Original Research Article

Participation of Diverse Gender in Negros Occidentalin the Production of Goats

ABSTRACT

Aims: This study aims to identify the demographic profile of each involved in goat raising and to identify the different practices of each gender involved in goat raising.
Study design: The study used the descriptive type of research design using a structured questionnaires based on the Philippine Recommend for Goat Production.
Place and Duration of Study: Sample: All cities and municipalities of the Province of Negros Occidental conducted between
Methodology: It employed a purposive sampling technique where 25 respondents were surveyed in each municipality and/or city. The interviewed respondents were based on the farmer's database of the local agriculture office. A total of 580 backyard goat raisers were interviewed in this study. Data gathered were coded and analyzed using the SPSS statistical software. Interpretation of data was determined using frequencies, mean, and standard deviation.
Results: Among 580 goat raisers, 57.6 % were male while the remaining 42.4% is female. In the said production, 50 years old and above dominantly engaged with 31% age, followed by 40-49, 30-39, and 20-29 age groups with 30%, 28.3%, and 9.8% respectively. Most of them were married with 81.9%. Females (46.7%) tend to raise goats for breeding purposes while males (71.6%) raised goats for meat purposes.
The majority of the male (49.1%) practice crop-livestock integration while most of the females (44.3%) practice mono-farming. Both genders have almost the same percentages when it comes to diversified farming. Moreover, in terms of goat raising system, tethering was dominantly practiced by both gender (F-91.9% & M-95.8%) followed by range (F-12.6 & M-16.5%) and feedlot (F-3.7% & M-0.9%).
Conclusion: This study observed that there are declining number of young men and women involved in livestock farming, indicating less interest in the next generation to venture into agriculture. It has also been found out that males raised goats for meat type as asource of income, practice crop-livestock integration, and feed their goats in tether and range systems. On the other hand, females raised goats for breeding for easy care, practiced mono-farming, and feed goats inthe feedlot system for them to do other household activities.

Keywords: (Gender, gender role, goat raising, gender participation)

1. INTRODUCTION

Livestock production systems in developing countries are varied. They include nomadism ranching, intensive and mixed-livestock, and crop farming. The goat (*Capra hircus*), one of the most popular domesticated small ruminants among people residing in rural areas, improves their standard of living by giving them access to milk, meat, and leather. Utilizing marginal lands, manure, and farm waste, small ruminants support the economy, create jobs, ensure food security, promote sociocultural sustainability, and protect the environment (Aldorasi, 2018). Goats have always been considered as very useful animals. The success of goats mainly relates to their marvelous adaptability to challenging mountain conditions, extreme weather and low feed acceptance, versatile habits and high production considering their body size (Monteiro et al., 2017). The total inventory of goats in the country recently was estimated at 3.60 million heads, in which Western Visayas recorded the highest population, followed by Ilocos Region and Central Visayas with 522.41, 481.82, and 412.53 thousand heads, respectively (PSA, 2021).

Gender differences exist in aspects of small ruminant production such as ownership, labor allocation, decision-making, and access to and control over resources (Ogolla et al., 2022). The term gender refers to culturally based expectations of the roles and behavior of women and men. It distinguishes the socially constructed from the biologically determined aspects of being male and female. Gender issues focus not only on women, but on the relationship between men and women, their roles, access to and control over resources, and division of labor and needs. Gender relations determine household security,the well-being of the family, planning, production, and many other aspects of life (International Fund for Agricultural Development, 2003). This study was conducted to assess gender participation in goat raising and look for factors to establish approaches to improve gender participation in livestock farming.

Objectives of the Study

This study generally aims to identify the involvement among genders in goat raising, specifically this study aims to identify the socio-demographic profile of each gender involved in goat raising, and to determine the participation of each gender in different activities of goat raising.

2. MATERIAL AND METHODS

2.1 Research Design and Respondents

The study involved the descriptive type of research design using a structured questionnaires based on the Philippine Recommend for Goat Production (Philippine Council for Agriculture and Natural Resources Research and Development, 2004). It employed a purposive sampling technique where 25 respondents were surveyed in each municipality and city. The interviewed respondents were based on the farmer's database of the local agriculture office. A total of 580 backyard goat raisers were interviewed in this study.

