

# Farmer Empowerment Strategy in Improving Local Chicken Farming Businesses in Minahasa District, North Sulawesi Province

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**Abstract**— Local chicken farming in Minahasa District, North Sulawesi Province, cannot develop into a commercial business, because the farmers' resources have not mastered the cultivation and marketing technology that is in line with current demands. The purpose of this study was to obtain a strategic model for farmer empowerment in order to be able to master cultivation and marketing technology. By relying on the measurement of perceptions and formulating strategies, it is known that the role of extension agents is the most important thing in empowering farmers. Empowerment of farmers must be stimulated by the driving force of the market, namely how to develop a culinary business and local chicken meat processing industry. This can be done through the seriousness of the government in making regulations that implement special programs. Empowerment in cultivation development should be oriented towards the use of digital media which leads to efficiency and effectiveness in the use of production factors, while in marketing, namely utilizing technology with a data base system.

**Keywords**— Farmer empowerment: farmer perception: strategy formulation.

## I. INTRODUCTION

The population of local chickens or native chickens in Minahasa Regency continues to increase. Although there is no definite data on population size, according to research results in Kakas District, the average population increase is around 15-20 percent. This population increase is due to natural reproductive processes.

The significant increase in population does not make farmers develop intensive maintenance efforts by being confined, farmers still survive in traditional ways, even though they are faced with various risks of being stolen by people, chickens are eaten by predatory animals so they are susceptible to infectious diseases that cause death.

In line with the government's strategy to develop a local chicken farming industry, it is appropriate that joint efforts be made to empower farmers. Almost all farmers in Minahasa Regency continue to maintain the traditional way of raising local chickens, namely that the livestock are only released to find their own food, without having to be caged with regular feeding, for fear of taking the risk of loss if they change their commercial methods of raising. This anxiety was exacerbated during the conditions of the Covid 19 Pandemic, where farmers were worried that if they were already producing a lot, they would experience marketing difficulties.

This condition is because farmers are still behind in the mastery of cultivation and marketing technology, so that

efforts to empower farmers through counseling and mentoring activities, development of management systems, development of database-based marketing systems and strengthening of farmer institutions are needed.

**Formulation of the problem:** (1) How do farmers perceive the concept of farmer empowerment through extension and mentoring activities, development of management systems, development of database-based marketing systems and strengthening of farmer institutions. (2) How to formulate a strategy for the development of a local chicken farm in Minahasa District.

**Research purposes:** (1) To find out farmers' perceptions of the concept of farmer empowerment to increase the business of native chicken farming in Minahasa District. (2) To formulate a strategy for the development of commercial domestic free-range chicken farming in Minahasa District.

**Proposition:** (1) Farmers want to increase the local chicken farm business, because they realize that they can increase income for the economic welfare of the family. (2) Business development is directed at the strategy of penetration and market expansion, because this is the belief of farmers in increasing their business with a commercial maintenance system.

## II. LITERATURE REVIEW

### A. The Concept of Empowerment

The concept of empowerment states that each individual or group obtains sufficient skills, knowledge and power to influence their own life and the lives of others [1]. The first stage is the desire of the community itself to change for the better. In the second stage, the community is expected to be able to remove obstacles or factors that are resistant to progress in themselves and their communities. In the third stage, the community is expected to have received additional freedom and feel they have a responsibility in developing themselves and their communities. The fourth stage is an effort to develop broader roles and limits of responsibility, this is also related to interest and motivation to do a better job. In this fifth stage, tangible results of empowerment begin to appear, where an increased sense of belonging results in better performance outcomes. In the sixth stage, there has been a change in behavior and his impression of himself, where success in improving performance is able to increase psychological feelings over the previous position. In the seventh stage, people who have succeeded in empowering

themselves feel challenged to a bigger effort to get better results.

**B. Agricultural Extension**

The definition of extension as contained in Law no. 16 of 2006 is a learning process for main actors and business actors so that they are willing and able to help and organize themselves in accessing market information, technology, capital and other resources, as an effort to increase productivity, business efficiency, income and welfare, as well as raise awareness in the preservation of environmental functions.

