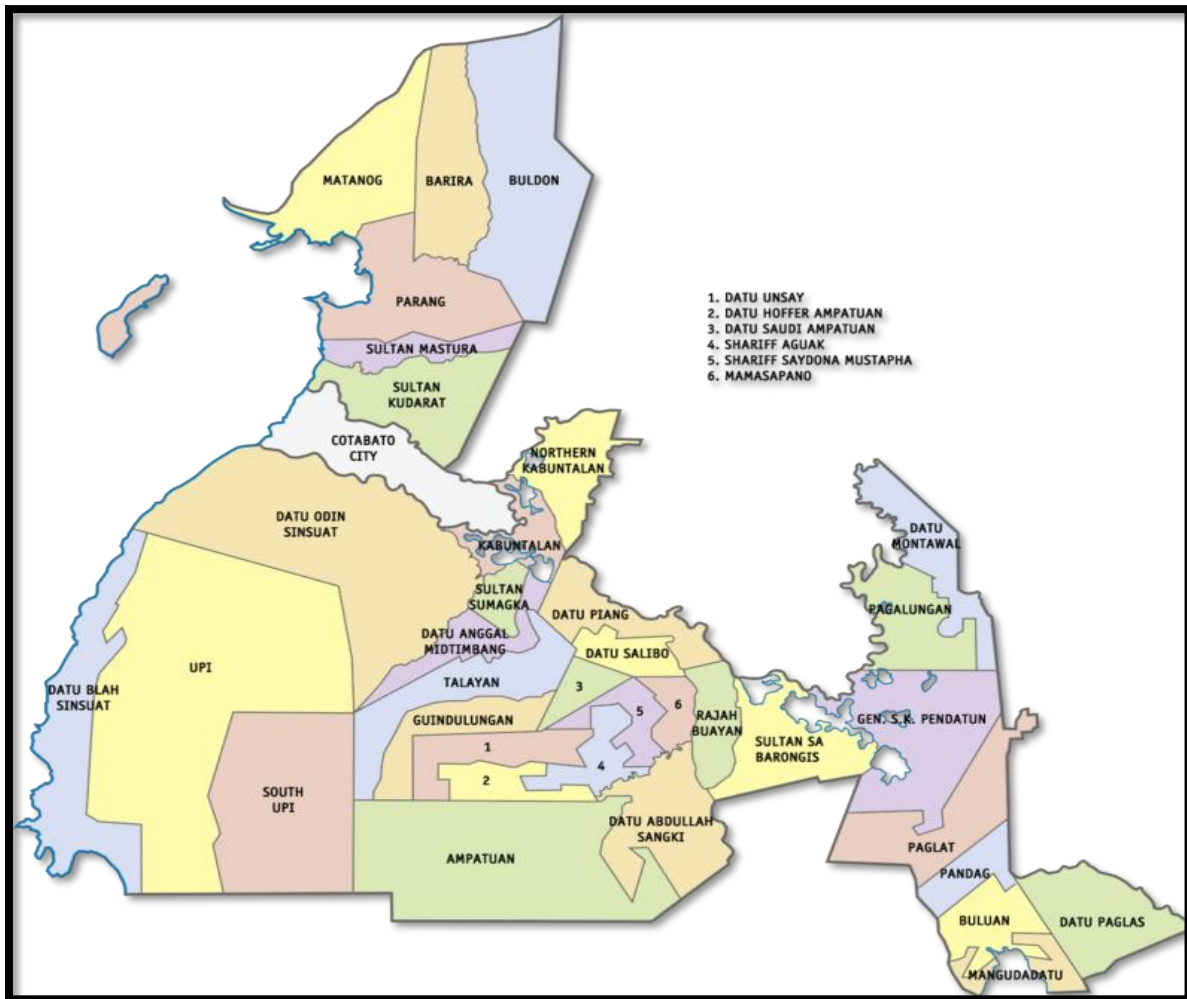


Fig. 1. Map of Maguindanao Province, BARMM

2.4 Research Instrument

A survey was used in the study. Semi-structured questionnaires were prepared, checked, pre-tested, and carefully reviewed before administered to the selected respondents. There was one (1) set of question divided into four (4) parts: a). demography of the selected participants such as name, age, marital status, number of children, gender, address, occupation, b). awareness level of beneficiaries on social, economic and monetary benefits of the SOA to the beneficiaries, and d). issues and challenges and personal recommendations of the beneficiaries relative to the program.