2.2 Conduct of the Survey

The researchers coordinated with the local leaders and/or government in-charge personnel of a certain area to conform to the IATF guidelines to conduct interviews withthe identified backyard goat raisers. After the clearance was obtained, the researchers conducted a face-to-face interview with the identified respondents. The adapted survey questionnaire wasadministered to the respondents to gather information onthe socio-economic profile, production activities, and management practices of the goat raisers.

2.3 Data Analysis and Interpretation

Data gathered were coded and analyzed using the Statistical Product and Service Solutions (Hejase and Hejase, 2013) IBM SPSS software. Interpretation of data was determined using descriptive statistics. According to Hejase and Hejase (2013), "descriptive statistics deals with describing a collection of data by condensing the amounts of data into simple representative numerical quantities or plots that can provide a better understanding of the collected data" (p. 272). Therefore, this study analysed data collected with frequencies, means, and standard deviations using tables for simplicity.

3. RESULTS AND DISCUSSION

Socio-Demographic Information

Table 1 shows the socio-demographic information of goat raisers inthe Province of Negros Occidental in terms of gender and age. Out of the five hundred eighty (580) goat raisers, three hundred thirty-four (334) of them (57.6 %) were male while the remaining two hundred forty-six (246) or 42.4% were female. Among the age group, 50 years old and above(31%) were dominantly engaged in goat raising followed by 40-49 and 30-39 years oldwith 30% and 28.3%, respectively. There were only 9.8% of young individuals fromthe 20-29 age group who were engaged in goat raising. Most of the interviewed backyard goat raisers were married, followed by single and living with a partner constituting 81.9%, 11.9%, and 3.4%, respectively.

Men tend to engage in goat raising due to the strong physique that allows them to tie, graze, hunt, displace, or carry out the goats and able to manage goat mobility, (Jaza et. al., 2018). The case study of gender dynamics in goat production in Southeast Kenya by Ogolla et al. (2022)adjoined that men dominantly owned the small ruminant morethan women. In terms of decision-making, ownership of more valuable stock, and management of livestock production, males outnumber women (Mupawaenda et al., 2008). On the other hand, the majority of the women handled production duties related to goat production, such as feeding, watering, selling milk, and cleaning housing structures (Orogolla et al., 2022). Care for young animals and backyard livestock is also largely done by women. In caring for sick young animals, women have evolved several ethno-veterinary practices (Singh et al., 2013). Moreover, females tend to engage in raising poultry animals due to their light weight and ease for them to carry and manage(Tchotsua& Gonne, 2009). Married women are highly involved in agriculture and livestock management activities to meet their daily needs, as Aldosari (2017) stated.

This one is thesame with the goat raisers in Negros married women are involved in goat raising. The major purpose of selling goats is subsistence goat farming, especially for women family heads, to pay for household expenses and crises. While men herd the larger animals, women tend to water and feed thetiny ruminants and other livestock close to their homesteads (Sapcota et al., 2017).Theinvolvement of theyoung age group in livestock ventures is also declining for years and isa sign that young people are less interested in raising goats and are instead turning to jobs that provide quick and easy revenue, like trade. This is also a result of young people moving to metropolitan areas in pursuit of better living circumstances. When examining the disparities in expectations between the young and the old, the age of the herders can have an impact on how the farm is managed (Ouchene-Khelifi et al., 2021).

Table 1. Socio-demographic information of goat raisers in Negros

	Respondents	F	%
Gender			
	Female	246	42.4 %
	Male	334	57.6 %
Age			
	20-29	57	9.8 %
	30-39	164	28.3 %
	40-49	174	30 %
	50 and above	180	31 %
	Prefer not to say	5	0.9 %
Civil Status			
	Single	69	11.9%
	Married	475	81.9%
	Living with Partner	20	3.4%
	Separated	1	0.2%
	Widowed	15	2.6%