The real purpose of agricultural extension is to change the target behavior. The goal to be achieved by agricultural extension is to gradually develop the ability of farmers to have an increasing level of knowledge, an adequate inventory of information and the ability to apply the required technology so that they are finally able to solve problems and make the best decisions for their farming [2].

In agricultural extension, the role of an extension is very important. In carrying out its duties, an agricultural extension agent has a role as a Facilitator, Motivator, Communicator, Innovator and a role as an organizer [3].

**C. Perception Concept**

People’s perceptions are influenced by one’s view of a situation, fact, or action. There are three mechanisms for shaping perception, namely: selectivity, closure, interpretation. The information that reaches a person causes the individual to form perceptions, starting with selecting or filtering it, then the incoming information is compiled into a meaningful unit, and finally there is an interpretation of the facts of the whole information [4].

Perception is the process by which we become aware of the many stimuli that affect our senses [5]. Perception is the process of receiving information on stimuli from the environment and turning it into psychological awareness [6]. According to [7], perception is essentially a cognitive process experienced by everyone in understanding information about their environment, either through sight, hearing, appreciation, feeling, and smell.

Therefore, to change one's behavior must start from changing one's perception. In the perceptual process, there are three main components as follows [8]: (1) Selection is the process of filtering the senses to external stimuli, their intensity and type can be many or a little. (2) Interpretation, namely the process of organizing information so that it has meaning for someone. (3) Interpretation and perception are then translated into behavior as reactions.

**D. Local Chicken Farm**

Local chicken is very popular with the name chicken or ayan not rasa (Buras). The scientific name for local chickens is Gallus domesticus. Local chicken farming activities have existed since ancient times. Local chicken livestock is a type of poultry that has become popular in the community and spread throughout the archipelago. For the Indonesian people, local chicken is not new

Generally, the local traditional domestic chicken rearing system. This maintenance system is usually carried out by most rural farmers with an average maintenance scale of 3 cows per farmer. Local chickens are raised by being left free, farmers do not pay attention to technical aspects and economic calculations, where native chicken feed is not provided specifically, only relying on agricultural leftovers. There are also breeders who give rice bran but not regularly. The housing system is not paid attention to, some are locked up near the kitchen, and some are just perched on the branches of trees at night [9].

Local chickens are often found in rural areas and almost every household raises them. However, there are still many obstacles in the local chicken business, such as a high mortality rate, this is due to the background of its maintenance being a side business with the aim of taking the meat and eggs as a family nutrition addition and selling them when they need money.

**E. Comprehensive Strategy Formulation Analytical Framework.**

The important strategy formulation techniques can be integrated into three decision-making frameworks [10].

Stage I: Input Stage				
External Factor Evaluation (EFE) Matrix		Competitive Profile Matrix (CPM)		Internal Factor Evaluation (IFE) Matrix
Stage 2 : Matching Stage				
Strength-Weaknesses-Opportunities-Threats (SWOT)	Strategic Position and Action Evaluation (SPACE)	Boston Consulting Group (BCG)	Internal External (IE)	Grand Strategy
Stage 3: Decision Stage				
Quantitative Strategy Planning Matrix (QSPM)				

Fig. 1. Analytical Framework for Strategy Formulation  
Source: David and David (2015)

Stage 1 of the framework formulation consists of an EFE matrix, IFE matrix and Competitive Profile Matrix (CPM). Called the input stage, stage 1 summarizes the basic input information needed to formulate a strategy. Stage 2, called the matching stage, focuses on developing viable alternative strategies by aligning key internal and external factors. Stage 2 techniques include the Strength-Weaknesses-Opportunities-Threats (SWOT) Matrix, Strategic Position and Action Evaluation (SPACE) Matrix, Boston Consulting Group (BCG) Matrix, Internal External Matrix (IE), Grand Strategy Matrix. Stage 3, which is called the decision stage, involves a single technique, the Quantitative Strategy Planning Matrix (QSPM). QSPM uses the input information from stage 1 to objectively evaluate the alternative strategies identified in stage 2. QSPM reveals the relative attractiveness of alternative strategies and provides an objective basis for selecting a particular strategy. The nine techniques included in the strategy formulation framework require integration of intuition and analysis.

