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IMPLEMENTATION STRATEGY ON BEEF CATTLE DEVELOPMENT THROUGH THE LIVESTOCK ASSISTANCE PROGRAM IN GORONTALO DISTRICT, INDONESIA

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ABSTRACT
This research aims to analyze alternative strategic priorities in the beef cattle assistance program that can be implemented in Gorontalo Regency. The research was carried out in Gorontalo Regency. The primary and secondary data collected were analyzed using the Analytic Hierarchy Process (AHP) method and descriptive statistics. The research results show that priority alternative strategies in the beef cattle assistance program that can be implemented are: 1) revitalizing the role of extension workers and partner institutions (0.228), 2) increasing business capital and production facilities (0.207), 3) increasing the knowledge and skills capacity of farmers (0.200), 4) strengthening of breeder institutions (0.144), 5) coordination of policymakers (0.131), and 6) distribution of livestock aid on target (0.090). Implementation of the beef cattle assistance program requires 63.7% policy support from the regional government through the Gorontalo Regency Animal Husbandry and Animal Health Service in the form of regulatory support, budget allocation, and intensive and sustainable assistance.

KEY WORDS
Implementation strategy, livestock assistance, beef cattle.

Livestock development is part of the development of the agricultural sector and an important part of the food security system. Gorontalo Regency has a populations number continues to increase every year. This condition encourages an increase in the amount of food needed, including food from livestock. The beef cattle commodity is one solution for the community in providing food needs as a source of animal protein.

Beef consumption in Gorontalo Regency increases every year along with the increase in population, income and community welfare. Public awareness of the importance of consuming highly nutritious food also continues to increase due to the influence of increased education and public understanding. This is an important reason for beef cattle farming continues to be developed by the government and the private sector.

The population of beef cattle in Gorontalo Regency in 2022 will be 104.29 thousand head (Gorontalo Regency PKH Service, 2023). This amount cannot fully meet the needs of the community, both inside and outside the district and province. On the other hand, high population growth is inversely proportional to population size and beef cattle productivity. The low population and productivity of beef cattle is caused by the majority of livestock being kept by traditional breeders with small scale businesses and limited land and capital.

Beef cattle are a meat-producing livestock commodity that has the potential to be developed in Gorontalo Regency. Optimizing the increase in population and productivity of beef cattle must pay attention to the carrying capacity of the available resources because this is one of the important factors in achieving optimal productivity. The condition of large enough land and the availability of abundant feed throughout the year support the development of beef cattle farming. Efforts made in Gorontalo Regency are in the form of providing beef cattle assistance to the community, especially farmer groups.

The beef cattle assistance program in Gorontalo Regency is interesting to study further because many parties have an interest in this program. Regional leaders have an interest in providing attention to the people, while livestock groups have an interest in improving their

welfare. The beef cattle assistance program has quite high risks. This can be seen from the many problems in the field and those reported in the mass media, both online and print media.

The Gorontalo Regency Government, through the Animal Husbandry and Animal Health Service, almost every year implements a beef cattle assistance program. This program faces many challenges and problems in the field, including the procurement and distribution process to farmer groups, so research is needed to find solutions to the problems. The aim of this research is to analyze alternative strategic priorities in the beef cattle assistance program that can be implemented in Gorontalo Regency.

METHODS OF RESEARCH

This research was carried out in Gorontalo Regency. The research location was chosen with the consideration that Gorontalo Regency has several potentials, such as: 1) the largest population of beef cattle in Gorontalo Province, namely 101.69 thousand heads or 38.15% of the total population of the province which reached 266.55 thousand heads (BPS Gorontalo Province, 2023) and 2) beef cattle will become a leading regional commodity.

The population in this research is all stakeholders in institutions related to beef cattle development in Gorontalo Regency. The sampling technique is carried out through purposive sampling.

Analysis of priority strategies for implementing the beef cattle assistance program completed using a sample of experts taking into account people who are experienced and understand the problems of beef cattle development in Gorontalo Regency. A description of the selected expert samples based on their institutions is presented in Table 1.

Table 1 – Expert Sample Based on Institution

No.	Institutions	Expert Sample (person)
1	Local government:	
	Animal Husbandry and Animal Health Sector, Gorontalo Province Agricultural Service	1
	Gorontalo Regency Animal Husbandry and Health Service	5
2	College:	
	Animal Husbandry Study Program, Gorontalo State University	1
	Animal Husbandry Study Program, Muhammadiyah University Gorontalo	1
3	Professional Organization:	
	Indonesian Association of Animal Husbandry Engineers and Scholars	1
	Association of Indonesian Livestock Socioeconomic Scientists	1
	Total	10

Primary data that related to the implementation of the beef cattle assistance program was collected from expert respondents through interviews and questionnaires. Interviews were conducted using guided questions to explore problems in implementing the beef cattle assistance program. The questionnaire distributed to respondents was a list of closed questions compiled based on Thomas Lorie Saaty's statistical comparison scale.