Purpose of Goat Raising

Figure 1 presents the different purposes of raising goats. These arefor breeding, meat, and milk purposes. Data reveal that among gender, females (46.7%) raised goats for breeding purposes. However, males (71.6%) raised goats for meat purposes. Both genders have almost the same percentage when it comes to milking in raising goats. However, Aldosari (2017) stated that regarding greater participation, males were in a better position to obtain benefits from sheep and goat farming. Usually, themen of the house help the females in themarketing of their animals. This might be due to their greater experience and easy access to the farm areas as compared to females. Males engaged in raising goats for meat purposes because of their gender mobility and ability to deliver the goats to the market. This is in agreement withLaouadi (2018) that the primary reason for keeping goats is that they considered it as a source of income from selling it. Waithanji et al. (2013) as cited by Boogaard et al. (2015) reported that women may be less mobile and more occupied with household tasks, giving them fewer opportunities to sell goats. Caring for young ruminants comes naturally for women (Singh et al., 2013),and dedicated their work to milking and caring forthe kids (Arce et al., 2022; Angassa& Berhan, 2015). On the other hand, (male) family members might be helping FHHs to sell an animal, e.g., by transporting it to a sales location. Goat farming activities such as grazing, kid selling, and barn disinfection, are male-dominated activities, whereas activities like milking and barn cleaning are female's domain and the rest of the activities were carried out bothby males and females. Males areusually the breadwinner in the family and goat raising for meat purposes could give them income. Women on the other hand are involved in breeding since women are good at rearing kids and cleaning houses (Tyagiaet al., 2014). In contrast to these findings, Angassa and Berhan (2015), concluded in their study that husbands are primarily responsible for marketing and breeding-related decisions of goats, while women undertake routine husbandry activities like sick animal care, milking, and cleaning barns.The agricultural household benefits from this division of labor based on gender since it makes up for the absence of reliable capital and guarantees that the task is completed. In the research region of Morales et al. (2020), raising goats for revenue was regarded as the primary goal. Furthermore, the author said that rural people do not sell large animals since it is more difficult to recover them than tiny ruminants. While the importance of conserving insurance, meat, milk, ceremonial value, and other items has been rated after income sources.

Farmers view men's full-time work as farmers and women's multitasking responsibilities as complementary because they both provide food and two separate incomes (Harman et al., 2015). As of December 2021, the Negros Occidental ranks 7th on theop goat-producing province according to PSA (2021). Livestock or goat farming is a valuable asset for regional

socioeconomic and cultural systems because it effectively uses resources that would not otherwise be usable (Aldosari, 2018). Unfortunately, due to restricted access to technology, improved production techniques, inputs/stocks, and marketing assistance, backyard farms are still lagging behind in terms of economic gain and prospects despite the onset of the technological revolution and advancements (Paguia et al., 2020).

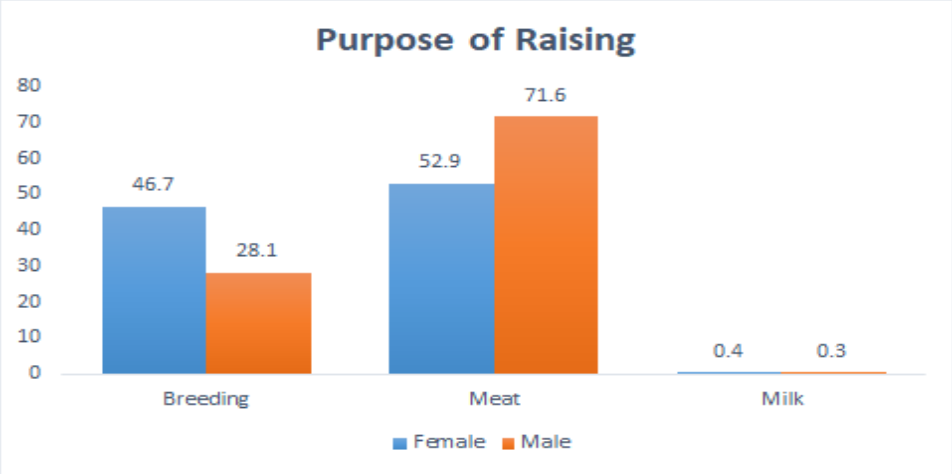

Fig. 1. Purpose of Raising

Farming System

Figure 2 presents the farming systems employed in goat raising. Data reveals that the majority of the male (49.1%) practice crop-livestock integration while most females (44.3%) practice mono-farming. Both genders have almost the same percentages when it comes to diversified farming.

