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Increasing The Ability And Adoption Of Goat Breeding Technology In Mitra Sepakat Farmer Group Kabupaten Sijunjung

Peningkatan Kemampuan Dan Adopsi Teknologi Beternak Kambing Pada Kelompok Tani Mitra Sepakat Kabupaten Sijunjung

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Abstract

Goat rearing in Kenagarian Palaluar Kecamatan Koto VII Kabupaten Sijunjung, is carried out extensively with field grass feed. This causes potency of goat kacang is not optimal. There are no practical and health-qualified livestock cages, forage cultivation gardens, feed preservation, handling of sick livestock, untapped livestock waste to reduce pollution. If the potential of kacang goat farming can be optimized, it can improve the economy of farmers. The purpose of this activity is to improve ability of goat farming Mitra Sepakat farmer group through adoption of technology and goat farming management. This activity began in 2020 starting with: selection and cultivation of forage animal feed, demonstration plots of effective goat cages and selection breed goat; in 2021, feed management, fermentation feed manufacturing, concentrate manufacturing, reproduction management and business analysis; in 2022, this was continued by the activity of making fermented feed, managing goat livestock waste into manure and evaluating the application of goat breeding science and technology that had been given. Based on the evaluation of the implementation of service activities that have been carried out from two years ago have been : a) changes in goat breeding patterns from (15 people) 100% extensive to 8 people (53) % intensive and intensive breeding patterns have been able to implement 100% transfer of Science and technology provided. The results of the evaluation conducted still found some problems faced by farmers such as calf mortality rate is quite high, which became the plan for the next service for the next service activities.

Keywords: (Adoption of Technology, Community Service and goat livestock)

Abstrak

Pemeliharaan kambing di Kenagarian Palaluar Kecamatan Koto VII Kabupaten Sijunjung, dilakukan secara ekstensif dengan pakan rumput lapangan. Hal ini menyebabkan potensi dari kambing kacang tidak optimal. Belum adanya kandang ternak yang praktis dan memenuhi syarat kesehatan, kebun budidaya hijauan, pengawetan pakan untuk persediaan musim kemarau, penanganan ternak sakit secara khusus, limbah ternak yang belum termanfaatkan untuk mengurangi polusi dan pencemaran. Apabila potensi peternakan kambing kacang dapat dioptimalkan maka peternak bisa memperoleh penghasilan tambahan dalam rangka peningkatan ekonomi rumah tangga peternak. Tujuan pengabdian masyarakat ini adalah meningkatkan kemampuan beternak kambing kelompok tani Mitra Sepakat melalui adopsi teknologi dan manajemen beternak kambing. Kegiatan ini dimulai tahun 2020 dengan beberapa

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	rangkaian kegiatan terstruktur yang dimulai dengan : Pemilihan dan budidaya hijauan pakan ternak, demplot kandang kambing efektif dan pemilihan bibit; tahun 2021 manajemen pakan, pembuatan pakan fermentasi, pembuatan konsentrat, manajemen reproduksi dan analisa usaha ternak kambing; tahun 2022 ini dilanjutkan dengan kegiatan pembuatan pakan fermentasi, pengelolaan limbah ternak kambing menjadi pupuk kandang serta evaluasi penerapan ilmu dan teknologi beternak kambing yang telah diberikan. Berdasarkan evaluasi pelaksanaan kegiatan pengabdian yang telah dilakukan dari dua tahun yang lalu telah : a) perubahan pola beternak kambing dari (15 orang) 100% ekstensif menjadi 8 orang (53) % intensif, dan pola beternak intensif sudah mampu menerapkan 100% transfer ilmu dan teknologi yang diberikan. Hasil evaluasi yang dilakukan masih ditemukan beberapa permasalahan yang dihadapi oleh peternak seperti angka kematian pedet yang cukup tinggi, yang menjadi rencana untuk pengabdian selanjutnya untuk kegiatan pengabdian selanjutnya. **Kata kunci: (adopsi teknologi, pengabdian masyarakat dan ternak kambing)**

INTRODUCTION

Goat farming is one of the activities that has long been involved in rural communities. Some people keep goats as a side business with farming as their main business. Goats are an important component in people's farming because keeping goats on a small scale can help people's economic subsistence by utilizing the natural resources available around them.