Secondary data comes from related agencies, such as: Livestock and Animal Health Service (PKH) and the Central Statistics Agency (BPS). Secondary data collection is carried out through documentation or searching existing documents. Other supporting data comes from various scientific libraries, such as: relevant journals and theoretical books.

The data collected was analyzed using descriptive statistics and the Analytic Hierarchy Process (AHP) method (Saaty, 2003). Alternative strategies for implementing the beef cattle assistance program were analyzed with AHP to prioritize existing alternative strategies. This method begins by creating criteria for implementing the beef cattle assistance program based on the viewpoint or perspective of expert respondents.

The Expert Choice (EC) program is used to operate the AHP. The EC program was chosen as a tool to solve problems in implementing the beef cattle assistance program. The operational principles of the EC program follow the standard manual format for the AHP method. Before carrying out the analysis, there are several principles that must be

understood in solving problems with AHP, which are: decomposition, pairwise comparison, priority synthesis, and consistency ratio.

Problems in implementing the beef cattle assistance program are defined and then described or solved into their elements. Solving is also carried out on elements until no more solving can be done. This process is called hierarchical arrangement (decomposition), as seen in Figure 1. Decomposition of the problem produces several hierarchical levels, such as: 1) Goals, 2) Criteria (Objectives), 3) Sub Criteria, and 4) Alternatives.

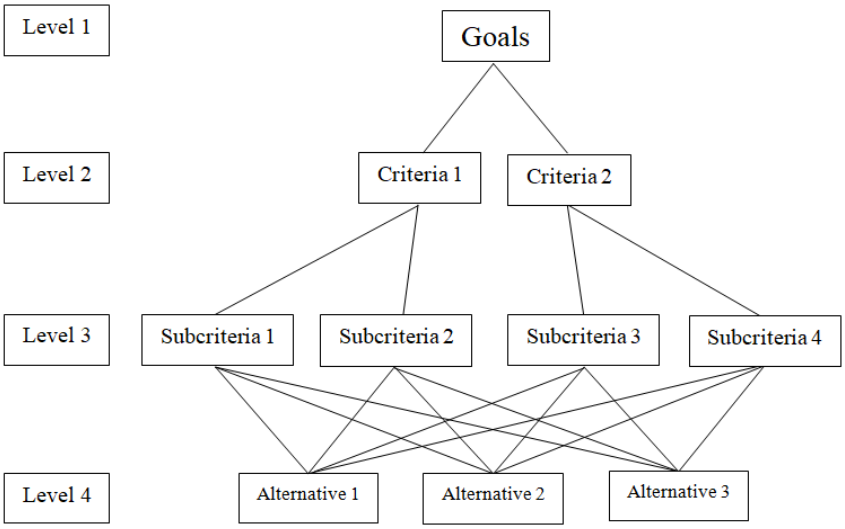

Figure 1 – Decomposition Process

Assessment by respondents is carried out through a pairwise comparison matrix carried out on the criteria, sub-criteria and alternative elements so that the value weight of each element can be known.

Table 2 – Pairwise comparison matrix

C	A_1	A_2	A_3	A_4	A_5	A_n
A_1	1	A_{12}	A_{13}	A_{14}	A_{15}	A_{1n}
A_2	A_{21}	1	A_{23}	A_{24}	A_{25}	A_{2n}
A_3	A_{31}	A_{32}	1	A_{34}	A_{35}	A_{3n}
A_4	A_{41}	A_{42}	A_{43}	1	A_{45}	A_{4n}
A_5	A_{51}	A_{52}	A_{53}	A_{54}	1	A_{5n}
A_m	A_{m1}	A_{m2}	A_{m3}	A_{m4}	A_{m5}	A_{mn}

Notes: A_1 = Alternative1.

The assessment process is carried out based on the Thomas Lorie Saaty appeal scale. Assessment is the core of AHP because it influences the priority of each element in the hierarchical structure so that before carrying out an assessment, respondents must understand this. A description of the comparison scale used can be seen in Table 3.

Table 3 – Comparison Scale in Pairs

Importance Level	Definition	Explanation
1	Equally important	Both elements are equally important
3	More important	One element is a little more important
5	Very important	One element is clearly more important
7	Very important	One element is very important
9	Extreme is very important	One element is much more important
2, 4, 6, 8	Slight, medium plus, strong plus, very strong	The value between two adjacent assessments
	Reciprocal	If element i gets one number compared to element j, then element j gets the opposite value to element i and vice versa

Source: Saaty, 2008.

The results of comparative assessments at all levels by respondents are accumulated and elements are ranked according to their relative importance. Ordering elements according to their relative importance is called priority synthesis.