Reddy (2016) stated that the integration of crop, pasture, and livestock is mutually beneficial to each other since crop residues can be used as animal feed, while animal manure can be utilized to enhance soil tilth, fertility, and carbon sequestration that can enhance agricultural productivity. Males practice this crop-livestock integration due to multiple commodities present on the farm. Multiple commodities need a strong labor force to cultivate and take good care of the animals to have a high net return, which males could provide. On the other hand, females choose mono-farming which gives them the focus in growing the goats. Manpower and strength are concentrated and these will allow also other women to do other household chores after their activities with the goats. Similar to other production methods, raising goats does not merely include combining crops and animals for immediate gain. They stand for a group of interconnected factors that the farmer manages in accordance with their goals. The farmer will determine the goals that are impacted by the social milieu in which he operates, his level of technical expertise, and the production elements that are accessible (Monteiro et al., 2018). Most small family farms grow and sell more than one type of crop on their property. Cultivating a variety of crops encourages the advantages of biological and economic diversification. In an agricultural system, the biological variety of living things both plants and animals many of which humans cannot see, inhibits the emergence of a dominant species (Arakaki & Aquino, n.d.).

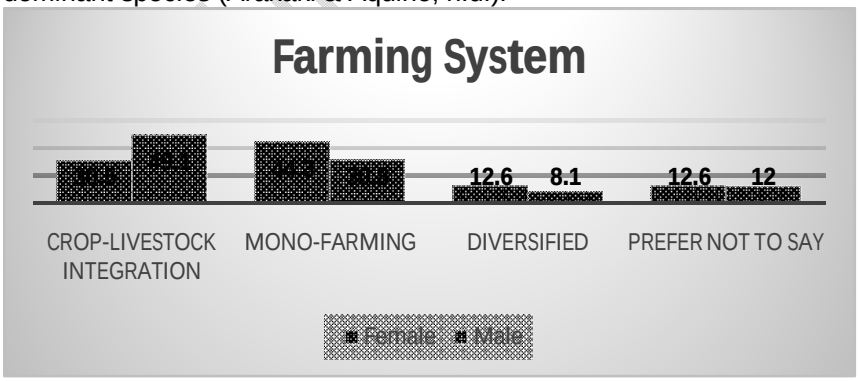

Fig. 2. Goats Farming System

System of Raising Goats

It is revealed in Figure 3 thatthe majority of goats raising systems employed among genders are tethering (F-91.9% & M-95.8%) followed by range (F-12.6 & M-16.5%) and feedlot (F-3.7% & M-0.9%). Males and females prefer to raise goats in tethering this is in agreement with Mollel and Mtenga (2000). Men usually did a larger proportion of tasks when it comes to goat raising, and also male children contribute to labor tasks more than females. The remaining tasks were more or less equally shared between genders of all ages. Tethering is a tedious task that requires moving the goats from the home to the roadside sometimes a kilometer or two away from home. Male goats are particularly difficult to handle by women. The most common feed sources are browsed of different bushes, shrubs, tree leaves, and other and are literally available in aconsistent manner both during wet and dry seasons (Angassa and Berhan, 2015). In these systems, the main source of feed is grazing. The goats graze the natural resources, especially those in the shrubby area under extensive conditions and throughout the year (Morales et al., 2020).
The range is letting the animals roam around while grazing in a fenced pasture, and feedlot. These two systems are usually done by males because females are busy with household activities. These two systems are done in areas usually far from the houses, where males are more secure in moving to and from compared to females. Females do the feedlot system because after their household activities, they collected forages that will be used as a feed for their goats. According to Sow et al. (2021), description of smallholder goat production in rural Senegal, Africa, practically all goat owners used agro-pastoral methods. In a complex sedentary system, animals are brought back to the cultivated regions after harvesting in the dry season and allowed to graze on fallow land and natural vegetation zones. The presence of other ruminant animals, particularly cattle, shows that farmers in the study region are interested in mixed farming of small ruminants.