Characteristics of goat farmers who are cultivated by small farmers (community farming) in rural areas have limited mastery of resources (land, income, innovation, and technology). Even though the goat farming business plays a role in the life of rural residents. Goats can function as a source of animal protein for the community, as savings can be sold at any time. This is in accordance with the opinion of Ilham and Mukhtar (2018), goats are one of the livestock that contribute to livestock development and the availability of animal protein for the community.

The biggest challenges in all livestock production systems in various regions include feed and land, whereas the main factor in determining livestock productivity is ensuring the availability of forage. Good feed is feed that can cover the nutritional needs of farm animals. The nutrient that has the most effect on the process of fattening livestock is protein, so breeders must know the amount of protein contained in the feed ingredients given to livestock, Nurfitria (2018).

The maintenance of goats for the Mitra Sepakat farmer group was originally only a side business to fill the days after farming. Because this business is only a side business, the management is also not optimal and even creates social conflict in the community itself. Goats that are released to find their own food actually disturb the gardens and plants of the surrounding community. This is also felt by the people in Kenagarian Palaluar. Not infrequently there are internal conflicts involving village officials to solve the problem of destroying community crops by goats.

The Nagari Palaluar government turned this problem into a potential Nagari. With inputs provided by the community, Kenagarian Palaluar has made the goat livestock business one of the leading programs to boost the community's economy. Through the guidance of a member of the Kenagarian Palaluar community who is an academic in the field of animal husbandry, members of the Mitra Sepakat farmer group were born. To support this flagship program, the Nagari Palaluar Government has produced several policies regarding goat farming;

1. Availability of the Nagari budget for goat livestock training activities to increase the capability and adoption of goat breeder technology in Nagari Palaluar in 2020, 2021, and 2022.
2. BUMNAG's capital investment from APB Nagari for the development of the goat livestock business in 2021 is Rp. 200,000,000.-
3. Collaborating with several universities related to the management of goat livestock, (Nagari Palaluar, 2022)

These policies are realized in the form of training activities and livestock business development assistance to breeders who are interested and have the potential to develop their goat farming business. In supporting the goat livestock development policy, the Nagari Palaluar Government has invited the Department of Agro-industry, especially the Animal Husbandry Study Program, as a partner.

Based on the results of field surveys and discussions with the Mitra Sepakat farmer group, information was obtained about the problems faced by farmers and it was agreed that improvements would be made as follows:

1. Breeders do not understand the knowledge of practical cage models that meet technical and health requirements.
2. Farmers do not understand the consequences of poor cage utilization will have an impact on livestock health such as the emergence of various diseases.
3. Breeders do not know about superior forage for livestock that can be cultivated on vacant land owned by breeders.
4. Farmers do not understand how to formulate and use goat feed that is around and meets quality standards by utilizing local feed. Perfect goat feed must contain complete protein, carbohydrates, fat, vitamins, minerals, and water, (Nurfitria, 2018).
5. Farmers do not understand fermentation technology to utilize agricultural and plantation waste as an alternative feed source. Nutrition-rich animal feed engineering by utilizing fermentation technology needs to be given to the Mitra Sepakat group while still paying attention to the protein content of the feed.
6. Breeders do not understand the use of livestock manure as fertilizer (organic)
7. Farmers do not know group management in the effective management of goat livestock business.
8. Farmers' knowledge regarding economic analysis and business feasibility is still very limited so the business undertaken is not yet agribusiness oriented.

METHOD

The method of implementing community service activities for goat breeders in Nagari Palaluar consists of several approaches as follows: observation, interviews, demonstration plot counseling, training, and mentoring. This community service program aims to improve the skills of raising goats and is designed and developed referring to the explanation of the Asian Development Bank or ADB (Riyadhi, Rizal, and Wahdi 2017), namely empowerment activities including economic self-reliance need to display activities that are characterized by: (1) locally based, (2)) partnership-based, (3) holistic, and (4) sustainable.

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Methods of Approach to Solving Partner Problems

Based on the results of the identification of the problems above, the solutions carried out to solve the problems of Mitra Sepakat Nagari Palaluar Farmer Group, Koto VII sub-district, Sijunjung Regency are as follows:

Non-Physical Activities

The implementation of non-physical activities includes counseling and technical guidance as a medium for transferring knowledge and technology to farmer groups. Materials for the activities carried out include: counseling on strengthening group institutions, tips on raising goats, and marketing strategies for goats. Technical guidance: cultivation of superior grass, manufacture of concentrate, fermentation of agricultural waste, feed formulation, management of goat farm waste into organic fertilizer. Methods of implementation of counseling and technical guidance will be carried out en masse, through groups and individuals.