The most important thing in the Strategy Formulation analysis is that there is a relationship starting from identifying external opportunities and threats and determining internal strengths and weaknesses (EFE-IFE), then building long-term

goals (IE), producing alternative strategies (SWOT), and choosing a priority strategy / strategy implementation (QSPM) [11].

III. RESEARCH METHOD

This research was conducted in Minahasa District from January to March 2020. This type of research was qualitative research in the form of descriptive-qualitative research. The research design or method is a survey method conducted on farmer respondents who are raising local chickens, with the consideration that they have been doing this business for more than 2 years.

Primary data was obtained directly from the respondent by asking questions from the questionnaire that has been provided as well as conducting FGD and observing directly the state of the business from the aspects of production and marketing. Instruments or measuring instruments used in data collection are; Questionnaires, audio-visual recording devices and writing instruments (ATM).

The variables observed in this study were the role of extension agents as motivators, educators, facilitators and communicators. Furthermore, internal and external factors (strengths, weaknesses, opportunities and threats).

Data analysis is used to describe qualitatively the data obtained from the research. Where in this study used the data analysis method "four qualitative stages" (identifying data, reducing data, presenting data and drawing conclusions).

The four-stage qualitative analysis is an effort made in qualitative analysis of the stages of collecting data, organizing data, sorting them into manageable units, synthesizing them, looking for and finding patterns, finding what what matters and what to learn and decide what to tell others [12]. Furthermore, the activities in qualitative data analysis are; data reduction, data display and conclusion drawing. Meanwhile, to determine Petyani's perception of the role of the instructor, calculations were used with the guidance of the data analysis model "Likert scale" [13].

In formulating a complete strategy, there are three stages of strategy formulation (framework), namely stage I is input, stage II is matching, and stage III is a decision.

- 1) Input Stage: the results of the analysis of the company's external and internal environment become the basic input formulated into the EFE matrix and IFE matrix.
- 2) Matching Stage: At this stage, opportunities and threats (external) are matched with strengths and weaknesses (internal) based on the information obtained in the input stage. The analysis tools used at this stage are the Internal-External (IE) matrix and the Strength-Weakness-Opportunity-Threat (SWOT) matrix. All of these tools rely on information gleaned from the input stage to match external opportunities and threats with internal strengths and weaknesses. Internal-External Matrix Analysis (IE) is a combination of the EFE matrix and the IFE matrix which contains nine types of cells that show the combined total weighted values of the EFE and IFE matrices.

Decision Stage: The decision stage is the final stage in strategy formulation. At this stage, the choice of the best alternative strategy and which is a priority for implementation

is made. The analytical tool used is the QSPM (Quantitative Strategic Planning Matrix). QSPM is a tool to indicate which alternative strategy is the best and most feasible to implement. QSPM uses input at the data entry stage and matching at the guidance stage to objectively select among several alternative strategies.

IV. RESULTS AND DISCUSSION

A. General Condition of the Research Area

Minahasa Regency is one of the districts in North Sulawesi Province, Indonesia. Minahasa District has an area of 4,626 km<sup>2</sup>. Consists of 25 districts with the district capital in Tondano. Kakas sub-district is one of the sub-districts in the capital of Minahasa Regency.

One of the potential regional development strategies in Minahasa Regency is the development of local livestock-based agribusiness. Animal husbandry has enormous potential to be a source of economic growth in the agricultural sector. One of the strengths in the livestock sector is local chicken farming [14].

TABLE 1. Farmers' Perceptions of the Role of Extension Officers as Motivators.