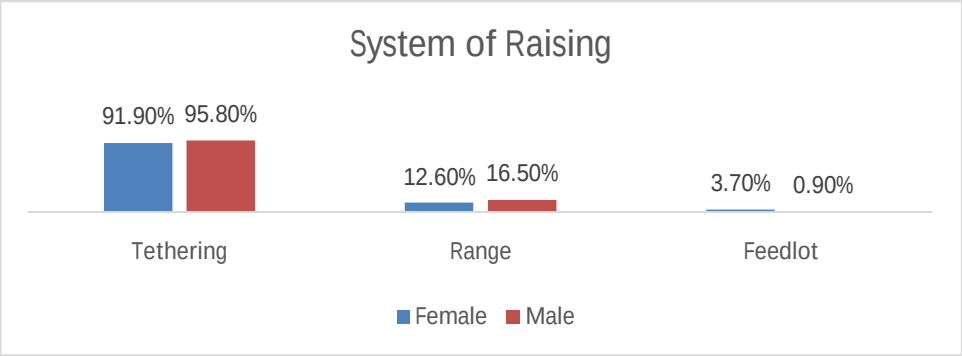

Fig. 3. Goats System of Raising

4. CONCLUSION

The findings of the study giveus a glimpse that the backyard goat raisers in Negros Occidental are mostly males, 50 years old and above, and married in status. A declining number of young men and women in involvement in livestock farming is also observed indicating less interest in the next generation to venture intoagriculture. It has also been found that males raised goats for meat type as a source of income, practice crop-livestock integration, and feed their goats in tether and range systems. On the other hand, females raised goats for breeding for easy care, practice mono-farming, and feed goats inthe feedlot system for them to do other household activities.

RECOMMENDATIONS

The results of the study recommend surveying the sexes of goats to fully understand the role of men and women in preference to goat raising including the household size of the family who raised goats.

REFERENCES

Aldosari, F.O..(2017). Gender participation in sheep and goat farming in Najran, Southern Saudi Arabia. Saudi Journal of Biological Sciences.
Available: http://dx.doi.org/10.1016/j.sjbs.2017.03.013

Aldosari, F. O. (2018). Gender participation in sheep and goat farming in Najran, Southern Saudi Arabia. Saudi Journal of Biological Sciences, 25(1), 144–148. doi:10.1016/j.sjbs.2017.03.013

Arce, C., Díaz-Gaona, C., Sánchez-Rodríguez, M., Sanz-Fernández, S., López-Fariña, M. D., & Rodríguez-Estévez, V. (2022). The Role of Women on Dairy Goat Farms in Southern Spain. Animals, 12(13), 1686.

E. Waithanji, J. Njuki, N. Bagalwa (2013) Gendered Participation in Livestock Markets. Chapter 4 J. Njuki, P. Sanginga (Eds.), Women, livestock ownership and markets: Bridging the gender gap in eastern and southern Africa, Routledge, London and New York

International Fund for Agricultural Development, 2003.Gender and livestock:Tools for design
Available:https://www.ifad.org/documents/38714170/39148759/Gender+and+livestock.pdf/67c6dca9-4a11-4f53-931e-2ccb46105a3c

Jaza, F. A. J., Tsafack, P. P., &Kamajou, F. (2018). Logit Model of Analysing the Factors Affecting the Adoption of Goat Raising Activity by Farmers in the Non-pastoral Centre Region of. Tropicultura, 36(1), 54-62

Laouadi, M., Tennah, S., Kafidi, N., Antoine-Moussiaux, N., &Moula, N. (2018). A basic characterization of small-holders' goat production systems in Laghouat area, Algeria. Pastoralism, 8(1), 1-8.
Available:https://doi.org/10.1186/s13570-018-0131-7

Maricel A. T., Juan M. P., Gloria Luz M. N., Canesio D. P., Aileen S. P., Rose Jane J. P., Rodel D. L., Florencia B. P., Regine Joy P. E. (2018). Involvement of Women in Farm Decision-making and Adaptive Capacity to Extreme Events of Farming Households in Ligao City, Albay, Philippines. Journal of Environmental Science and Management 21-2: 70-81. ISSN 0119-1144

Monteiro, A., Costa, J. M., & Lima, M. J. (2018). Goat System Productions: Advantages and Disadvantages to the Animal, Environment and Farmer. Goat Science. doi:10.5772/intechopen.70002