Counseling and technical guidance that has been carried out:

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1. Goat Breeding Training
    a) Socialization of practical cage models and fulfilling health technical requirements.
    b) Dissemination of seeds, selection of seeds, and reproductive systems of goats.
    c) Dissemination of feed nutrition and goat feed sources.
    d) Socialization of livestock health and disease control.

Figure 1. Goat Raising Training 1..

Figure 2. The Active Role of Nagari Officials, Community Leaders and Extension Workers

1. Concentrate Making Training
2. Training on Making Organic Fertilizer from Goat Manure
    a) Socialization of Organic Fertilizer Production and Its NPK Content.
    b) Goat livestock business planning and analysis.

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Figure 3. Training on Making Organic Fertilizer from Animal Manure

Figure 4. Active Role of Related Services and Youth

Physical Activity

Physical activities are carried out through mentoring, and demonstration plots (dump lots) using a participatory approach. Things that have been done in physical activity are:

1. Assistance in making cages according to technical and health requirements.
2. Superior grass cultivation demonstration plot
3. Demonstration plot for making fermented feed from rice straw.
4. Demonstration plot for processing livestock waste into organic fertilizer.

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Figure 5. Demonstration plot: Making practical cages that meet technical and health requirements

Figure 6. Demonstration plot: Making Practical Cages that Meet Technical and Health Requirements

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Figure 7. Demonstration plot for making fermented feed from rice straw

Figure 8. Demonstration plot for making fermented feed from rice straw

Figure 9. Demonstration plot for Making Organic Fertilizer

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Figure 10. Demonstration plot for Making Organic Fertilizer

Figure 10. Ruzi Grass cultivation demonstration plot

To assist the group, the research team also provided assistance both in groups and individuals by providing assistance services and technical guidance to groups or each individual target breeder by means of house-to-house visits. Counseling with this method is carried out at any time as needed.

valuation of Program Implementation and Program Sustainability

Evaluation of this community service activity is carried out to find out the obstacles faced, the development and ability to raise livestock, and the technology that has been successfully adopted by breeders. It is hoped that this evaluation activity will also be able to accommodate the farmers' expectations in the future and the problems that are still being faced by the community in developing their livestock business.

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RESULTS AND DISCUSSION

The policy efforts undertaken by the Nagari Palaluar Government for the development of goat livestock are contained in Nagari Regulation (Pernag) No. 7 of 2020 and Wali Nagari Regulation (Perwanag) No. 8 of 2020 in the Field of Community Empowerment, Sub-Sector of Agriculture and Livestock Regarding Training/Bimtek/Introduction to Appropriate Technology for Agriculture and

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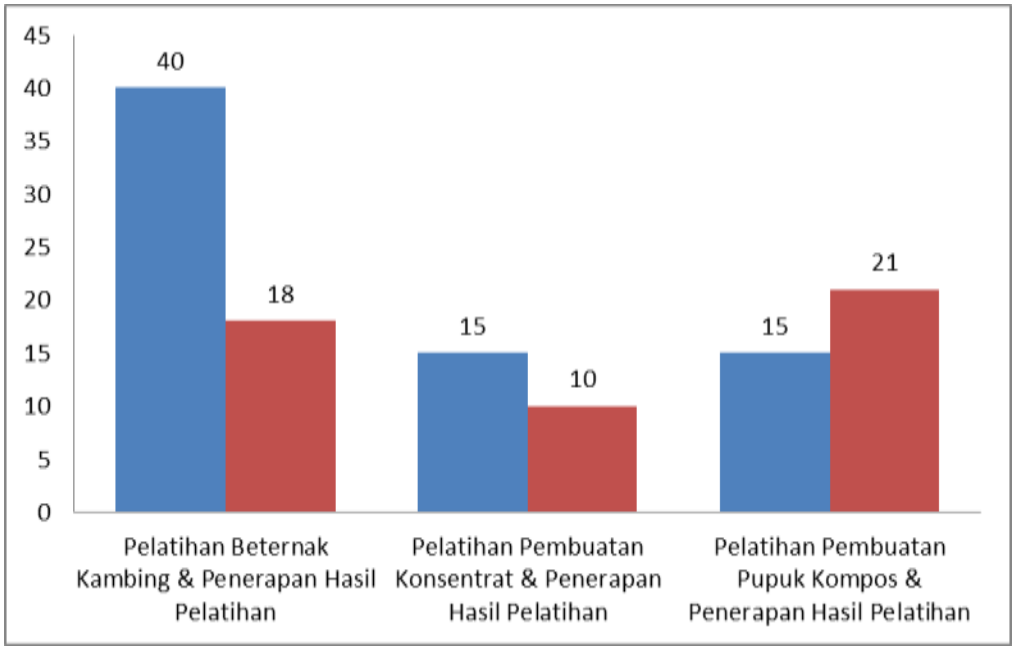
Livestock (Nagari Palaluar, 2022). With this policy, breeders have the opportunity to improve their farming skills through training and technical guidance activities organized by Nagari Palaluar.

