AJARCDE
ASIAN JOURNAL OF APPLIED RESEARCH FOR COMMUNITY DEVELOPMENT AND EMPOWERMENT

Journal home page: http://ajarcde-safe-network.org ISSN 2581-0405

Balinese Cattle Cultivation in the Nandini Cattle Group in Balangan Kuwum Badung Village

Ni Made Ayu Gemuh Rasa Astiti[1], Anak Agung Rai Sita Laksmi[1], I Gusti Agung Putu Eryani[1], Made Pradnyagitha Harum Devani[2], Yesaya Wadu[2]

[1]*Faculty of Agriculture, Warmadewa University, Indonesia*
[2]*Animal Husbandry Study Program student, Faculty of Agriculture, Warmadewa University. Indonesia*

ARTICLE INFO

Article History:
Received: 2 June 2024
Final Revision: 27 June 2024
Accepted: 12 July 2024
Online Publication: 13 July 2024

KEYWORDS

Cage, Bali Kereman, Bali Cattle, Cultivation. Community services

CORRESPONDING AUTHOR

*E-mail: ayugemuh@gmail.com

A B S T R A C T

Kuwum Village, in Mengwi District, Badung Regency, Bali, is about 29 km north of Denpasar. Here, raising Bali Kereman cattle supplements farmers' income from farming and other jobs. Despite the potential profitability from meat, offspring, manure, and labor, the Nandini cattle group faces challenges. These include insufficient capital, inadequate feed, poor cattle maintenance, inefficient manure processing, and underdeveloped manure sales channels, hindering income maximization. The primary issue is low management capability in cattle maintenance. Effective cattle raising requires an ideal stable location, at least 10 meters from houses, accessible by vehicle, and near agricultural land, allowing sunlight. Quality seed selection, stable maintenance, and adequate feeding are essential. To address these challenges, methods such as presentations and demonstration plots for forage feeding and cage spraying are used. These activities aim to improve farmers' knowledge and practices, increasing cattle weight and farmers' income, ultimately achieving better welfare. Community Service activities have enhanced understanding and demonstrated proper maintenance, feeding, and cage spraying in the Nandini cattle group.

1. INTRODUCTION

1.1. Research Background

Kuwum Village, located in Mengwi District, Badung Regency, Bali, lies 29 km north of Denpasar along the route to the Bedugul tourist attraction. The primary livelihood of its residents is farming, complemented by the traditional, part-time raising of Balinese cattle. This age-old practice of cattle raising, integral to the agricultural lifestyle, offers significant potential for development. Kuwum Village holds promise for transformation into a tourist village that showcases the maintenance and use of Balinese cattle for traditional ploughing (metekap). This unique aspect of local culture not only preserves traditional agricultural methods but also provides an attractive, educational experience for visitors

Balinese cattle are plasma phages that must be preserved, which is supported by this government policy. This is a golden opportunity for cattle breeders in Bali in particular because Bali is one of the sources of Balinese cattle seeds and the only area that is believed to have pure genetics of Balinese cattle [2]. Good maintenance can increase the body weight of cattle [3] thus providing a higher selling price [4]. Good and correct maintenance of Balinese cattle will nourish the livestock so that the growth of livestock will be good so that the cattle farm can provide additional higher income for the farmer. The increase in income will encourage farmers to raise more cattle. In addition, it will encourage farmers to carry out maintenance in a better way, [5].

Discussions with prospective partners revealed that the cattle maintenance management process in Kuwum Village is very basic, and primarily focused on the survival of the livestock. Most farmers raise a limited number of cattle, typically ranging from 1 to 3 cattle. A significant challenge in cattle raising is the

availability of feed, particularly during the dry season when forage, the staple feed for cattles, becomes scarce.

Figure 1.The atmosphere of the environment of Kuwum Mengwi Village, Badung.
Source: Field documentation, 2024

Additionally, the village's numerous traditional activities, such as piodalan, otonan, and ngusaba ceremonies, require significant community involvement. During these ceremonial periods, many farmers struggle to find time to gather feed for their cattle, leading to undernourished cattle and negatively impacting their market value.

Moreover, the capital required for raising cattle is considerable, limiting the capacity of farmers to expand their livestock operations. This combination of limited resources, time constraints, and high costs hinders the overall productivity and profitability of cattle farming in Kuwum Village.

