

# Toward Achieving Self-Sufficiency Livestock

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**Submission date:** 11-Nov-2019 09:56AM (UTC+0700)

**Submission ID:** 1211117810

**File name:** i\_Rasa\_2019\_IOP\_Conf.\_Ser.\_3A\_Earth\_Environ.\_Sci.\_347\_012041.pdf (397.26K)

**Word count:** 2012

**Character count:** 10821

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<sup>1</sup>  
To cite this article: Ni Made Ayu Gemuh Astiti Rasa 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **347** 012041

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## Toward Achieving Self-Sufficiency Livestock

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**Abstract.** Unlike in Australia and New Zealand where huge land area is designated for their livestock industry to meet the global demand for meat and milk, Indonesia with 14,752 islands registered at United Nation in 2003 and 260 million people is far more complicated to achieve her self-sufficiency policy targeted by 2021. The breeding of the icon Bali cattle project in 2013 at Nusa Penida Island was the right step toward the goal to minimize dependency on imported beef from Australia and frozen buffalo meat from India especially during festivals. Because of the complicated nature of the whole business all the interested parties must understand the government policy and committed so that everybody including the customer will enjoy the benefit. Our study at the cattle ranch of Sembung village Mengwi District in Badung regency central of Bali is an example of the problem for the assessment and improvement actions needed in near future. The Badung regency is 82,000km<sup>2</sup> with population of 501,126 people based on 2014 population statistic. In this regency there are six districts namely South Kota, Kota, Northern Muta, Mangwi, Abia semal and Petang having Bali cow population of 8182, 370, 1074,3692,4018 and 5516 heads respectively. Our analysis is based on the survey at Sembung village Mengwi during January to March 2017 covers several aspects including land area, people, knowledge, financial, market chains, information accessibility and management. Overall, cattle farming in this district is not their main job but rather as sidejob activity to have an additional income whenever they really need it. Despite all the consideration the majority Hindu Balinese people take less beef. Therefore the approach is to effectively contributing to the national self-sufficiency. The natural disaster due to volcanic activity should also be included in the model not only for management but also to control the middle man activity to take advantage of the situation by buying cattle at cheap price almost half of the normal price as witnessed during the recent Mount Agung eruption in 25<sup>th</sup> Nov 2017.

### 1. Introduction

Indonesia is in similar situation as her neighbouring countries Malaysia and Singapore has to import cattle or meet especially during festival occasions such as Islamic holyday, christmas and Hindu celebration days. Therefore Indonesia became a major importer of cattle from Australia about 4,555km away to the south. A buffalo beef is also imported from India to stabilize the price. Local beef cost Rp120,000 (USD9) per kg due to its freshness compare to Rp80,000 per kg for frozen beef imported from India. The Central Statistic Agency forecast the demand for meat product reach 478,360 tons in 2017 and the consumption will be higher 729,911 ton [1]. To minimize the dependency on foreign meat the government has introduced the self-sufficiency policy by 2021 [2,3,4]. It is still a difficult task despite the effort taken since 2004. In 2013 the Ministry of Agriculture and temperature changes. SAgriculture decided to improve heifer nurseries by establishing a breeding centre at Nusa Penida Island in 2013 [5]. The indigenous Bali cattle (Figure 1) was chosen as an icon cattle for breeding activity. The meat has high quality and the cattle can easily adopting with the local environment. Bali cattle is defined as organic livestock only normal or natural breeding technique is allowed.



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**Figure 1.** Bali cattle

Australia and New Zealand where huge land area are designated for livestock activity for global market Indonesia situation is quite different. Both land area and topography are not similar. On the other hand the 260 million population is certainly a good market for them. The government must have considered many factors including land area, farmer communities, market chains, management, financial, education, information accessibility and others. To promote the local farmers the government has also passed a law to stop importing from India unless in serious condition [6,7,8]. It is very important that every interested parties wherever they are to understand and cooperate with the government policy and intention. In line with the policy we decide to study the progress in Bali and specifically focus to Sembung Mengwi Badung village, Bali.

