



# The Strategic Role of Human Resources in Improving the Quality and Quantity of Animal Feed Production in XYZ Village, Karawang Regency

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**Abstract.** Human resources play an important role in improving the quality and quantity of animal feed production. This study aims to analyze the role of human resources in increasing animal feed production in XYZ Village, Ciampel District, Karawang Regency. The methods used are surveys and interviews with farmers as well as field observations. The results showed that increasing the knowledge and skills of farmers through training had a positive impact on increasing live-stock productivity. In addition, the availability of skilled labor is also very helpful in optimizing animal feed production. It was concluded that the development of human resources, especially farmers and agricultural workers, is a key factor in improving the quality and quantity of animal feed production at the research site. The policy recommendation given is the need for continuous training and mentoring programs for farmers and workers.

**Keywords:** Human resources, Animal feed production, Breeder knowledge, Breeder skills

## 1 Introduction

Human resources are an important asset in determining the success of an organization or activity, including in the field of animal husbandry [1–4]. Human resource development aims to improve knowledge, skills, and abilities to carry out their duties optimally [5–8]. This is especially true in animal feed production that requires special knowledge and thoroughness. Therefore, improving the quality of human resources, especially farmers and labor, is seen as strategic to improve the quality and quantity of animal feed production [1, 9–12].

XYZ Village, Karawang Regency is one of the livestock centers in West Java that still faces challenges in optimizing animal feed production. Some problems that often arise include low knowledge of farmers and lack of labor skills in making quality feed [1, 9, 13]. The formulation of the problem in this study is "What is the strategic role of human resource development in improving the quality and quantity of animal feed production in XYZ Village?"

The purpose of this study is to analyze the role of human resource development in improving the quality and quantity of animal feed production in XYZ Village [1, 9, 14].

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The benefits of the results of this study are expected to provide policy recommendations related to the development of human resources in the field of animal husbandry at the research site [2, 4, 14, 15].

The main problem in this study is the low quality and quantity of animal feed production in XYZ Village [1, 10, 11], which is partly caused by less than optimal human resources, especially farmers and labor. There is a gap that previous research focused more on the technical aspects of animal feed production [2, 14, 16, 17], while the role of human resource development has been under-explored. Therefore, this study will fill the gap by analyzing the strategic role of human resource development in increasing animal feed production at the research site [10, 12, 18].

Some previous studies related to animal feed production were conducted [10] who examined the use of probiotics in animal feed, as well as research from [14, 19] on the implementation of feed fermentation technology. However, the two studies did not specifically examine the role of human resource development in optimizing animal feed production. Therefore, this research is expected to complement previous research by focusing on aspects of human resources. In addition, this research is also expected to provide a deeper understanding of the strategic role of human resource development in improving the quality and quantity of animal feed production in XYZ Village, as well as providing policy recommendations for human resource development in the field of animal husbandry. In addition to the human resource development approach, there are several other factors that affect the quality and quantity of animal feed production in XYZ Village that need to be considered.

## 2 Method

Based on the data that has been presented, this study uses survey methods and interviews with farmers as well as field observations. This method allows researchers to obtain data directly from the source and also provides a more comprehensive picture of the role of human resources in increasing animal feed production in XYZ Village [20].

In carrying out this study, researchers conducted a survey to collect data on farmers' knowledge, skills, and practices related to animal feed production. In addition, direct interviews with farmers provide an in-depth understanding of the challenges they face in animal feed production and the efforts that can be made to develop their human capital. Field observations were also conducted to obtain a visual picture of the conditions of animal feed production at the research site.

In addition, the study may also consider the use of questionnaires as a data collection tool, which can help obtain more measurable and structured information about the role of human resources in animal feed production. The sample for this study can be randomly selected from the list of all farmers in XYZ Village. We will assign each farmer on the list with a number. Then we will use a random number generator to pick farmer numbers from the list. The farmers associated with the randomly selected numbers will become our study sample. This random sampling method ensures that every farmer in XYZ Village has an equal chance of being selected for participation in the study. Our

final sample size will be [50] farmers randomly drawn from the village's farmer population in this manner to represent the overall farmer demographics at the study site”.

### 3 Results and Discussion

#### 3.1 Results

Animal feed production is a key factor determining the success and sustainability of livestock business. Animal feed with appropriate nutritional content and given in sufficient quantities will support optimal livestock growth. Therefore, the knowledge and skills of farmers in terms of quality animal feed production become very important. XYZ Village is one of the livestock centers in the region with a fairly large goat population. However, based on preliminary observations, livestock productivity in XYZ Village is still relatively low. One of the suspected causes is a problem in the animal feed aspect. So far there is no valid data related to the real condition of the capacity of XYZ Village farmers in terms of animal feed production. Therefore, we conducted surveys, interviews, and field observations of 50 farmers in XYZ Village to gather information related to their knowledge, skills, and practices related to animal feed production. The aim is to evaluate the extent of capacity farmers currently have and identify further training and capacity-building needs.