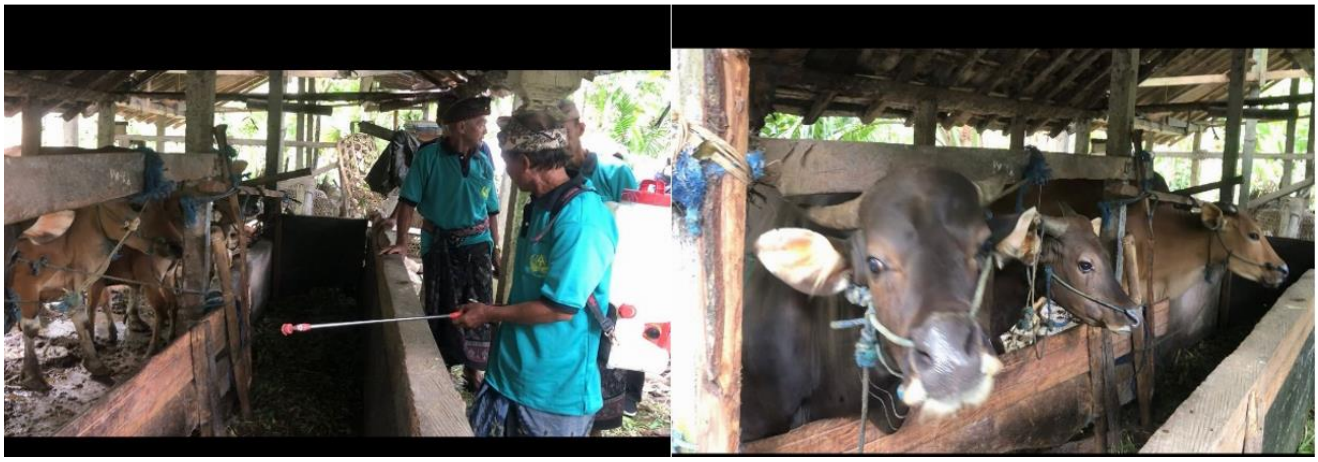

Figure 2. Mitra Cattle Stable.
Source: Field documentation, 2024

Based on the observations that have been made on partner livestock groups, for the sake of sustainability and existence, it is very feasible to get guidance and assistance from universities on an ongoing basis so that it can increase the capacity, quality, and income of Balinese cattle breeders through the PPUD Management of Balinese cattle in Kuwum Village. coaching and improving the management of Balinese cattle maintenance, processing cattle manure into organic fertilizer as well as marketing organic fertilizer products and other interrelated aspects that can provide an increase in farmers' income, with an increase in the income of automatic breeders of Balinese cattle breeders to become prosperous.

Regarding the management of Bali cattle by maintenance partners, the condition of each partner can be described as follows:

1. **Traditional and Familial Management:** The maintenance of Balinese cattle by partners is not conducted professionally. It is managed in a familial and traditional manner, serving as a part-time supplement rather than the main livelihood. Cattle maintenance is often done during free time, between gardening and farming activities, many of which now involve hired labor for tasks such as tillage, seeding, and harvesting.
2. **limited Knowledge and Skills:** Partners lack an effective cattle-rearing system due to the limited knowledge and abilities of the farmers. This results in suboptimal cattle management practices.
3. **Inadequate Facilities:** The facilities owned by partners are insufficient, with makeshift cattle sheds being the norm. As depicted in the image above, these inadequate facilities further hinder effective cattle maintenance.

1.2. Partner Problems

Based on the results of observations on partners, several problems are obstacles including:

1) The division of work in cattle maintenance is not clear because the management of cattle maintenance is carried out casually and uses family labor and cattle maintenance only as a part-time filler of free time on the sidelines of farming. So it is not the main business or livelihood of the partner.
2) The equipment owned such as grass sickle tools, and baskets where the grass has expired its economic life. Partners cannot afford to buy such equipment, so often in search of animal feed it takes a long time to scrape.
3) There is no cattle manure drain so it causes odors and the cattle pen becomes dirty.

1.3. Objective

The purpose of this program is to help partners in terms of overcoming the problems faced related to good management of Balinese cattle maintenance. From the problems that have been successfully identified, the solution to solve the problem is offered in stages for three years, and the first stage is:

1. Educating farmers to raise their livestock properly and correctly.
2. Procurement of several pieces of equipment in the process of raising cattle.
3. Pay attention to a good pen for the maintenance of brake cattle.
4. Providing counseling on how to choose good cattle seeds to be braked.

2. METHODS

Based on the identification of the problems faced by partners and the solutions offered, the method of implementing the activity:

1. Providing assistance and consultation regarding good and correct management of Balinese cattle maintenance.
2. Assist and practice how to use tools in grass cutting.
3. Accompanying farmers in providing animal feed and paying attention to the cleanliness of the cage.
4. Counseling and assistance during the Balinese cattle cultivation process.