Mupawaenda, A. C., Chawatama, S., &Muvavarirwa, P. (2008). Gender issues in livestock production: a case study of Zimbabwe. Tropical Animal Health and Production, 41(7), 1017–1021. doi:10.1007/s11250-008-9268-5

N.M. Mollel and N. Mtenga. 2000. Gender Roles in Livestock Production: the case of Tchenzema Ward in the Western Uluguguru Highlands - Morogoro – Tanzania. S AfrJnl Agric Ext/S AfrTydskrLandbouvoorl, Vol 29 (2000)

Ogolla, K. O., Chemuliti, J. K., Ngutu, M., Kimani, W. W., Anyona, D. N., Nyamongo, I. K., &Bukachi, S. A. (2022). Women's empowerment and intra-household gender dynamics and practices around sheep and goat production in South East Kenya. PloS one, 17(8), e0269243.
Available:https://doi.org/10.1371/journal.pone.0269243

Ouchene-Khelifi, N.A., Ouchene, N. & Lafri, M. Characterization and typology of goat production systems in Algeria based on producers survey. Bull Natl Res Cent 45, 22 (2021).
Available:https://doi.org/10.1186/s42269-020

Paguia, H. M., Rubiano, M. F. O., & Corpuz, M. N. C. (2020). Community-based diversified farming systems improve the profitability of goat-rice-vermicompost production in Bataan, Philippines. International Journal of Agriculture Innovations and Research, 9(3), 158-163.

Philippine Council for Agriculture and Natural Resources Research and Development (2004). The Philippines Recommends for Goat Framing. Philippine Recommends Series No. 24-D. Los Baños, Laguna

Philippine Statistics Authority. 2021. Goat Situation Report.
Available:https://psa.gov.ph/livestock-poultry-iprs/goat/inventory

Reddy P.P. (2016) Integrated Crop–Livestock Farming Systems. In: Sustainable Intensification of Crop Production. Springer, Singapore.
Available:https://doi.org/10.1007/978-981-10-2702-4_23

Sapcota, S., Gairhe, S., Kolakshyapati, M., Upadhaya, N., Acharya, Y., & Ghimire, Y. N. (2017, March). Role of women in goat farming in mid hills of Nepal. In Proceeding of the 10th National Workshop on Livestock and Fisheries Research in Nepal (Vol. 5, p. 7).

Singh, Krishna M. and Meena, M. and Kumar, Abhay and Singh, R., An Overview of Gender Issues in Agriculture (January 17, 2013).
Available: https://ssrn.com/abstract=2237993or http://dx.doi.org/10.2139/ssrn.2237993

Sow, F., Camara, Y., Traore, E.H. et al. Characterisation of smallholders' goat production systems in the Fatick area, Senegal. Pastoralism 11, 12 (2021).
Available:https://doi.org/10.1186/s13570-021-00195-4

Tchotsoua M. & Gonne B. (2009). Des crises socio-economiques aux crises environementales sur les Hautes Terres de l'Adamaoua, Cameroun. In: Seinty-Boukar L.P. and Boumard P. (editeursscientifiques), 2010. Actes du colloque

Tesfaye Angassa and Tamir Berhan (2015). Assessment of Goat Production and Marketing Practices, Constraints and Opportunities in Yabello District of Borana Zone, Southern Ethiopia. International Journal of Innovative Research and Development. Vol. 4 Issue 11

Tyagia, K. K., Patela, M. D., Sorathiyaa, L. M., Fulsoundara, A. B., Ravala, A., Kshirsagara, D. P., &Thakorb, R. (2014). Perceived role of women in goat rearing on agreement scale. Livest Res Int, 2(4), 87-90
Yilmaz, H. A. S. A. N., Demircan, V. E. C. D. İ., Gul, M., & Kart, M. C. (2014). Gender analysis of family labour use in traditional hair goat husbandry. Journal of Animal and Plant Sciences, 24(6), 1898-1903.

United States Department of Agriculture- National Agricultural Statistics Service. 2015. 2012 Census of Agriculture Highlights. Sheep and Goat Farming.
Available: https://www.nass.usda.gov/Publications/Highlights/2015/Sheep_and_Goat_Farming.pdf

DEFINITIONS, ACRONYMS, ABBREVIATIONS
SPSS: Statistical Package for the Social Science