Implementation of Counseling and Technical Guidance

Training and technical assistance were initially given to all people who had raised goats and who were interested in raising goats. This activity was initiated by the Government of Nagari Palaluar and involved various community components such as community leaders, extension workers, and farmer groups. Technical training and guidance is a good tools for learning and exploring useful things, especially learning in the field because knowing the ins and outs of business activities must be provided on a teaching and learning basis, (Yamin 2021).

HaThe results of evaluating the farmer's interest in participating in each training activity and applying the results of the training to their livestock business can be seen in Graph 1.



Graph 1. Farmers' Interest in Training Activities

Of the 40 training participants, 18 people started implementing forage cultivation activities as a source of animal feed and started managing livestock reproduction. Feeding goats prior to training is done traditionally by utilizing the forage around where the goats are released. Providing feed to goats by utilizing the potential forage from rubber plantations will result in the growth of goats being hampered, especially during the dry season where forage potential is very difficult to find so this condition is not suitable for the expected feeding management (Riswandi and Muslim, 2018).

Judging from the potential of the Nagari Palaluar area, there is still a lot of empty/idle land that can be used to cultivate superior forage. Through the service activities carried out, the service team disseminated information about the nutritional content of superior forage compared to field grass which has been a source of goat fodder. This raises public interest in cultivating it. The dedicated team is also directly involved in making demonstration plots and teaching cultivation techniques. The types of grass chosen were: ruzy grass and odot grass and the leguminous type was Indigofera. This type of forage was chosen because it has potential nutritional content and is preferred by goats.

One type of forage from the grammar group which is suitable for goat production is*Brachiaria ruziziensis* (ruzi grass). The texture of the plants is relatively soft with the size of the stems and leaves that are not physically too big according to the size and capacity of the digestive organs of goats which

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are relatively small (Hutasoit*et al.*2009). *Indigofera zollingeriana* is a legume that can be used as animal feed and is relatively new to be developed in Indonesia. This plant has a high crude protein content equivalent to alfalfa (25 – 23%), high crude protein content is ideal for livestock

ruminants. Although Indigofera is classified as a good plant source of quality feed raw materials, breeders have not made much use of this forage plant because its availability is still limited due to not being produced much (Abdullah*et al*., 2010).

Ten out of 15 people who took part in the concentrate-making and compost-making training have implemented this activity in their livestock business. With the expertise to make concentrates that are already owned, it reduces the dependence of farmers on other types of concentrates such as tofu dregs, which are currently hard to come by. This also ensures the availability of concentrate for their livestock is always available and its administration can be done regularly to increase the productivity of their livestock.

The concentrate is a reinforcing feed consisting of raw materials that are rich in protein, such as oilcake. Concentrate for goats has a crude fiber content of less than 18 percent and is easy to digest (Murtidjo, 1993). Strengthening feed is a type of feed made specifically to increase livestock production. This feed is easily digested by ruminants because it is made from a mixture of several feed ingredients, sources of energy, sources of protein, vitamins, and minerals (Kartadisastra, 1997). The purpose of providing concentrate in goat feed is to increase feed efficiency, add deficient feed elements, and increase feed consumption and digestibility. Goats are given concentrate, causing the microbes in the goat's rumen to utilize the concentrate first as a source of energy and protein. So, it can take advantage of existing coarse feed. Thus, it is easier and faster for rumen microbes to grow in a population (Wulandari*et al.*2017).