3. RESULT AND DISCUSSION

After several meetings with partners, the schedule of activities to be carried out was agreed. Partners propose several activity schedules that are adjusted to their activities so that the training does not interfere with the activities of partners. Implementation of Community Service activities, good and correct cattle maintenance, as well as assistance and demonstrations of cage spraying as well as good and correct feeding methods for brake cattle.

Figure 3. Counseling on How to Raise Good Cattle.

 https://doi.org/10.29165/ajarcde.v8i3.458

The stages of the implementation of the planned activities can be described as follows. The team explained good and correct cattle maintenance. Forms of Science and Technology given to partners of the Nandini Cattle Group in general:

1. Providing an understanding of Balinese cattle maintenance management through the socialization of service activities intently to equalize perceptions and strengthen the institution of partner groups.
2. Providing cattle maintenance management training to the community, especially in partner groups.
3. Providing cage spraying training with Eco-Enzyme.
4. Accompanying partners in the process of feeding forage.

Figure 4. Accompanying partners in the cage cleaning process.

The maintenance of brake cattle that needs to be considered is the provision of feed (rations) and the management of the cage [6]. The functions of the cage in cattle rearing are: a) Protecting the cattle from hüjan and the heat of the sun. b) Facilitate maintenance and monitoring. c) Maintaining the safety and health of cattle [7]. Feed is the main source of energy for growth and power generation [8]. The better the quality and quantity of feed given, the greater the energy generated and still the energy stored in the form of meat [9]. Sanitation and preventive measures on intensive maintenance or cattle are caged so that farmers can easily supervise them, while extensive maintenance is difficult to carry out because the cattle are allowed to live freely [10]. Feeding in general cattle require feed in the form of forage [11]. Cattle in the growth period require adequate feed in terms of quality and quantity [12]. Feeding can be done in 3 ways: grazing (Pasture fattening), braking (dry lot fattening), and a combination of the first and second methods. Grazing is carried out by releasing cattle in pastures which is usually carried out in areas that have a large grazing area and takes about 5-7 hours per day [13]. In this way, there is no need for additional rations of fortified feed because cattle have eaten various types of grass [14].

The feed can be given by rationing/serving which is known as kereman [15]. Caged cattle and feed are obtained from fields, rice fields/other places. Every day cattle need to feed as much as 10% of their body weight and also additional feed of 1% - 2% of their body weight [16]. Additional feed is in the form of fine bran or bran, coconut meal, gaplek, and tofu pulp which is given by mixing in the grass in the feed place. In addition, minerals can be added as a reinforcement in the form of table salt [17]. Cattle feed in the form of a mixture with a certain amount and ratio is known as ration. The best feeding of cattle is a combination of grazing and braking. According to the situation, the types of forage are divided into 3 categories, namely fresh forage, dried forage, and silage. Fresh forage is grass, leguminous, and other green plants [18]. Grasses that are good for cattle feed are elephant grass, king grass, Turi leaves, and lamtoro leaves. Dried forage comes from fresh forage that is deliberately dried to be stored longer. Included in dry forage are rice straw, peanut straw, and corn straw which are commonly used in the dry season. This forage is classified as a type of feed that contains a lot of crude fiber. Fresh forage can be preserved in silage. Briefly, the production of silage can be explained as follows: the forage to be made silage is added to the fermenter and then closed tightly so that the fermentation process occurs. The result of this 2-week fermentation process is called *silage* [19]. Examples of silage that have been popularized include corn silage, grass silage, and rice straw silage.

4. CONCLUSION.

Effective cattle maintenance requires careful attention to the selection of seeds, proper feeding, and suitable cattle housing. It is recommended that community service initiatives continue, particularly in the area of producing fermented feed. This type of feed is crucial for farmers, as it can be stored and used during busy periods when they do not have time to cut fresh grass due to village activities.

REFERENCE

[1] Monografi dan Data Kependudukan Kecamatan Mengwi Badung 2023. Pusat Statistik Provinsi Bali. Denpasar.

[2] Astiti, NMAGR; Rukmini, Ni Ketut Sri dan Ni Ketut Mardewi. 2018. Teknik Budidaya Sapi Bali di Desa Selat Badung. Laporan PKM Institusi Universitas Warmadewa Denpasar

[3] Astiti, N. M. A. G. R., Astara, I. W. W., & Eryani, I. G. A. P. (2021). Bali Cattle Cultivation and Eco-Tourism in Ayunan Village Abiansemal District, Badung.