No	Indicator	SB	B	RR	TB	STB
1	Assist farmers in obtaining information about production results and how to manage them	8	12	0	0	0
2	Provides guidance on how to manage a good maintenance effort	1	8	3	6	2
3	how to use technology	3	6	4	4	3
4	How to increase the added value of production	4	11	3	2	0
5	Provide comparisons with farmers who have successfully managed a local chicken farm.	8	8	3	1	0
Total		24	45	13	13	5
Average		4,8	9	2,6	2,6	1

Local chicken farming in Minahasa Regency is mostly carried out by rural communities, so it is not only done by farmers, either on a side-by-side basis or for those who are actually engaged in a livelihood. Local chicken farming is an alternative business that does not require a lot of capital and large land. The local chicken livestock are potential germplasm and genetically have a high adaptability to the environment. This indicates that local chickens have a large enough role in the development of livestock in Indonesia, as well as as the economic base for rural farmers for the needs of animal protein for the community [15]. The further state, the problem that occurs in local chicken farms is because the business is managed by breeders who do not have a business orientation.

B. Farmers' Perceptions of the Role of Extension Officers

Farmers' perceptions of the role of extension personnel include the role as a motivator, the role as a communicator, the role as a facilitator and the role as an innovator.

Next, refer to the formula:  $T \times P_n$ . Where; T = Total number of respondents who voted, and  $P_n$  = Choice of Likert score, then;

1. Respondents who answered very useful (5) =  $4.8 \times 5 = 24$

2. Respondents who answered useful (4) =  $9 \times 4 = 36$
  3. Respondents who answered doubtful (3) =  $2.6 \times 3 = 7.8$
  4. Respondents who answered not useful (2) =  $2.6 \times 2 = 5.2$
  5. Respondents who answered very useless (1) =  $1 \times 1 = 1$
- After all the results have been added together, ( $24+ 36+ 7.8+ 5.2+ 1$ ), the total score is 74.

Standard criteria for interpretation of scores based on intervals were;

1. Figures 0% - 19.99% = Very Useless
2. Figures 20% - 39.99% = Not Useful
3. Figures 40% - 59.99% = Doubtful / Neutral
4. Figures 60% - 79.99% = Helpful
5. Figures 80% - 100% = Very Useful

Because the final result is 74, based on the interpretation criteria, the Farmer's Perception of the Role of the Extension Officer as a Motivator falls into the "role" category.

TABLE 2. Farmers' Perceptions of the Role of Extension Officers as Communicators

No	Indicator	SB	B	RR	TB	STB
1	Towards the development of farmer groups	15	5	0	0	0
2	Helping farmers in making decisions	9	6	3	2	0
3	How to solve the problem being faced by farmers	3	10	4	2	1
4	Helping farmers accelerate the flow of information	4	11	5	0	0
5	Assisting farmers in increasing their ability to raise local chickens	9	10	1	0	0
Total		40	42	13	4	1
Average		8	8,4	2,6	0,8	0,2

Next, refer to the formula:  $T \times P_n$ . Where; T = Total number of respondents who voted, and  $P_n$  = Choice of Likert score, then;

1. Respondents who answered very important (5) =  $8 \times 5 = 40$
2. Respondents who answered role (4) =  $8.4 \times 4 = 33.6$
3. Respondents who answered doubtful (3) =  $2.6 \times 3 = 7.8$
4. Respondents who answered no role (2) =  $0.8 \times 2 = 1.6$
5. Respondents who answered absolutely no role (1) =  $0.2 \times 1 = 0.2$

After all the results are added up, ( $40+ 33.6+ 7.8+ 1.6+ 0.2$ ), the total score is 83.

Standard criteria for interpretation of scores based on intervals were;

1. Figures 0% - 19.99% = Very Not a role
2. Figures 20% - 39.99% = Does not play a role
3. Figures 40% - 59.99% = Doubtful / Neutral
4. Figures 60% - 79.99% = play a role
5. Figures 80% - 100% = Very important

Because the final result is 83, based on the interpretation criteria, the Farmer's Perception of the Role of the Extension Officer as a Communicator falls into the category of "very important role".