2.5 Data Gathering Procedures

Before administering the survey questionnaires, the researcher hired two (2) enumerators. The enumerators were selected based on their expertise, experience, educational qualification and gender equality and preferably with exposures in dealing with local residents, formal or non-formal. They were allotted one (1) week to complete data gathering from bench marking, primary and secondary data collection, data processing and submission to the researcher.

The researcher together with selected enumerators made a courtesy meeting with the selected respondents and concerned local government executives, if any. The researcher introduced the enumerators and discussed the whole concept of the study.

In addition to semi-structured questionnaires being administered, enumerators employed personal interview thru dyad or focus group discussion in order to draw accurate information from the key informants. Respondents were given ample time to answer questions. Enumerators assisted the respondents, as needed.

2.6 Respondents of the Study

Respondents of the study were selected beneficiaries of Halal goat production program

who are also beneficiaries of Halal Goat School on the Air (SOA) program composed of five (5) municipalities with one hundred (100) individual members. The program beneficiaries were selected based on technical criteria such as site accessibility, site topography and technical know-how on Halal goat production. They underwent series of examination conducted by Regional Agricultural Fisheries Information Division.

Furthermore, the following Table 1 shows the five (5) municipalities selected for the study.

2.7 Sampling Method

The Slovin's Formula was used in identifying number of samples taken from the total population of the beneficiaries who served as respondents of the study. The formula is represented by the following equation, to wit;

$$n = N / (1 + Ne^2)$$

Where, n is the sample size, N is the known population size, and e is the acceptable error value. In this study there are one hundred (100) beneficiaries treated as population.

$$n = 100 / (1 + 100 \times 0.05)^2$$

$$n = 100 / 1.25$$

$$n = 80$$

Following the Slovin's formula there were eighty (80) respondents interviewed. Five percent (5%) was used as margin of error.

2.8 Statistical Treatment of Data

Raw data collected were subjected to validation prior to collation, tallying, encoding, analyzes and interpretation. The study adopted descriptive statistics such as mean, percentile and standard deviation using SPSS Version 10.0 as a tool. Results were analyzed and interpreted objectively.

Table 1. List of municipalities in Maguindanao province selected as specific location of the study

Municipality	No. of respondents	Goats inventory (2020)
Datu Blah Sinsuat	20	1,851 heads
Datu Odin Sinsuat	20	2,400 heads
Sultan Mastura	20	1,300 heads
Sultan Kudarat	20	2,766 heads
Upi	20	1,288 heads

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of the Respondents

3.1.1 Age

Table 2 revealed that 40% or around 40 of the respondents have an age range of 31-40 years old. This is so because the department of agriculture provided technical assistance on goat raising to this age group because they are more adoptable to the technology.

3.1.2 Sex

Table 3 shows that there were 65 out of 100 goat farmers were male. Though the department of agriculture recognized the important role of women in agriculture industry, the male farmers are still the primary sector being developed, especially in the muslim areas because islam firmly believed that men are the bread winners and their wives or women are the plain housewives which play roles exclusively inside their homes.