[4] Rasa, I. N. M. A. G., Astiti, M. P., Astara, I. W., SH, M., & Ir Gusti Agung Putu Eryani, M. T. (2021). Teknologi Penyuluhan Dan Komunikasi Peternakan. Scopindo Media Pustaka.

[5] Astiti, N. M. A. G. R., Rukmini, N. K. S., & Rejeki, I. G. A. D. S. (2024). Beef Cattle Feed Efficiency in Badung Regency. Journal of Agriprecision & Social Impact, 1(2).

[6] Suryani, N. N. 2012. Aktivitas Mikroba Rumen dan Produktivitas Sapi Baliyang Diberi Pakan Hijauan dengan Jenis dan Komposisi Berbeda. Disertasi. Program Pascasarjana Universitas Udayana. Denpasar.

[7] Astiti, N. M. A. G. R., Laksmi, A. R. S., & Eryani, I. G. A. P. (2023). Solid Organic Fertilizer Packaging in Karang Ayu Cattle Group in Ayunan Village, Abiansemal Sub-District, Badung. AJARCDE (Asian Journal of Applied Research for Community Development and Empowerment), 117-120.

[8] Supriadi,AliAgus,M.Darwin,Rijanta,danA.Pertiwiningrum.2017.Adopsi Inovasi Peternakan Terintegrasi. Studi Kasus: Desa Argorejo dan Argosari Kecamatan Sedayu, Kecamatan Bantul Propinsi D. I. Yogyakarta. Buletin Peternakan Vol 41(3): 338 –348

[9] Astiti, Ni Made Ayu Gemuh Rasa Astiti. 2019. Penuntun Praktikum Reproduksi Dan Inseminasi Buatan Pada Sapi. Http://Yayasangandhipuri.Penerbit.Org/Index.Php/Books/Article/View/12/10 Jaya Pangus Press Denpasar.

[10] Astiti, N. M. A. G. R. (2022). Livestock Business Development Strategy Beef Cattle In Indonesia. Eduvest-Journal of Universal Studies, 2(11), 2362-2367.

[11] Rasa, I. N. M. A. G., Astiti, M. P., Surasmi, I. A., Arygunartha, G. Y., FIS, M. P., Ir I Gusti Putu Eryani, M. T., ... & Wadu, Y. (2024). BUDIDAYA SAPI BALI. SCOPINDO MEDIA PUSTAKA.

Suparta, I N. 2009 Tata Niaga Sapi Potong dan Distribusi Bisnis Peternakan Sapi Potong Lokal dan Import. Makalah disampaikan pada acara public training "Managemen Pembiayaan Bisnis Ternak Sapi Potong" yang diselenggarakan oleh PT. FABA Indonesia Konsultan, Tgl 18 - 20 Maret 2009.

[12] Astiti, Ni Made Ayu Gemuh Rasa Astiti. 2020. Pengantar Ilmu Ekonomi di Bidang peternakan. Udayana University press. Denpasar

[13] Niam, H. U. M., Purnomoadi, A., & Dartosukarno, S. (2012). Hubungan antara ukuran-ukuran tubuh dengan bobot badan sapi bali betina pada berbagai kelompok umur. Animal Agriculture Journal, 1(1), 541-556.

[14] Muhammad, H. (2022). PRODUKTIVITAS DAN PENDAPATAN USAHA BUDIDAYA SAPI POTONG (Studi Kasus Peternak Yang Berkerjasama Dengan Raudhah farm di Nagari Bawan Kecamatan Ampek Nagari Kabupaten Agam) (Doctoral dissertation, Universitas Andalas).

[15] Khanitaturrahmah, I., Zuhriyah, A., & Hayati, M. (2022). Motivasi Peternak dalam Budidaya Sapi Potong Madura di Desa Dempo Barat Kecamatan Pasean Kabupaten Pamekasan. AGRIMOR, 7(4), 154-164.

[16] Sabil, S., Santi, S., Sohrah, S., & Rusman, R. F. Y. (2021). Manajemen Pemeliharaan Sapi Bali untuk Penggemukan. Jurnal Peternakan Lokal, 3(1), 17-22.

[17] Nurhakiki, N., & Halizah, N. (2020). Manajemen Pemeliharaan Sapi Bali Di UPT-Pt HPT Pucak, Dinas Peternakan daan Kesehatan Hewan Provinsi Sulawesi Selatan. Jurnal Peternakan Lokal, 2(1), 20-24.

[18] Radiastuti, R. F. (2012). Manajemen pemeliharaan sapi di balai pembibitan ternak unggul sapi bali kabupaten Jembrana provinsi Bali.

 https://doi.org/10.29165/ajarcde.v8i3.458