Bali is a small island with 5780 km<sup>2</sup> land area. Being the world popular tourism attraction the demand for cattle and quality food is certainly increasing. The population of Bali has also increased from 2.12 million in 1971 to 4.15 million in 2015 an increase of 12.05%. It was reported that 200 from 400 rivers in Bali have dried up [9]. This is not a good condition for agricultural activities and remedial step must be taken seriously. Our approach in this study is to look at the problems encountered by the farmers and find the solution to help them not only to increase their income but to support the government policy on self-sufficiency strategy. We could even ask the farmers why on the first place they breed the parent cow and raises the mother cow as the target output.

## **2. Materials and Methods**

The study was conducted from January to March 2017 at the main cattle rancher Sembung Village Mengwi District Badung regency. The technique of study was mainly by using survey methods [10] Data analysis was done descriptively analytically [11]. The data collected include the characteristics of livestock farming, the area of business land, land ownership, the ownership of the main Bali cattle and the capital used for the maintenance of the main cows.

## **3. Results and Discussion**

### *3.1. Characteristics of livestock resources.*

The dominant livestock business is carried out in the assessment area of the main cattle of Bali. The population of cattle in Sembung Village is 1,307. Surprisingly, the number of livestock population of

cows is 76 heads. The livestock ownership level in the cage area of the group ranging from 1 to 4 head / breeder (average 1 head of parent / rancher). Each farmer normally has a plot of land area of 100 m<sup>2</sup>. The cattle raising system is done individually in the agricultural land. Most of them are farmers growing rice, vegetables and other plants as their main activity. Therefore, cattle farming is actually a side-job activity to increase their family income and life savings to meet the urgent family needs (Table 1).

**Table 1.** Characteristics of Livestock Breeding Business in Sembung Mengwi Badung Village.

Description	Tipology	Value
Land area	Consist of 4 Banjar : Pasekan, Dajan Peken Tauman and Belang	3800 m <sup>2</sup>
Average ownership	Nyakap	50 m <sup>2</sup>
Maintenance Pattern	Individual Cage	35 people
Maintenance techniques	Traditional	100 %
Oriented business orientation	Savings	100%

### 3.2. Characteristics of human resources.

The age distribution among the farmers is relatively diverse. Only 12.8% of the farmers are less than 30 years old. Most of them are between 30 and 60 years of age which is 84.6%. above 60 years 2.56%. Half of them only had primary education (53.85%). 15.38% respondent had secondary education (SMP) and 28.21% with advanced level (SMA.). Very few farmers had Higher degree Education (2.56%). The main livelihoods in the regency are farmers (53.85%), civil servants (5.13%) and private (15.36%). Nevertheless, the average age of 40.4 years old farmers regardless of their level of education showed positive response to accept technological innovation in farming technique at individual and group levels.

### 3.3. Reasons for Breeding Cattle

The main reason the breeder keeps the Bali cattle is as family savings that they can be sale when the family requires large amount of funds. 48% of the respondent farmers fall in this category. 25% of them keep their cattle for collecting the waste (cow dung) for agricultural application existing agricultural waste and 17% respondents did it to fill the spare time and only 10% took it as to increase their daily income. The reason of cattle breeding data is given in Table 2.

**Table 2.** Reasons for Cattle Breeding

Reasons For Cattle Breeding	Total	
	Amount (People)	Person %
As Savings	48	48
Utilization of Agricultural Waste	25	25
Make Use of Spare	17	17
Increase Revenue	10	10
Total	100	100

The same observation on farmers attitude was reported by Ref. [12] and Ref. [13]. The majority of farmers practicing livestock business as saving normally take an easy attitude without motivation to increase profit or reducing maintenance cost. Everything is considered well and further maintenance is not so important. Therefore one can not expect a good growth in Bali cattle breeding business if an

average maintenance amount remain at of 2-3 heads. 14% out of 100 respondents increased the amount of cattle to increase income due to rising living expenses, children school fees, home improvement costs and daily consumption costs. 72 respondents are short of capital to buy additional parent stock of Bali cattle and as the result their activity become a side job or filling up their time.

#### 4. Conclusion

Increased revenue will encourage farmers to raise more cattle. In addition it will encourage breeders to do maintenance in a better way. This will indirectly increase the population of cattle in Bali as desired by the government. However, a better management strategy is necessary to change the farmer mindset towards increasing productivity and business oriented approach. This is a challenge for future progress.

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