3.2 Evidence of Awareness of the Respondents on the Halal Goat School on Air (SOA) Program of the Department of Agriculture-Maguindanao

3.2.1 Social awareness

Table 4 shows that majority or 68 percent of the respondents claimed evidently that they were moderate aware on the halal goat school on air of the Department of Agriculture-Maguindanao which enhanced their knowledge, skills and attitude in goat raising technology. The 29.23 standard deviation proved that the knowledge, skills and attitudes among respondents were highly dispersed or the knowledge acquired by the respondents increased significantly compared to those who have not received similar technology on goat raising. Likewise, only 4 percent of the respondents claimed that their knowledge, skills, and attitudes in goat raising were least enhanced. Knowledge, Skills and Attitudes are the abilities and characteristics that enable a job to accomplish the activities described in a task statement that describes

what the job holder does (Quinones and Ehrenstein, 1997).

Similarly, in Table 5 it shows that most of the respondents goat were healthy and productive (SD 35.18) compared to those who have not received similar technology. Based on the result of the study, about 77% of the respondents testified that their goats are moderately productive given the husbandry management they employed in their respective farms. This could be attributed to the enhanced knowledge, skills, and attitudes (KSA) they acquired during the training on Goat Production and Management. Very few beneficiaries (Table 5) said that their goat are not productive. Aside, proper nutrition is essential for the health and productivity of all animals and is the basis of successful production system. A well-planned and executed preventive health program can not overcome problems that are created by poor nutrition, nor can advanced reproductive technologies overcome nutritional limitations of reproductive. Therefore, nutrition of the goat is of paramount importance for successful goat production.

The standard deviation of 23.68 implied that most of the respondents believed that natural breeding is the most practical breeding method compared to artificial breeding method. In fact 60% of the program beneficiaries testified that natural mating or natural breeding is still the best option in producing kids compared to artificial breeding which required sophisticated approached and expertise (Table 6). Hence, natural breeding is favourable to most of the goat raisers considering their level of knowledge. In halal goat production, there are two types of animal breeding- natural and artificial – for the halal compliant goat farm. Natural breeding is highly recommended but artificial breeding, like insemination or embryo transplant, can be practiced but not in the entire life of the doe (female goat); said doe can also experience natural breeding (agriculture.com.ph., 2019).

Optimal reproductive performance in goats is an important trait, which affects the economic profitability of farm (Yotov et al. 2016). Kids born in the natural breeding group were heavier than those in the Artificial Breeding (AI) group. Many previous studies have established a negative correlation between birth weight and litter size; birth weight decreases as litter size increases.

Table 2. Age of the respondents

Age (in years)	Frequency	Percentile (%)
15-20	10	10
21-30	30	30
31-40	40	40
41-50	20	20
Total	100	100
Mean	25	
Standard Deviation	29.23	

Table 3. Sex of the respondents or interviewees

Sex	Frequency	Percentile (%)
Male	65	65
Female	30	30
Lesbian	5	5
Total	100	100
Mean	25	
Standard Deviation	29.23	

Table 4. Response level of respondents on goat raising technology

Description	Frequency	Percentile (%)
Highly Evident	10	10
Moderately Evident	68	68
Less Evident	18	18
Least Evident	4	4
Total	100	100
Mean	25	
Standard Deviation	29.23	

Table 5. Response level of respondents on the questions about health and productivity of their goat

Description	Frequency	Percentile (%)
Highly Evident	16	16
Moderately Evident	77	77
Less Evident	5	5
Least Evident	2	2
Total	100	100
Mean	25	
Standard Deviation	35.18	

Table 6. Response level of respondents about the questions on natural breeding of Goat

Description	Frequency	Percentile (%)
Highly Evident	12	12
Moderately Evident	30	30
Less Evident	60	60
Least Evident	8	8
Total	100	100
Mean	27.5	
Standard Deviation	23.68	

Table 7. Response level of respondents about the questions on castration of goat

Description	Frequency	Percentile (%)
Highly Evident	0	0
Moderately Evident	6	6
Less Evident	75	75
Least Evident	19	19
Total	100	100
Mean	25	
Standard Deviation	34.26	

On goat castration, respondents testified that it is against halal system of producing goat because standard deviation of 34.26 is highly dispersed against the computed mean of 25. In Table 7, around 75% of the goat raisers/respondents believed that castration is being discouraged under Halal Goat Production Protocol taken into consideration the rights of animal (goat) as a beast of burden and sacrificial animal for Muslim believers. They are also aware that in doing so, they are violating the animal welfare act (AWA) that safeguarded the rights of individual animal as a living being.