TABLE 3. Farmers' Perceptions of the Role of Extension Officers as Facilitators

No	Indicator	SB	B	RR	TB	STB
1	Assisting farmers in providing production facilities and equipment for local chicken farming businesses	7	9	2	2	0
2	Give an example to farmers in using agricultural production facilities	4	2	3	7	1
3	Facilitating farmers in accessing information from the government and the private sector	3	10	5	1	3
4	Providing solutions / facilities for problems faced by farmers.	1	11	5	3	0
5	Providing the facilities needed by farmers.	5	11	3	1	0
Total		20	43	18	14	4
Average		4	8,6	3,6	2,8	0,8

Next, refer to the formula:  $T \times P_n$ . Where; T = Total number of respondents who voted, and  $P_n$  = Choice of Likert score, then;

1. Respondents who answered very important (5) =  $4 \times 5 = 20$
2. Respondents who answered role (4) =  $8.6 \times 4 = 34.4$
3. Respondents who answered doubtful (3) =  $3.6 \times 3 = 10.8$
4. Respondents who answered no role (2) =  $2.8 \times 2 = 5.6$
5. Respondents who answered absolutely no role (1) =  $0.8 \times 1 = 0.8$

After all the results are added up, ( $20+ 34.4+ 10.8+ 5.6+ 0.8$ ), the total score is 71.6.

Standard criteria for interpretation of scores based on intervals, were;

1. Figures 0% - 19.99% = Very Not a role
2. Figures 20% - 39.99% = Does not play a role
3. Figures 40% - 59.99% = Doubtful / Neutral
4. Figures 60% - 79.99% = play a role
5. Figures 80% - 100% = Very important

Because the final result is 71.6, based on the interpretation criteria of Farmers' Perceptions of the Role of Extension Officers as Facilitators, it is included in the category of "role".

TABLE 4. Farmers' Perceptions of the Role of Extension Officers as Innovators.

No	Indicator	SB	B	RR	TB	STB
1	Provide a good impact on the development of farmer groups and their businesses	11	9	0	0	0
2	Helping farmers in technology adoption	1	5	4	8	2
3	Provide innovation in terms of local chicken cultivation	3	14	3	0	0
4	Encouraging a change in the mindset of farmers	6	8	4	1	1
5	Delivering information on the development of local chicken farms in Indonesia	5	9	4	1	1
Total		26	45	15	9	4
Average		5,2	9	3	1,8	0,8

Next, refer to the formula:  $T \times P_n$ . Where; T = Total number of respondents who voted, and  $P_n$  = Choice of Likert score, then;

1. Respondents who answered very important (5) =  $5.2 \times 5 = 26$
2. Respondents who answered role (4) =  $9 \times 4 = 36$

3. Respondents who answered in doubt (3) = 3 x 3 = 9
4. Respondents who answered did not play a role (2) = 1.8 x 2 = 3.6
5. Respondents who answered absolutely no role (1) = 0.8 x 1 = 0.8

After all the results are added up, (26+ 36+ 9 + 3.6 + 0.8), the total score is 75.4.

Standard criteria for interpretation of scores based on intervals were;

1. Figures 0% - 19.99% = Very Not a role
2. Figures 20% - 39.99% = Does not play a role
3. Figures 40% - 59.99% = Doubtful / Neutral
4. Figures 60% - 79.99% = play a role
5. Figures 80% - 100% = Very important

Because the final result is 75.4, based on the interpretation criteria, the role of the instructor as an innovator falls into the category of "Role".

