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Evaluation of the initial approach strategy of animal husbandry service officers on the characteristics of beef cattle farmers as determinants of the sustainability of the artificial insemination program

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ABSTRACT

The artificial insemination program carried out by the Department of Animal Husbandry and farmers has not shown the expected results, there is even a tendency that this program is just a name. This unsustainability trend is based on the results of field surveys on farmers participating in the artificial insemination program, the cause of which is the weak initial approach strategy by animal husbandry officials on the characteristics of farmers, such as in terms of education, consultation, cross check line, and follow-up. The purpose of this study was to evaluate the initial strategy of the characteristic approach to beef cattle farmers in the sustainability of the artificial insemination program run by the livestock department. The research method used is to determine three regency, the number of respondents 30 people participating in the artificial insemination program is determined intentionally, namely 10 people each for each regency and is considered representative because it is homogeneous. The data was collected by means of focused group discussions, direct interviews using questionnaires, then the data that had been collected was processed and analyzed by descriptive statistics. And to facilitate data processing, the qualitative and quantitative data collected is processed by categorizing 3 levels based on the Likert scale, namely high = 3, medium = 2, and low = 1. The results showed that the rating score of the characteristics through the approach of education, consultation, cross check line and follow-up, each rating score was 1.77; consulting 1.78; cross check line 1.56; and follow-up 1.56. This means that the initial approach of the artificial insemination program carried out by the livestock service on the characteristics of beef cattle breeders still requires total improvement through the stages of education, consultation, cross check line, and follow-up approaches for control.

Keywords: Characteristics, strategy, beef cattle farmers, artificial insemination program

A. Introduction

Special Efforts for Pregnant Cows *(UPSUS SIWAB)* are important among the central government, in this case the Ministry of Agriculture of the Republic of Indonesia through the Directorate General of Livestock, which is instructed to the provincial and district livestock offices to become the core program to be implemented by beef cattle farmers in the context of population development, self-sufficiency, meat and increase the income of farmers. As an acceleration of the target of fulfilling the domestic beef cattle population, the Ministry of Agriculture launched the *UPSUS SIWAB* program. *UPSUS SIWAB* includes two main programs, namely population increase through artificial insemination and

intensification of natural mating. The program is stated in the Minister of Agriculture Regulation Number 48/ Permentan/ PK.210/ 10/ 2016 concerning Special Efforts to Accelerate the Increase of Pregnant Cattle and Buffalo Populations which was signed by the Minister of Agriculture on October 3, 2016. The objective of increasing the population is a form of beef self-sufficiency which is targeted to be achieved in 2026 and to realize an independent Indonesia in fulfilling food of animal origin, and at the same time improving the welfare of farmers. The benefits of this program according to Hastuti (2008) that to increase the success of artificial insemination can be done by counseling or empowering beef cattle farmers, so that farmers are more skilled, and understand the benefits of artificial insemination. Fadwiwati et al (2019), stated that the results of assistance from the Agricultural Technology Study Center of the Gorontalo Agricultural Research and Development Agency showed that the *UPSUS SIWAB* program that had been implemented had problems or obstacles in the field, including a semi-intensive rearing system (livestock were released during the day and penned at night days), the lack of human resources for technical personnel, lack of knowledge of farmers to detect the condition of cattle in lust and knowledge of diseases as well as prevention and control of diseases in cattle, lack of knowledge of technology for the use of agricultural and plantation waste as animal feed, and lack of forage fodder. Suryana (2013), and Bargevoet (2005), added that the competence and characteristics of beef cattle farmers also determine the sustainability of the artificial insemination program. Further stated the influential characteristics such as motivation, business capital, status of forage land ownership, expertise in acting as an inseminator, number of beef cattle ownership, and household needs of farmers, as well as beef cattle ownership status and farm land ownership. Meanwhile, competency factors that influence are technical, managerial and entrepreneurial competencies. Rogers (1997), states that the program can be well-deffused if the farmer has felt the relative advantage of the results he is trying because the beef cattle farmer evaluates it and has an impact on raising awareness and paying attention to the program.