This is the reason why no farmers responded to the questions related to castration. Though it is one of the traditional and non-conventional husbandry practices by goat raisers, castration provides physiological benefits to the buck by preserving his energy reserves thereby allowing faster weight gain. In other explanation, there nothing wrong with castrating animals such as sheep and cattle if it is done for a reason, such as making them grow fat and making the meat better. The Prophet said (peace and blessings of ALLAH be upon Him) sacrificed castrated sheep, as it was narrated by Ahmad and Majah that the Prophet (peace and blessings of ALLAH be upon Him) sacrificed two large castrated rams.

In Table 8 shows that 69% of the respondents replied “moderately evident” in adopting of technologies they learned from the school-on-air program of the Department of Agriculture-Maguindanao on good management and

practices of goat production while twenty one percent (21) % replied “highly evident” in adopting technologies on good management practice on goat production, best management practices are an excellent tool to help goat producers, whether they are new or has been in the business for some time, with ongoing improvement of their herds and their operations [2].

Goat farming has traditionally been a major livelihood for many rural families in the mountainous and uphill areas of the Eastern Mediterranean region of Turkey. In recent years, the increased demand for goat products raised the issue of developing a sustainable goat sector in the region. The primary purpose of this study was to determine best management practices and innovations in goat farming and their adoption levels in the Eastern Mediterranean Region of Turkey. For this purpose, 140 goat farmers were surveyed and their socioeconomic characteristics, management practices, problems encountered, levels of applying innovations and best management practices, as well as factors influencing their adoption were investigated. Results of the study revealed that goat farmers face problems with expensive feeds, low governmental subsidies, and cheap prices for goat products. Adoption level of innovations and best management practices were found quite low and it was influenced by farmers’ experience, income, travels, and contacts with extension service and private veterinarians.

Table 8. Response level of respondents about the questions on good management and practices (GMP) in goat production

Description	Frequency	Percentile (%)
Highly Evident	21	21
Moderately Evident	69	69
Less Evident	9	9
Least Evident	1	1
Total	100	100
Mean	25	
Standard Deviation	30.46	

3.2.2 Economic awareness

Despite encountered gaps in the implementation of the Halal Goat Program in Maguindanao province, many of the interviewed goat raisers disclosed that their goats are continuously increasing in number because they are kidding every 5 months. This statement is supported by the fact that in natural breeding the chance of conception and impregnation is higher than artificial breeding. Table 9 showed that 69 percent of the goat raisers believed that their goat population is increasing all year-round. At this current year (2022) the total goat inventory in the Philippines has an estimated number of 3,874.54 thousand heads. This was 0.2 percent higher compared with the previous year's same period population of 3,868.34 thousand heads. Inventory of goat in backyard farms grew by 0.2 percent, while goat population in commercial farms declined by -4.9 percent. Of the total goat population, 98.9 percent were raised in backyard

farms while the remaining 1.1 percent were from commercial farms [3].

Because there is an increased in goat population according to many raisers in Table 10, it follows that there was also an increase in the farmers' income derived from goat raising (Table 10) according to 61 respondents. Many of them also disclosed that goat raising, which farmers treated before as an alternative income source, now is considered a major source of income for rural and marginal farmers. Goat production is economically valuable for the Philippines with value rising from P3.3 billion in 2000 to P5.113 billion in 2005. (FAO.Org.news).

The farming of sheep and goats is the most important activity in the animal production sector of Greece, both in terms of people benefitting from it (about 300,000 families) and the overall income (45% of the gross value of the animal production).