**B. External Factor Evaluation (EFE Matrix) and Internal Factor Evaluation (IFE) Matrix**

To get the factors of strategy formulation, the calculation of the EFE (External Factor Evaluation) and IFE (Internal Factor Evaluation) matrix models is used, with the following results;

TABLE 5: EFE Matrix (Opportunity Factor)

Factor Opportunity	Weight (%)	Rating	Score	Priority
1 Food Independence Program	0.082	2	0.16	VII
2 Investment Interest in Animal Husbandry Sub Sector	0.087	3	0.26	V
3 Product Request	0.092	2	0.18	VI
4 Infrastructure Development and Technical Services.	0.087	4	0.35	IV
5 Development of Information Technology (Agricultural Digitalization)	0.103	4	0.41	I
6 Potential HR Farmers in Rural Areas	0.130	3	0.39	II
7 Agroecosystem Support Law.RI.No.16 of 2006 concerning Agricultural, Fisheries and Forestry Extension Systems.	0.092	4	0.37	III
9 Law. RI No. 19 of 2013 concerning the Protection and Empowerment of Farmers	0.103	4	0.41	I
10 Land use	0.087	4	0.35	IV
<b>TOTAL</b>			<b>3.29</b>	

TABLE 6: EFE Matrix (Threat Factor)

Factor Threat	Weight (%)	Rating	Score	Priority
1 Low Competitiveness Products	0.083	3	0.25	VI
2 Limited mastery of marketing technology	0.094	4	0.38	III
3 Decrease in the Labor Force in the Animal Husbandry Sub-Sector	0.067	3	0.20	VIII
4 Transfer of Land Functions Climate Change Affecting	0.111	3	0.33	IV
5 Feed Procurement and Animal Health	0.106	3	0.32	V
6 Dependence on Imported	0.117	4	0.47	I

Production Means					
7	Barriers to the application of intensive business systems	0.106	4	0.42	II
8	Potential of Fishery Products	0.106	2	0.21	VII
9	Bargaining Ability of Farmers	0.100	2	0.10	IX
10	Obstacles in the Reproductive System	0.011	4	0.04	X
<b>TOTAL</b>				<b>2.72</b>	
Average Total Score (Opportunity + Threat)				<b>0.27</b>	

TABLE 7: IFE Matrix (Strength Factor)

Factor Strength	Weight (%)	Rating	Score	Priority	
1 Institutional System	0.11	4	0.44	III	
2 Agricultural Extension	0.09	3	0.27	V	
3 Availability of Business Capital	0.10	3	0.30	IV	
4 Independence of Farmers	0.10	3	0.30	IV	
5 Potential of farmer labor resources	0.10	3	0.30	IV	
6 Potential of Agricultural Products	0.09	3	0.27	V	
7 Reproductive Technology	0.06	2	0.12	VI	
8 Experiences and Social Conditions of Farmers	0.12	4	0.48	II	
9 Development of Processed Industry Technology	0.10	3	0.30	IV	
10 Culinary Business Potential	0.14	4	0.56	I	
<b>Sub Total</b>				<b>3.34</b>	

TABLE 8: IFE Matrix (Weakness Factor)

Factor Weakness	Weight (%)	Rating	Score	Priority	
1 Extensive Business Patterns	0.11	1	0.11	III	
2 Limited Access to Capital	0.09	2	0.18	VII	
3 Limited Land	0.09	1	0.09	I	
4 The Reproductive System Is Still Natural	0.11	1	0.11	III	
5 Not Entrepreneurship Oriented	0.14	1	0.14	V	
6 Feed management system from agricultural products	0.10	2	0.20	VIII	
7 Farmer Group Management System	0.08	2	0.16	VI	
8 Marketing Support Capacity (Animal Market)	0.12	1	0.12	IV	
9 Application of Cultivation Technology and animal feed	0.06	2	0.12	IV	
10 Supporting capacity of poultry slaughterhouses	0.10	1	0.10	II	
<b>Sub Total</b>				<b>1.33</b>	
Average Total Score (Strength + Weakness)				<b>2.34</b>	

**V. CONCLUSION**

Overall, farmers in North Sulawesi responded positively to the digitization program in the development of intensification of local chicken farms towards a strategy of market penetration and expansion. Social engineering, which is the strengthening of the farmer institutional system and the intensity of counseling to farmers, was the determining factor in the strategy of empowering farmers in relation to developing local chicken farms in North Sulawesi.

Simultaneously, the strategy is made to build market driving forces as a form of incentive to implement the concept of social engineering effectively.

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