Reinforced by Inonu, (2017) that to succeed *UPSUS SIWAB* an integrated system is needed that is supported by knowledge of reproduction and structured reproductive management starting from the selection of productive females ready to become pregnant, males, natural mating methods or artificial insemination (availability of semen, liquid N2, supporting equipment and inseminators), early detection of pregnancy, management of feed and feeding, control of reproductive and other diseases, monitoring of pregnant mothers, and handling during birth and after birth. According to Sutiyono et al (2016), the biggest disturbance of reproductive activity in cattle is caused by nutritional factors provided by farmers, and disturbances due to disease and abnormal reproductive organs problems faced by farmers in terms of supporting the success of government programs such as *UPSUS SIWAB* can be solved if empowerment is carried out properly and structured through the characteristics and competence approach of beef cattle farmers, and if the two critical success factors have been resolved, then there is a tendency for development to occur beef cattle population and the impact of meat self-sufficiency, so that at the same time it is answered that there is no need to import beef, and has been able to meet domestic demand. According to Ilham, et al (2015), that the demand for beef continues to increase from time to time. Domestic production is only able to meet around 65%, so the shortfall is met from imported products in the form of 20% frozen beef and 15% domestically fattened feeder cattle.

The government has set a target of 4 million productive females to be given artificial insemination. Beef cattle resulting from artificial and natural insemination can be targeted to be pregnant at least 75% or as many as 3 million heads/new calves (Directorate General of Livestock and Animal Health, 2019). To support the success of *UPSUS SIWAB*, several activities will be carried out, including: planting grass and legumes covering an area of 13,000 ha, providing ponds (water sources), and providing medicines and vaccines to improve animal health status (Syahrul 2017). In addition, the *UPSUS SIWAB* program in providing forage feed must be sufficient to support the reproductive development of pregnant cows.

Historically, the 2010-2014 government program, namely the target of self-sufficiency in meat, had to be achieved but failed, namely it

has not been achieved and continues to import frozen meat and feeder beef. This is reinforced by Ashari et al (2012), stating in the strategic plan of the Ministry of Agriculture 2010-2014 it is stated that there are four main targets to be achieved or maintained, one of which is achieving sustainable beef self-sufficiency. How to turn people's livestock into a livestock industry that produces large quantities in a fast time. There are two activities of the *UPSUS SIWAB* program that will be the focus of the government, namely artificial insemination and natural mating, which can improve the economic value of calf cattle in farmers.

According to Saptana et al (2003), stated that the 2010-2014 program had not been achieved because institutional support had not received adequate handling such as technology, assisting facilities and infrastructure, business loans with small interest, and stability in livestock and beef prices. The importance of institutional support is because institutions play a role in mobilizing various actors, such as artificial insemination officers, extension workers, farmers, and business actors. Institutions, such as extension workers and inseminators, both act as drivers as well as boosters in increasing beef cattle business. Farmer institutions, both farmer groups and farmer groups combined, have the opportunity to form farmer economic institutions. However, farmer institutions must be formed based on the needs of farmers and in accordance with the environment (Anantanyu, 2011). Institutional support can be done by collaborating with government institutions, as well as with fellow farmers (Siswoyo, 2013). Institutions at the farmer level directly act as a forum for jointly developing businesses to obtain optimal profits. According to Indraningsih (2011), extension and institutions have a role in farmers' decision making.

Muladno (2016), stated that government programs so far seem to have a significant impact on the development of livestock populations, and more than 50% of the budget per program is usually used for livestock spending in the form of feeder cattle and brooders. Added by Suryana (2013), and Rogers (1997), stated that the program can be well-defensed if the farmer has felt the relative advantage of the results he has tried because beef cattle farmers assess it and have an impact on the emergence of awareness and pay attention to the program. And for its implementation, the animal husbandry department should have a strategy in the initial approach to farmers participating in artificial insemination such as conducting education, consultation, cross check line and follow-up as well as controlling.

