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PERSPECTIVE OF CATTLE POPULATION DEVELOPMENT IN WEST JAVA INDONESIA

Rochadi Tawaf and Cecep Firmansyah

Lecture at Laboratory of Livestock Economic Faculty of Animal Husbandry
Padjadjaran University Indonesia

ABSTRACT

The One Million Cattle Development Program in West Java, is the efforts of the Government of West Java Province, in anticipation of the problems of relying on a growing imported beef from abroad or outside the other provinces in the country. West Java province in 2009 was able to contribute to 49,763 head of cattle (17.27%) of beef consumption, and the rest is met by imported cattle slaughtering around 126,932 head (44.04%) and from outside West Java, around 111,493 head (38.69%). However, the growth of beef cattle population in West Java showed an average of 6.18% per year but still cannot meet the beef consumption demand. The purpose of this study to get an overview of the potential development of beef cattle to one million heads, livestock resources, natural and forage resources, especially human resources and supporting infrastructure that accelerates the achievement of one million head of beef cattle in West Java. This study used survey methods; in some areas is a cluster beef cattle breeding development, namely District of Ciamis, Cianjur and Sukabumi. The analysis of data collected using: Location Quotient Analysis, Analysis of Forage Potential Determination, Estimated Livestock Population Analysis, Linear Regression Analysis and SWOT Analysis. The conclusion from this study; That, the based population of beef cattle in West Java is currently about 350,000 head, to reach the one million that is still a deficit of (650,000-700,000) cattle with varied ages. Achievement of the number of beef cattle population as much as one million heads need long periods until year 2023, if only relying on the natural growth (natural increased). If introduced 50,000 pregnant heifers from imported, a population of a million head of cattle in West Java will be achieved in about the year 2021. Therefore, it requires more effort to accelerate the importation of breeder and feeder cattle, mortality rate, and control of slaughter productive female cattle by law. Other factors strongly affect the increase of cattle population, which factors influence the price of beef is 38.72%, demand for beef is 25.56%, imported pregnant heifer is 18.83%, availability of forage is 15.93%, and of cattle birth factors only 7.03%.

Key words: development, population, beef cattle and West Java

INTRODUCTION

The One Million Cattle Development Program in West Java, is the efforts of the Government of West Java Province, in anticipation of the problems of relying on a growing imported beef from abroad or outside the other provinces in the country. Contribution of domestic beef production in West Java province in 2009 around 49,763 head (17.27%), and the rest of the imported beef cattle from Australia around 126,932 head (44.04%), and from another province, around 111,493 head (38, 69%). Besides that, the average natural growth of beef cattle population is relatively high (6.18% per year), but still not enough to beef consumer demand.

The business of beef cattle in West Java, mostly by smallholder beef cattle farmer's which have not economies, while the contribution of companies are relatively small portion. Thus efforts to increase the population of beef cattle is expected to create employment from upstream to downstream subsystems and increase incomes and improve food security, especially in the supply of animal foods protein.

This research objectives are to get's ideas of the development potencies of beef cattle to one million heads populations: beef cattle resource, natural resources especially forage resources, human resources, and support infrastructure to accelerate the achievement of one million head of beef cattle in West Java.

The expected output is the prospect and operational measures to achieve a million cattle population in West Java and recommendations for the implementation of the achievement of one million head of population.

MATERIALS AND METHODS

This study used survey methods at Smallholder and companies beef cattle farmers. Survey carried out in a few clusters of beef cattle breeding development in West Java, namely: in Ciamis, Cianjur and Sukabumi District. The analysis models used, are: (a) Determination of Potential Fodder, (b) Carrying Capacity of Region, (c) Estimation of Ruminants Population, (d) Linear Regression Analysis and (e) SWOT Analysis

RESULTS AND DISCUSSION

Towards One Million Population of Beef Cattle In West Java
The realizing of programs one million heads of beef cattle in West Java, to be constraint is; In this year cattle population around 350 thousand heads. The other side, according history that beef cattle population in West Java had not reached one million heads. This means with some constraint are, conditions of forages resources, increase the conversion of agricultural land, and brain drain (rural to urban). Based on the share of consumption and production of beef cattle, West Java including the consumption region (20%) and the production region (2%) of the total number in Indonesia.

Forecasting of Beef Cattle Population Increment

The forecasting cattle population growth in West java, that to reach one million heads of beef cattle will be achieved in a long time. In order to accelerating achievement of a million heads of beef cattle requires efforts are comprehensive and accommodate to all stake holders, including governments, beef cattle farmer, private sectors, and support an enabling environment. This analysis were calculated that to achieve the one million heads of beef cattle, by adding or to imported certain number of pregnant heifer, revitalization on artificial insemination or introduce bulls for natural insemination in several area, decreasing mortality rates and innovated farm management technology. Based on the technical coefficients, natural growth, without the intervention of technology, social and economic development, then the one million heads beef cattle can be accomplished in 2023 year (see Table 1).