Testing whether a comparative assessment is consistent or not to ensure that all elements have been grouped and ranked consistently. The CR consistency ratio value < 0.1 or below 10% indicates that the respondent is consistent in their perceptions so that the assessment results can be accepted and accounted for. Respondents can review and revise the assessment results if pairwise comparisons show inconsistency values. The consistency ratio can be calculated manually with the following equation:

$$CI = \frac{\lambda maks - n}{n - 1}$$

$$CR = \frac{CI}{RI}$$

Where: CR = Consistency Ratio; CI = Consistency Index; λmaks = Eigenvalues; n = Total Criteria; RI = Random Index.

Thomas Lorie Saaty determines the Random Index (RI) value and determines the scale according to the number of criteria used. RI values according to the number of criteria can be seen in Table 4.

Table 4 – Random Index Value

N	1	2	3	4	5	6	7	8	9	…
RI	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	…

Source: Saaty, 2003.

RESULTS AND DISCUSSION

Beef cattle development programs through livestock assistance are often accompanied by various problems that can hinder the achievement of the program's objectives. Based on the interviews conducted, it is known that there are various problems faced in developing beef cattle through livestock assistance. Existing problems require resolution through a decision-making process in the form of implementation strategies by decision-makers. According to Fanani (2017), several stages of decision-making: 1) defining the problem clearly, 2) creating and compiling a list of problems so that there is a systematic direction, 3) identifying each problem to provide a more specific picture, 4) mapping each problem based on groups using models or test equipment.

The decision-making process can be carried out using the Analytic Hierarchy Process (AHP) method. As a decision-making tool, the AHP method begins with a decomposition process to analyze the various existing problems and group them in the form of a hierarchical structure for the implementation of the beef cattle assistance program. According to Retnoningsih (2011), decision-makers must break down problems into elements and arrange them in a complex hierarchical structure.

The hierarchical structure of the implementation of the beef cattle assistance program describes the relationship of problems in groups and levels based on factual reality and respondents' perspectives. Problem decomposition produces several levels of hierarchical structure, which are targets, criteria, and sub-criteria. The targets for implementing the beef cattle assistance program in Gorontalo Regency have various problems so they must be broken down by group (Figure 2).

Problems are collected through aspirational stakeholder observations and perceptions, then grouped into three criteria elements, such as 1) the condition of livestock development areas, 2) the real conditions of beef cattle breeders, and 3) regional government policy support. The existing problem criteria are then broken down into several more specific problem sub-criteria elements. The criteria for the condition of livestock development areas

are broken down into four subcriteria elements: 1) natural conditions or ecological environment, 2) people conditions or socioeconomic environment, 3) distribution of beef cattle, and 4) availability of land and feed resources.

The criteria for the real conditions of beef cattle breeders in the field include several subcriteria elements: 1) mindset and understanding, 2) knowledge and skills, 3) livestock business capital, and 4) commitment to contract agreements. The criteria for government policy support are broken down into several Subcriteria elements, those are: 1) socialization of aid programs, 2) production infrastructure and facilities, 3) assistance to extension workers, and 4) technical guidance and training.

Figure 2 – Hierarchical Structure of Implementation of the Beef Cattle Assistance Program

The value weight of each element at each level influences the priority of the elements in the hierarchical structure. The priority of alternative strategies in the beef cattle assistance program that will be implemented is known after a priority synthesis of all assessment results is carried out. The final assessment is carried out on alternative strategies related to the Sub Criteria elements.

The weighted value of the synthesis results shows the priority alternative strategies in the beef cattle assistance program that can be implemented, namely: 1) coordination of policy makers (0.131), 2) distribution of aid on target (0.090), 3) increase in business capital and production facilities (0.207), 4) increasing the capacity of breeders (0.200), 5) strengthening breeder institutions (0.144), 6) revitalizing the role of extension workers and partners (0.228). The respondent's inconsistency value in making assessments was 0.07, as seen in Figure 3.

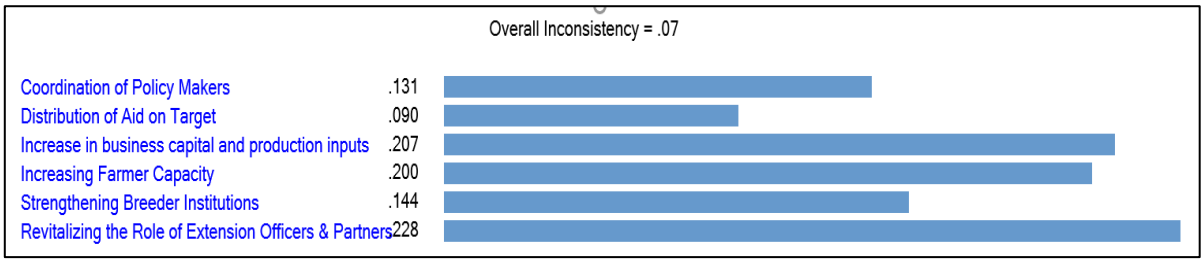

Figure 3 – Synthesis of Priority Strategy for Implementation of the Beef Cattle Assistance Program