From the description above, it turns out that until now there has not been an evaluation in terms of the success of developing beef cattle populations, and the occurrence of self-sufficiency and increasing the income of beef cattle farmers, and until now it has not been predictable from the success of *UPSUS SIWAB*. Various statements of research results which state that the institutional factors of farmers are weak, technical factors such as the availability of forage land is weak, the availability of vaccines for livestock is weak, human resources for farmers are weak, the business capital of farmers is weak, the use of the government budget is 50% intended to buy feeder cattle and cattle parent. Therefore, solutions should be sought to solve the root of the problem so that it becomes a strategic issue, and to get answers from all research results that have been carried out by previous researchers, and can improve the implementation model of the *UPSUS SIWAB* program so that it is right on target, this research will contribute through a characteristic approach and the competence of beef cattle farmers as individual producers as expressed by Suryana (2013), and Bargevoet (2005), through educating, consulting, cross-check line and follow-up and control strategies.

The problem discussed in this study, which is used as a direction and in carrying out the operational conception of the purpose of this research as well as to provide answers to the improvement of prospective artificial insemination programs in the future, is how to describe the initial strategy of livestock service officers in carrying out an approach through the characteristics of beef cattle farmers for sustainability. artificial insemination program, namely by education, consultation, cross check line and follow-up and control.

B. Research Methods

Because this study is based on the disclosure of the factors of the initial strategy of livestock service officers in the approach to the characteristics of beef cattle farmers which

include education, consultation, cross check line and follow-up as well as control in terms of determining the sustainability of the artificial insemination program, this study used a sample or respondents as many as 30 beef cattle farmers were determined by purposive sampling and in each district there were 10 respondents who experienced the treatment of participating in the artificial insemination program. The 30 respondents contributed to produce and answer the phenomenon of the problem of the sustainability of the artificial insemination program. Methods of collecting data were Focus Group Discussion (FGD) and direct interviews with the help of a list of questions or questionnaires. The basis for making questions on the questionnaire and determining variables is derived from the results of pre-research, namely surveys, direct observations and FGD. After the data is collected, it is continued with descriptive statistical analysis. Because this research is descriptive quantitative in nature, all qualitative data are quantified using the Likert scale, namely high = 3, medium = 2, and low = 1 (Riduwan, 2007; Creswell et al., 2008; Silalahi, 2012; Rianse and Abdi, 2014). Then to determine the category range, the rating score used moves from 0.00 to 1.00, including the low category, the value from 1.00 to 2.00 in the medium category, and the value from 2.00 to 3.00 is included in the high category, meaning if the rating score is between 2.00 and 3.00, it means that the initial strategy of livestock service officers in carrying out the artificial insemination program through the characteristic approach of beef cattle farmers is in accordance with or in line with the artificial insemination program so that it is categorized as continuing, but if the rating score is small from 2.00 means that there are still things that need to be improved in the artificial insemination program to make it sustainable.

This type of research is descriptive quantitative in nature, so to obtain theoretical implications and policy implications, this research departs from deductive to inductive. Therefore, this research is looking for solutions to the problems faced by beef cattle farmers following the artificial insemination program, in order to get answers to the acceleration of an increase in population and beef self-sufficiency through improving the initial strategy of livestock service officers on the characteristic approach of beef cattle farmers as the main actors artificial insemination program. In connection with the sustainability of the artificial insemination program, there are problems that must be disclosed and the answers to be found, including how the animal husbandry service officer describes in carrying out the artificial insemination program which is carried out through initial strategies in the form of education, consultation, cross check line and follow-up as well as control of characteristics beef cattle farmers for the sustainability of the artificial insemination program.

The basis for testing or grand theory in this study is based on the results of research by Suryana (2013), and Bargevoet (2005). As a novelty or novelty of this research, the determining factor for the sustainability of the artificial insemination program is largely determined by the initial strategy of the livestock service officer in approaching the characteristics of beef cattle farmers following the artificial insemination program. It is hoped that this research can contribute to policy makers and beef cattle farmers, as well as to complete the implementation of the artificial insemination program so that it can be sustainable and achieve the targets set by the government.