Based on the results of surveys, interviews, and field observations conducted in XYZ Village are as follows:

**Survey.** The survey was conducted to collect data on farmers' knowledge, skills, and practices related to animal feed production. A total of 50 farmers in XYZ Village were respondents. The survey results show that 60% of farmers have basic knowledge about the composition of good feed for livestock. However, only 40% of them have skills in creating feeds with the appropriate composition.

**Table 1.** Results of Farmer Knowledge and Skills Survey on Animal Feed Production in XYZ Village

Description	Number (of people)	Percentage
1. Number of respondents.	50	100%
2. Have basic knowledge of good feed composition.	30	60%
3. Have skills in creating feed with the appropriate composition.	20	40%

Table 1 shows the results of a survey of 50 farmers in XYZ Village regarding their knowledge and skills in terms of animal feed production. The results showed that 60% had basic knowledge of good feed composition, but only 40% had skills in creating feed with the appropriate composition.

**Table 2.** Characteristics of Respondents

No	Initials	Age	Gender	Education	Breeding experience (years)
1	AR	55	Man	SHS	9
2	BS	40	Man	JHS	10
3	CT	48	Man	ES	5
4	DU	55	Woman	ES	8
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46	TK	62	Man	ES	12
47	UL	58	Man	Not end ES	6
48	UM	50	Man	JHS	7
49	WN	53	Woman	Not end ES	5
50	AA	59	Man	Not end ES	4

**Interview.** Direct interviews with farmers provide an in-depth understanding of the challenges they face in animal feed production and the efforts that can be made to develop their human capital. From this interview, it is known that many farmers feel the need for a more intensive training program to optimize animal feed production.

**Table 3.** Results of Interviews with Farmers related to Human Resource Development

No	Description	Number (of people)	Percentage
1	Feel the need for a more intensive training program to optimize animal feed production	37	74%
2	Feel enough with the knowledge you have at this time	10	20%
3	Not interested in joining a training program	3	6%
Total		50	100%

The table above shows the results of interviews with 50 farmers regarding their views on the need for training programs for human resource development. As many as 74% feel the need for more intensive training programs.

**Field Observation.** The results of field observations obtained a visual picture of the condition of animal feed production in XYZ Village. From these observations, it can be seen that some farmers still use traditional methods in making animal feed, which affects the quality and quantity of animal feed production.

Table 4 displays the results of field observations of 50 farmers in XYZ Village regarding animal feed production conditions. It is known that 64% still use traditional methods in the manufacture of animal feed.

**Table 4.** Field Observations of Animal Feed Production Conditions in XYZ Village

No	Description	Number of breeders	Percentage
1	Using traditional methods in the manufacture of animal feed	32	64%
2	Using modern machinery/equipment in the manufacture of animal feed	15	30%
3	Does not have production facilities (buying feed from suppliers)	3	6%
Total		50	100%

The results of this study suggest that the development of human resources, especially breeders and agricultural workers, plays an important role in improving the quality and quantity of animal feed production in XYZ Village.

### 3.2 Discussion

Based on the research results presented, several important discussions need to be considered in the context of human resource development in animal feed production in XYZ Village.

**Farmer Knowledge and Skills on Animal Feed Production.** The knowledge and skills of farmers in creating a good feed composition greatly affect the quality of animal feed production. Although most breeders have basic knowledge, only a small percentage have skills in creating feed with the right composition. This shows the need for skill improvement through a more intensive training program for farmers in XYZ Village. In this context, previous research has shown that increasing the knowledge and skills of farmers can have a direct impact on improving livestock production performance. According to research by [21–23], training programs that focus on developing farmers' skills in animal feed management have proven effective in improving production efficiency. Therefore, policy recommendations to strengthen training and mentoring programs for farmers in XYZ Village can be based on the findings of this previous research. In addition, the interview results show that many farmers feel the need for more intensive training programs are in line with findings from research by [9], which shows that farmer participation in sustainable training programs is very important in improving the quality of livestock production. From this research it can be seen that human resource development factors, especially through training and mentoring programs, play a strategic role in increasing animal feed production. However, the approach to human resource development in increasing animal feed production is not only focused on improving the knowledge and skills of farmers. There are other factors to consider in this context, such as access to modern technology in animal feed production and effective management of livestock businesses. Research by [5, 24–27] shows that the integration of modern technology in animal feed production can significantly increase the productivity of livestock businesses. Therefore, policy recommendations for human resource development in animal feed production in XYZ Village should also include

efforts to increase farmers' access to modern technology and provide assistance in effective management of livestock businesses. Taking into account the relevant findings of previous research, this study provides an in-depth understanding of the strategic role of human resource development in improving the quality and quantity of animal feed production in XYZ Village. Policy recommendations should include training and mentoring programs that integrate knowledge, skills, and access to technology. and management of livestock business, to ensure a sustainable increase in animal feed production. Thus, this research can make a significant contribution in supporting the development of human resources in the field of animal husbandry, especially in XYZ Village.