Table 9. Response level of respondents about the questions on increasing their goat population

Description	Frequency	Percentile (%)
Highly Evident	16	16
Moderately Evident	69	69
Less Evident	11	11
Least Evident	4	4
Total	100	100
Mean	25	
Standard Deviation	29.74	

Table 10. Response level of respondents about the questions on increases of income from goat raising

Description	Frequency	Percentile (%)
Highly Evident	61	61
Moderately Evident	23	23
Less Evident	14	14
Least Evident	2	2
Total	100	100
Mean	2	
Standard Deviation	25.49	

Table 11. Response level of respondents on questions about goat as a good source of meat/chevon

Description	Frequency	Percentile (%)
Highly Evident	21	21
Moderately Evident	72	72
Less Evident	7	7
Least Evident	0	0
Total	100	100
Mean	25	
Standard Deviation	32.52	

Aside from alternative income source as many respondents disclosed, goat raising provided direct benefits to them thru chevon (Table 11). Chevon or goat meat is less in cholesterol compared to carabeef and beef. It is also a favorite meat of most Filipinos especially Muslim believers, which came into importance during holy months such as culmination of Pilgrimage (as a qurban). Unconventional livestock like meat goats have been exploited to meet the increasing demands for meat consumption in many developing countries and to ensure food security.

The demand for goat meat is progressively increasing as Indian prefers goat meat (Chevon) among all other meats. The value of the output from goat milk and meat was estimated as Rs. 44.3 billion and Rs. 71.66 billion, respectively during 2004-05. India possesses 16.60 per cent (124.50 million) of the world goat population and rank first in world. Rajasthan ranked II after West Bengal. The important goat farming offers immense opportunities and potential for generating income and employment to land less, resource poor's in state. Keeping in view, a study was conducted on economics of goat farming under traditional low input production system in Bikaner District of Rajasthan.

Worldwide the consumption of chevon (goat meat) has increasingly largely due to its distinct

nutritional attributes when compared to other red meats. In addition to being a good source of dietary protein for human beings, chevon comparatively has a lower total fat, saturated fatty acid and cholesterol content, which makes it a healthful products.

Some (73%) of the goat raisers as shown in Table 12 said that they utilized the goat manure as an organic fertilizer for their plantation crops. Rather than buying an expensive synthetic fertilizer, organic fertilizers derived from animal manure provides the cheapest but effective nutrient for crops, legumes and other plants because they are rich in natural nitrogen which can be synthesize as urea. Goat manure is an excellent fertilizer for herbs, vegetables, and other crops. It is known for increasing the water holding capacity of the soil, among other uses.

High phosphate fixation necessitates the application of high rates of phosphorous (P) fertilizers to achieve reasonable crop yields in most tropical soils. In the study that investigates the efficacy of goat manure in improving the effectiveness of fertilizer P for increasing maize yields. The results indicated the that goat manure application could be used to increase soil microbial biomass P, which in turn could improve the effectiveness of fertilizer P in the Eastern Cape, South Africa.

Table 12. Response level of respondents about the questions on goat manure as a good source of organic fertilizer

Description	Frequency	Percentile (%)
Highly Evident	15	15
Moderately Evident	73	73
Less Evident	11	11
Least Evident	1	1
Total	100	100
Mean	25	
Standard Deviation	32.53	

Table 13. Response level of respondents about the questions on chevon as readily available in the local market

Description	Frequency	Percentile (%)
Highly Evident	0	0
Moderately Evident	7	7
Less Evident	89	89
Least Evident	4	4
Total	100	100
Mean	25	
Standard Deviation	42.76	

Table 14. Awareness level of respondents about the questions on monetary benefits of goat raising