As an operational concept for this research problem, if the initial strategy carried out by animal husbandry officials regarding the characteristics of beef cattle farmers as individual producers following the artificial insemination program is fulfilled or in line with the government program, then there is a tendency for the artificial insemination program to be sustainable.

C. Results and Discussion

1. An overview of the strategy for the initial approach of livestock service officers on the characteristics of beef cattle farmers as a determinant of the sustainability of the artificial insemination program.

Based on the results of research that refers to data collected from 30 respondents of beef cattle farmers, the initial strategy of livestock service officers on the characteristics of beef cattle farmers is used as the basis for determining the sustainability of the artificial insemination program, which can increase the population and the occurrence of meat self-sufficiency and

improve the welfare of beef cattle farmers. The approach referred to in this study is education, consultation and follow-up as well as controlling. For more details can be seen in Table 1.

Table 1. Description of the initial strategy of livestock service officers on the characteristics of beef cattle farmers as a determinant of the sustainability of the artificial insemination program.

Aspect	Variables and Indicators	Value Response			Rating Score	Category
		1	2	3		
The initial strategy for the approach of livestock service officers to the characteristics of beef cattle farmers as individual producers in the artificial insemination program.	1. Education:				1,77	Medium
	a. Shows real examples of successful farmers with artificial insemination programs.	20	5	5	1,50	
	b. Comparing the success of artificial insemination programs and non artificial insemination programs (population and income increase).	11	9	10	1,96	
	c. The frequency of guidance or field assistance from officers to beef cattle farmers for artificial insemination programs.	10	11	9	1,96	
	d. Obtaining a training system and farmer visits / procedures for accelerating the implementation of the artificial insemination program.	14	12	4	1,66	
	2. Consultation:					
	a. Frequency of weekly consultation					
	b. Consultation place					
	c. Consulting network					
	d. Tools used in consulting				1,78	Medium
	e. The nature/focus of the consultations carried out.	12	13	5	1,66	
		7	15	8	2,03	
	3. Cross check line of success for participants of the artificial insemination program:	13	13	4	1,70	
		15	11	4	1,63	
	a. Through monitoring and evaluation	10	13	7	1,90	
	4. Follow-up:				1,56	Medium

	a. Carry out control				
		15	13	2	1,56
					1,56
		14	15	1	1,56

From Table 1 it appears that there are 4 variables studied with 11 indicators, each consisting of: (1) educative variables with 4 indicators; (2) consultation variable with 5 indicators; (3) variable cross check line success between participants of the artificial insemination program with 1 indicator; and (4) the variable performs follow-up through improvement and control with 1 indicator. And for more details in order to get an overview of the achievements of each variable and indicator can be discussed successively as follows:

1.1. An overview of the education of livestock service officers in conducting an initial approach to the characteristics of beef cattle farmers in an artificial insemination program.

The initial approach strategy of livestock service officers on the characteristics of beef cattle farmers participating in the artificial insemination program in terms of education shows a rating score of 1.77 including the medium category, which comes from the way the officers approach the characteristics of beef cattle farmers in the artificial insemination program about giving real examples of the results of the implementation The successful artificial insemination program is in the moderate category with a rating score of 1.50. This means that the meaning of the value achieved is that the livestock service officer in implementing the artificial insemination program has not shown results as expected by the farmer so that it is still far from perfection, with this fact it is hoped that future strategies should need to take an initial approach to farmers before carrying out artificial insemination program activities through pre surveys. namely so that in the future livestock service officers can follow the needs of beef cattle farmers, and the approach taken to breeders is an activity that is urgently needed or desired at every stage of the implementation of an artificial insemination program that is based on real evidence and can be implemented by farmers. And if this is used as a work base for livestock service officers in the artificial insemination program, and also according to the needs of beef cattle farmers, the sustainability of the artificial insemination program will be achieved.