Table 1. Forecasts the Beef Cattle Population in West Java Development

Structure	Years					
	2011	**2013**	**2017**	**2019**	**2021**	**2023**
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Cows	157,520	186,798	271,669	324,885	389,022	463,822
Bulls	21,361	16,140	10,867	12,995	15,561	18,553
offspring	215,148	250,350	357,411	425,556	507,987	606,040
Total Population	**394,029**	**453,289**	**639,946**	**763,436**	**912,569**	**1,088,416**

Source : Department of Livestock Services of West Java, 2009 (data processed))

However, if we introduced pregnant heifers within one year around 50,000 heads (as simulated), assuming calving interval of 15 month, calf mortality is 5% (life expectancy 95%), calf-sex ratio is 50%, then the population of beef cattle around 186,438 heads in 10 years (r = 373%). If the calving interval is shortened from 15 months to 14 months through farm management techniques and good artificial insemination services, then around 186.438 heads beef cattle population will be achieved for 9 years, its mean the target programs will be achieved in 2021.

If only use one analysis tools to improve the population is not recommended, because many other factors affecting the increase in population. The factors affecting to increase in population of beef cattle in West Java are: Number of Farmers, beef cattle migration out of West Java, slaughtering, beef price, the imported beef cattle in West Java, availability of feed and the level of beef cattle birth. Based on these variables and the only data available over a period of 15 years, and then performed multiple linear regression analysis to analyze the variables which provide a strong influence on the population increase. By knowing the variables affecting the policy outcome will be more accurate. The results of multiple regression analysis, it appears in the Table 2 below.

Table 2. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.963[a]	0.927	0.855	0.082147

a. Predictors: (Constant), Number of Farmers, cattle migration (out), Feed Available, beef Demand, imported cattle, cattle birth, Beef Price

b. Dependent Variable: Cattle Population

The total effect of these variables can be seen from the value of Adjusted R Square. Based on above table that the values of determination coefficient of 0.855. This shows that all variables simultaneously had the effect of 85.50% of the population growth beef cattle in West Java.

To find out which variables most affect the increased population of beef cattle, and then performed a partial analysis by looking at the coefficients of each variable. The value of this coefficient will determine the level of variable influence of the increasing population of beef cattle in West Java. In order to detail can be seen in the Table 3 below.

Table 3. Coefficients[a] Determination each Variabel

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Zero-order	influence (%)
	B	Std. Error	Beta				
1 (Constant)	0.205	14.787		0.014	0.989		
Migration (in)	0.43	0.876	0.228	0.491	0.639	0.826	18.83
Migration (out)	-0.661	0.367	-0.387	-1.799	0.115	0.272	
Birth	0.054	0.371	0.080	0.146	0.888	0.879	7.03
Slaughter	0.394	0.402	0.285	0.981	0.359	0.897	25.56
Beef Price	0.353	0.577	0.461	0.611	0.560	0.840	38.72
Forage availability	0.642	1.767	0.187	0.363	0.727	0.852	15.93
Number of Cattle Farmers	-0.084	1.085	-0.037	-0.077	0.941	0.815	

a. Dependent Variable: Cattle population

Table 3. Describes the variables that have strong influence is the beef price. The price Influence of beef on the growth of beef cattle population is 38.72%. That is changes in population growth in beef cattle in West Java during the last 15 years were strongly influenced by the price change of 38.72%. The demand variables have influence levels around 25.56%. The definition of the beef cattle slaughtering in this study is similar to the level of demand for beef. Another variable influence to cattle population are; cattle migration (in) is 18.83% , Forage availability is 15.93% and Birth is 7.03%

CONCLUSIONS

the based population of beef cattle in West Java is currently about 350,000 head, to reach the one million that is still a deficit of (650,000-700,000) cattle with varied ages. Achievement of the number of beef cattle population as much as one million heads need long periods until year 2023, if only relying on the natural growth (natural increased). If introduced 50,000 pregnant heifers from imported, a population of a million head of cattle in West Java will be achieved in about the year 2021. Therefore, it requires more effort to accelerate the importation of breeder and feeder cattle, mortality rate, and control of slaughter productive female cattle by law. Other factors strongly affect the increase of cattle population, which factors influence the price of beef is 38.72%, demand for beef is 25.56%, imported pregnant heifer is 18.83%, availability of forage is 15.93%, and of cattle birth factors only 7.03%.

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