Description	Frequency	(%)
1. Annual income is less than 5,000 after program implementation	7	7
2. Annual income ranging from 5,000 - 10,000 after the program implementation	16	16
3. Annual income ranging from 10,000 - 15,000 after program implementation	61	61
4. Annual income ranging from 15,000 - 20,000 after program implementation	15	15
5. Annual income ranging from 20,000 - 25,000 after program implementation	4	4
Total	100	100
Mean	20.6	
Standard Deviation	23.15	

Farmers who believed in chevon as the nutritive meat also believed that goat meat is very much demanded in their local market as shown in Table 13 with 89% who responded positively. Due to scarcity of supply of live goats in the locality, goat meat is rarely seen and sold in the local market, and if any, it is very expensive almost doubled the buying price of beef and carabeef. In the local wet market or grocery centers, halal certified meat must be completely segregated from non-halal meat for retail to consumers or before reaching the plate [4].

Goat meat or chevon is regarded as nutritious food and became popular food for health conscious people, In the Philippines, demand for chevon is growing as noted in the increasing per capita consumption of chevon remains high. With a goal to transform the basis.

Table 14 showed that 61% of the respondent goat raisers have an income bracket of Php 10,000 - Php 15,000. This Fig. 1 coincided with the fact that goat raising in Maguindanao is just an alternative income source for majority of the rural and marginal income farmers. Working overseas is still the priority of rural people, especially those who do not have formal education. Studies have shown that the majority of the world's rural people keep and use livestock in a variety of ways that extend far beyond income generations. Livestock act as a store of wealth, a risk management tool and as such, income needs rather than price changes drive the marketing.

Goat has been described as a poor man's cow because of its immense contribution to the poor man's economy. It not only supply nutritious and easily digestible milk but also regular source of additional income for poor and landless or

marginal farmers. Being small-sized animals, goats can easily be managed by women and children. Feeding, milking and care of goats do not require much equipment and hard work. Capital investment and feeding costs are also quite low. The role of women in goat keeping is very significant in the rural families of Bangladesh and goat is the most important means through which rural women are able to contribute meaningfully to the cash needs for their family members. Moreover, goat rearing is the most useful way of women earning those who stay at home. There is a close relationship between the status of women and the socioeconomic development of any country. To ensure a balanced socio-economic development of the country, improvement the status of women is a precondition. This may be achieved only when there is increased participation of women in development activities.

3.3 What are the Issues and Challenges in the Implementation of Halal Goat School on the Air (SOA) of the Department of Agriculture-Maguindanao

3.3.1 Issues

From Table 15, it is clearly stated that majority of the goat raisers in Maguindanao had limited understanding of the topics or subject matters discussed during the school on the air because it not translated in a vernacular or mother tongue. This observation is underlies the principles of effect extension delivery system which greatly affects diffusion of innovation to the rural communities. In diffusion studies, a central tenet is that innovators, early adopters and the early majority rely more heavily on mass media channels in the adoption of a given innovations,

whereas the late majority and laggards rely more heavily on interpersonal channels to finally persuade them to adopt an innovation [5-8].

3.3.2 Challenges

Table 16 shows that majority of the goat raisers observed “prevalence of goat-related diseases such as ORF and Scourge. They also disclosed the reality that their farm was seldom visited by technical experts from the DA such as Livestock Inspectors and Veterinarian. Admittedly, the agency has shortage of Livestock manpower such as veterinarian. This limitation resulted to multi-tasking which eventually led to inefficiency of basic services for the livestock raisers. According to the study conducted in the areas of Region 12 (SOCCSKSARGEN), the results shows that there were ten (10) challenges have been enumerated by the respondents. It includes the diseases, lack of veterinary services, shortage of lands, inadequate pasture areas, predators, theft, poor breeds and no fences.

In Nepal, being on the developing agricultural country, sustainable development is only possible through the way of agricultural resonances by investigating and investing in resent technologies, ideas, skills and land matching seeds including commercialization in animal husbandry. There was a research study conducted to analyze the socio economic impact in terms of socio economic impact of the small scale commercial goat farming in that region [9-11].