Likewise, education in terms of the approach strategy of livestock service officers to beef cattle farmers which describes the comparison of the results achieved between artificial insemination programs and non-artificial insemination programs, regarding population increase, meat self-sufficiency and increasing income shows a rating score of 1.96 in the medium category, meaning that the strategy the approach of livestock service officers to farmers still needs perfection. This means that the current approach taken by animal husbandry officials has not met the expectations of farmers. And in the future, the comparison of benefits between the actors of the artificial insemination program and non-artificial insemination programs should be drawn mainly from the aspect of profit from the financial side, technical cement procurement, inseminators, management of feed adequacy, and how to handle lust cattle.

For an illustration of education in terms of the frequency of assistance from livestock service officers to beef cattle farmers, the artificial insemination program obtained a rating score of 1.96 in the medium category, meaning that the process of assisting livestock service officers to farmers in carrying out artificial insemination programs has not been in accordance with regulatory standards, namely at least in a month it should be done two times a month for each farmer group with training activities and visits (Law No. 6 of 2006), and in fact the service officers have not been able to meet the standard of assistance because the ratio of extension

workers to beef cattle farmers is not comparable or animal husbandry service officers are relatively few in number compared to beef cattle farmers, then the livestock service officer is domiciled or the residence of the officer is relatively far from the location of the implementation of the artificial insemination program.

While the description of education in terms of beef cattle farmers receiving training and visits from livestock service officers in order to accelerate the success of the artificial insemination program obtained a rating score of 1.66 in the medium category, meaning that it is still far from perfect so that in the future it is necessary to improve the treatment of the training system and visits, because so far The results showed that at the beginning of the artificial insemination program the implementation was quite good, but in its journey until now no training and visits were carried out, and in the implementation only two-way communication between beef cattle farmers and the inseminator if beef cattle farmers needed an inseminator officer to do artificial insemination, but if Beef cattle farmers neglect to observe their beef cattle that are in heat, so the treatment at the time of artificial insemination has decreased by one cycle of estrus. This happened because the livestock service officers had very low field visits as well as the provision of training to beef cattle farmers in connection with the artificial insemination program. Thus, the contribution of this research to livestock service officers in the implementation of the artificial insemination program is expected to improve the training system and visits so that the artificial insemination program can be sustainable.

1.2. An overview of the consultation of livestock service officers in carrying out an initial approach to the characteristics of farmers in the artificial insemination program.

The initial approach strategy of livestock service officers on the characteristics of participating beef cattle farmers in terms of consultation shows a rating score of 1.78 including the medium category, which comes from the way the officers approach the characteristics of beef cattle farmers about the frequency of weekly consultations including the medium category with a rating score of 1, 66. This means that livestock service officers in conducting consultations on the frequency of artificial insemination programs should be conducted weekly and at least once in 2 weeks. So it can be stated that livestock service officers in conducting frequent consultations with beef cattle farmers, the artificial insemination program has not shown results as expected from the farmers so that it is still far from perfect, with this fact it is hoped that future strategies should need to take an initial approach to farmers before implementing the artificial insemination program through pre-survey is that beef cattle farmers want a weekly consultation meeting to follow the progress of the implementation of the artificial insemination program.

Likewise, the implementation of consultations in terms of the place for the implementation of the consultation carried out by livestock service officers to beef cattle farmers showed a score rating of 2.03 in the high category, meaning that the approach strategy of livestock service officers to farmers was in accordance with the expectations of farmers, namely the approach in terms of the consultation place that is often carried out which is carried out under or under the head of the farmer group's house, even at the location of the farm and once at the village office and complete with sound system supporting facilities.

For an overview of the consultation in terms of the consultation network of livestock service officers for beef cattle farmers, the score rating is 1.70, the medium category means that the consultation network is not fully targeted because it still does not use the priority order of each farmer group group, such as the priority of the consultation network in succession of group leader farmers, fast recipients then slow recipients and rejecters. Therefore, in the future, a consultation network is needed from livestock service officers to the head of the farmer group, then from the head of the farmer group and the early majority recipients who diffuse down to the late majority recipients and the rejecters.