The results of the priority synthesis show that revitalizing the role of extension workers and partner institutions in the field has a higher value than other alternative strategies. Alternative strategies that also have a high value weight are increasing business capital and

production facilities as well as increasing the capacity of breeders. This shows that the role of extension workers and partner institutions can be directed to support increasing business capital and livestock production facilities as well as increasing the knowledge and skills of breeders. An inconsistency value of less than 0.1 indicates that in general respondents are consistent in providing their perceptions so that the assessment results are considered valid and acceptable.

The lowest value is found in the distribution of livestock aid on target. This happens because most of the Gorontalo Regency area is suitable for livestock development, especially beef cattle. Based on regional inventory and mapping, it is known that of the 19 existing sub-districts, 11 sub-districts or 58% can be used as beef cattle development areas. The priority areas are eight sub-districts, such as: Pulubala, Tolangohula, Asparaga, Mootilango, Bongomeme, West Limboto, Limboto, and Boliyohuto. There are three sub-districts as buffer areas, such as: Tibawa, Tabongo, and Dungaliyo. The government can focus beef cattle development on priority areas and buffer areas (Sahara, 2019)

The priority synthesis results are then displayed in the form of a dynamic sensitivity graph. This graph shows the percentage values of criteria and alternative beef cattle development policies (Figure 4).

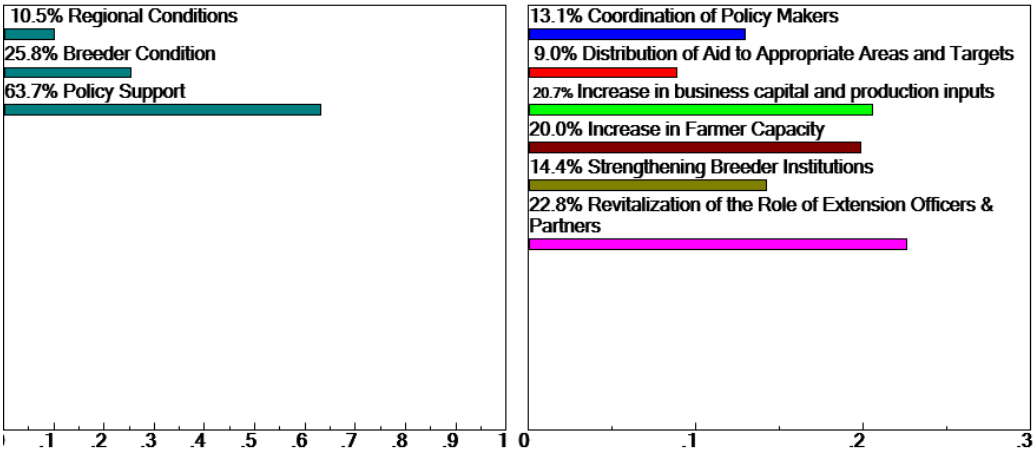

Figure 4 – Dynamic Sensitivity Graph of Implementation of the Beef Cattle Assistance Program

The dynamic sensitivity graph display shows the percentage value of policy support of 63.7%. This shows that the implementation of the beef cattle assistance program has very large policy support. Regional government policy support through the Gorontalo Regency Animal Husbandry and Animal Health Service can take the form of regulations, budget allocations, and intensive and sustainable assistance.

Three alternative strategies have the highest percentage values, namely: 1) revitalizing the role of extension workers and partners (22.8%), 2) increasing business capital and production facilities (20.7%), and 3) increasing the capacity of breeders (20%). The accumulated percentage value of these three strategic alternatives is 63.5% so that more than 60% of the resources owned for beef cattle development can be allocated to support these three policy alternatives. The type of beef cattle developed by breeders and dominant in livestock assistance in Gorontalo Regency is Bali Cattle because in general Gorontalo Province is the distribution area for Bali Cattle (Sahara et al, 2019).

CONCLUSION

Based on the description of the research results and discussion, several conclusions were obtained, are:

- Priority alternative strategies in the beef cattle assistance program that can be implemented, such as: revitalizing the role of extension workers and partners, increasing business capital, production facilities, the capacity of breeders,

strengthening breeder institutions, coordinating policymakers, and 6) distribution of aid on target;

- Implementation of the beef cattle assistance program requires enormous policy support from the regional government through the Gorontalo Regency Animal Husbandry and Animal Health Service in the form of regulatory support, budget allocation, and intensive and sustainable assistance.

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