The major problems of such small scale commercial farming in the study were lack of

grasses for feeding, lack of developed caste of goat, lack of manpower, lack of livestock insurance, lack of facilitated loan, lack of proper training about goat farming, lack of veterinary facility, low price of meat. And the different significant prospects were found in this profession which was as prospects to develop goat farming as main occupation, prospects to increase the level of income, prospects to increase employment, prospects to capture Table 15. Issues encountered by respondents about the implementation goat school on the air program national meat market, prospect to increase the production capacity of the land, and prospects to make healthier life.

3.4 What Recommendations you can Suggest to Address the Issues and for the Improvement of the Implementation of Halal Goat School on the Air (SOA) of the Department of Agriculture-Maguindanao

To address some of those issues and gaps in goat raising, the respondent farmers recommended the following as enumerated in Table 17. Use of vernacular or bi-lingual is important for better understanding according to the respondents. This is supported by the facts that most of the rural families lack formal education. Hence, the use of English or Tagalog in delivering the information is difficult for them to comprehend. Also the respondents suggested that any information cited in verbally or in writing should be fully supported by a verse from the holy Quran, particularly halal issues.

Table 15. Issues encountered by respondents about the implementation goat school on the air program

Issues	Ranking (%)
1. Halal goat production must be explicitly discussed in multilingual platform	1
2. Poor dissemination of technologies to the end users	2
3. Insufficient follow up through activities required to improve the implementation process	3
4. No monitoring and evaluation after the program implementation	4
5. Technical discussion must be supported by religious verses from Holy Quran	5

Table 16. Issues encountered by the respondents about the implementation goat school on the air program

Challenges	Ranking (%)
1. Prevalence of diseases	1
2. Poor breeds and stocks	2
3. Lack of veterinary services	3
4. Sustainability of the program	4
5. Shortage of land/inadequate pasture area	5
6. Farm security	6

Table 17. Recommendations of the respondents about the school-on-the-air goat program

Recommendations	Ranking (%)
1. Using of multi-lingual platform is encourage so that the message of the program will transmit effectively to the end-users.	1
2. Good Management Practices and technologies on Halal goat production must be properly discussed and disseminated to the clientele	2
3. Monitoring and evaluation must be implemented for the sustainability of the program	3 4
4. Feed backing and assessment regarding the Halal goat production must be done.	5
5. Halal issue is a mix of technical and religious perspective, verses from Holy Quran must be supported.	

4. CONCLUSION

The Halal goat School-on-the Air program of the Department of Agriculture-Maguindanao is a success story for the department and for the goat raisers. The program was participated by five (5) selected municipalities in Maguindanao with twenty goat raisers per municipality. Using Slovincs Formula, there were eighty (80) goat raisers selected as respondents for the study. A semi-structured questions were prepared and pre-tested before distributed to respondents.

The study is aimed at evaluating and assessing the evident of awareness of beneficiaries on the School on Air (SOA) program on halal goat production of the Department of Agriculture – Maguindanao, BARMM. Results showed that majority of the respondents/goat raisers have high level of awareness on the halal Goat program based on their responses to the different survey parameters. Many of them also disclosed that thru halal goat school on the air program their knowledge, skills and attitudes (KSA) were enhanced and improved.

On the other hand, some of the respondents also observed some gaps and issues in the program implementation, however, they also indicated recommendations for the improvement of future programming. Among them were, use of bilingual in the delivery of relevant information, especially to the rural farmers, regular monitoring of technical experts/personnel to their farms and careful use of the word “halal” which, according to them, must be supported by corresponding verses from the holy Quran whenever possible.

5. RECOMMENDATIONS

To improve future program implementation and to address some of the identified gaps besotted

by the program, it highly recommended to the top to bottom management the following, to wit:

1. Designing and crafting of effective monitoring and evaluation tools intended only for the projects;
2. Institutionalization of the program to the regular program of the department, and;
3. Creation of management team who will focus on the program.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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