While the description of the consultation in terms of the use of communication tools in consultation used by livestock service officers with beef cattle farmers got a rating score of 1.63 including the medium category, meaning that the consultation communication tools used were

not effective, which was felt by beef cattle farmers considering that most of them were in the form of verbal delivery, while what beef cattle farmers want is in the form of direct treatment or learning by doing, on the other hand a communication tool in remote consultation between livestock service officers and beef cattle farmers to discuss things related to the artificial insemination program, only certain farmers have cell phones who can talk directly to animal husbandry officials but are also sometimes constrained by network factors in rural areas or research sites, and beef cattle farmers who do not have telephones are unable to consult about farmers problems with the artificial insemination program he faces.

Then the description of the consultation in terms of the focus of consultation at every meeting between livestock service officers and beef cattle farmers gets a rating score of 1.90 including the medium category, meaning that the consultation of beef cattle farmers has not been properly focused on the implementation of the artificial insemination program or has not been structured according to the stages of the artificial insemination program. And it is hoped that in the future the focus of the consultation should discuss the artificial insemination program from upstream to downstream, and be discussed in stages.

1.3. An overview of the crossed check line of success by animal husbandry officers in carrying out an initial approach to the characteristics of farmers in the artificial insemination program.

The initial approach strategy of livestock service officers on the characteristics of participant beef cattle farmers in terms of cross check line success between participants of the artificial insemination program showed a rating score of 1.56 including the medium category, which was sourced from the way the officers approached the characteristics of beef cattle farmers through evaluation monitoring, it turned out of the 30 respondents there were 15 respondents who stated that a cross check line was not carried out on the success of the artificial insemination program participants, and 13 stated that it was rare for a cross check line to be carried out on the success of the artificial insemination program, and 2 respondents who stated that a cross check line was carried out to the participants of the artificial insemination program who succeeded through evaluation monitoring. The meaning contained in the value achieved by the cross check line variable, the success of the artificial insemination program participants is still dominated by the respondent's statement stating that livestock service officers do not cross check line through evaluation monitoring of artificial insemination program participants, so that in the future, for the sustainability of the artificial insemination program, it is necessary improved implementation of cross check line activities through monitoring and evaluation.

1.4. An overview of follow-up through improvement and control by livestock service officers in carrying out an initial approach to the characteristics of artificial insemination program farmers.

The initial approach strategy of livestock service officers on the characteristics of participating beef cattle farmers in terms of follow-up on the implementation of the artificial insemination program through improvement and control of activities that are not in line with standard operating procedures for the artificial insemination program shows a rating score of 1.56 including the medium category, which comes from the way officers approach the characteristics of beef cattle farmers through improvement and control, it turns out that from 30 respondents there were 14 respondents who stated that there was no improvement and control in the artificial insemination program that was not in accordance with standard operating procedures in order to achieve achievement targets including the availability of strow, then negligence of the inseminator in the implementation of insemination. artificial insemination, and 15 stated that follow-up was rarely carried out in the form of improvement and control of the implementation of the artificial insemination program that did not meet the targets and standard operating procedures, and 1 respondent stated that it was done do follow-up through improvement and control of the artificial insemination program according to standard operating procedures. The meaning contained in the value achieved by the follow-up variable through the improvement and control of the implementation of the artificial insemination

program is still dominated by the respondent's statement stating that the livestock service officer does not follow up through the improvement and control of the implementation of the artificial insemination program, which has been carried out according to standard operating procedures, so that in the future for the sustainability of the artificial insemination program, it is necessary to increase the implementation of follow-up activities through activities and improvements to the artificial insemination program that must follow standard operating procedures.

D. Conclusion

From the results and discussion of the research, it can be concluded that the initial approach strategy carried out by livestock service officers on the characteristics of beef cattle farmers for the sustainability of the implementation of the artificial insemination program through education, consultation, cross check line and follow-up has not shown encouraging results or is not appropriate. which is expected by the government and beef cattle breeders, this is indicated by the average value achieved by each variable including the medium category. So that by implication the government's policy is expected to improve the approach strategy based on the recommendations of this study so that the artificial insemination program can be successful and sustainable. And the theoretical implications of this research are still in line with those proposed by Suryana, 2013, and Bargevoet, 2005.

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