**Human Resource Development.** Improving the quality and quantity of animal feed production through human resource development requires a comprehensive approach, which includes not only the improvement of knowledge and skills, but also aspects of mental development and motivation for farmers [9, 28, 29]. Research conducted by wanapat and Y Wang shows that training programs that focus on developing farmers' skills in animal feed management have proven effective in improving production efficiency [28, 30]. This is in line with findings from interviews that indicate the need for more intensive training programs. In this case, improving skills through training programs focused on animal feed management is a relevant step in increasing animal feed production in XYZ Village. In addition, research by Arvanitoyannis and D. Ladas. also emphasizes the importance of farmer participation in sustainable training programs in improving the quality of livestock production [10]. From this, it can be seen that human resource development through training and mentoring programs plays a strategic role in increasing animal feed production. Nevertheless, the development of human resources in animal feed production is not only focused on improving the knowledge and skills of farmers. The integration of modern technology in animal feed production, as suggested by research by Arvanitoyannis and D. Ladas, is also an important factor in increasing the productivity of livestock businesses. Therefore, policy recommendations for human resource development in animal feed production in XYZ Village should include efforts to increase farmers' access to modern technology and provide assistance in effective management of livestock businesses. From the results of the research and theoretical discussion, it can be concluded that more intensive training programs, skill development, farmer participation in sustainable training programs, and the integration of modern technology are interrelated aspects and need to be considered in human resource development to increase animal feed production in XYZ Village. Taking into account relevant previous research findings, policy recommendations should include training and mentoring programs that integrate these various aspects to ensure sustainable improvement in animal feed production.

**Overview of Animal Feed Production Conditions.** From the results of field observations found that some farmers still use traditional methods in making animal feed, it can be concluded that a holistic approach in human resource development is needed. It also confirms the need to involve farmers in the introduction of technology and innovation in animal feed production. Based on the findings of previous research, it can be

seen that human resource development in animal feed production requires a comprehensive approach involving various aspects. Farmer participation in sustainable training programs, farmer skill development, integration of modern technology in animal feed production, and effective management of livestock businesses are all interrelated and need to be considered in efforts to increase animal feed production. Policy recommendations for human resource development in animal feed production in XYZ Village should include training and mentoring programs that not only improve farmers' knowledge and skills, but also ensure farmers' access to modern technology and assist in effectively managing livestock businesses. This is in line with the importance of a holistic approach in human resource development, which also involves the introduction of technology and innovation in animal feed production based on the results of field observations. Thus, it can be concluded that the policy recommendations provided through this study cover various relevant and interrelated aspects, to ensure a sustainable increase in animal feed production in XYZ Village.

Thus, the results of this study highlight the importance of human resource development in increasing animal feed production in XYZ Village. Policy recommendations that can be given are the need for continuous training and mentoring programs for farmers and workers in XYZ Village to increase animal feed production. This program should include increasing knowledge and skills, introducing technology, and building motivation for farmers in order to optimize animal feed production efficiently and sustainably.

## 4 Conclusion

Human resource development in animal feed production in XYZ Village requires a holistic approach. Training programs that focus on developing farmers' skills in animal feed management have proven effective in improving production efficiency. In addition, the importance of farmer participation in sustainable training programs also shows that human resource development through training and mentoring programs plays a strategic role in increasing animal feed production.

Some farmers use traditional methods to manufacture animal feed, which shows the need for a holistic approach to human resource development that involves the introduction of technology and innovation. Therefore, policy recommendations for human resource development in animal feed production in XYZ Village should include training and mentoring programs that integrate various aspects, ranging from improving farmers' skills to modern technological approaches.

The policy recommendations provided should include training and mentoring programs that integrate various aspects, such as increasing knowledge, skills, introduction to technology, and building motivation for farmers in order to optimize animal feed production efficiently and sustainably. Cooperation between the government, research institutions, and industry players is also needed to pay attention to the local context and the real needs of farmers in XYZ Village. Thus, a holistic approach and cross-sectoral cooperation in human resource development are needed to improve the quality and quantity of animal feed production in XYZ Village.

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