The results of a survey conducted in 2022 show that seven people who have participated in the series of activities mentioned above have carried out intensive livestock management. This shows that they have succeeded in changing the perspective of raising goats from what was previously only a side business with traditional rearing patterns to become part of a business that is already managed with good livestock management, cattle are kept in pens all day long, feed requirements come from superior forages that are supplemented with concentrates.

The skills in making compost and making concentrates obtained by goat farmers can be used as an additional source of income by breeders. The increasing price of chemical fertilizers makes the agricultural sector return to using natural fertilizers (compost) for their agricultural land coupled with the knowledge that the use of compost is very environmentally friendly. Likewise, with the ability of breeders to make their own concentrate, they can also save expenses in terms of feed costs. One of these goat breeders is Mr. Peri. Even already producing concentrates in large quantities to be traded

Development of Intensive Rearing Livestock Population

Graph 2 shows that raising livestock which is carried out intensively is able to increase the livestock population more than double or even more than the number of livestock owned by farmers at the beginning of the training. Breeders who raise livestock intensively have implemented good breeding methods. This proves that there has been a flow of information and adoption of technology that can be applied by breeders in their business activities.

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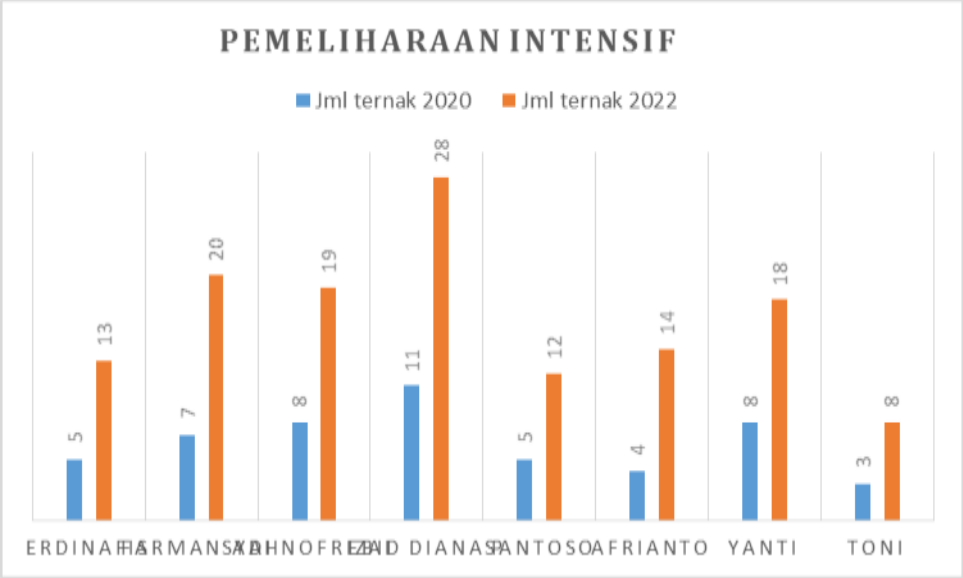

Graph 2. Development of Intensive Rearing Livestock

Partner Farmer Group Institutions Agreed

Mitra Sepakat Farmer Group was founded in 2018, with the main activities in the agricultural sector. This farming group has 22 members with the main business of cultivating rice, young plants, and garden plants. While gardening, some group members also raise goats to fill their time between gardening. With the Training/Bimtek/Introduction to Appropriate Technology for Goat Livestock Management which is held by the Nagari Palaluar Government every year, this group's members' perspectives on raising goats and their economic value have begun to change.

The farmer group chaired by Mr. Junaidi started to focus on group activities on raising goats. Now, of the 22 members of the farmer group, 15 people are already raising goats, 7 people are just implementing a semi-intensive business pattern and 8 people are already doing it intensively.

CONCLUSION

From the results of the evaluation of the implementation of community service activities that have been carried out, the results are: a) a change in the pattern of raising goats from (15 people) 100% extensive to 8 people (53) % intensive and 7 people (47%) are still extensive, intensive farming patterns have been able to apply 100% transfer of knowledge and technology provided. The results of the evaluation carried out still found several problems faced by breeders such as the high calf mortality rate, which became a plan for further community service activities.

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