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Analysis of broiler farming business systems without Antibiotic Growth Promoters (AGP) in traditional farms By Novie Setianto

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partnership companies. Analysis of research data using Causal Loop Diagram (CLD) qualitative modeling. Causal Loop Diagram is a diagram that shows the relationship between variables in a system. CLD consists of a positive sign (+) which indicates a one-way relationship, while a negative sign (-) indicates an inverse relationship [5]. The stages in compiling a qualitative model consist of system observation, problem identification, analysis of structure and relationship patterns, identification of system archetypes in causal loop diagrams [6]. 3. Results and discussion Causal Loop Diagram analysis in this study using the VENSIM PLE software. Based on the modeling analysis, we obtained four reinforcing loops and three balancing loops which are presented in the following figure 1. - Actual Income - + Compensation + costs + B3 Actual Income and Expected Income Gap - + B1 + - + + Allocation for Household Needs + + Production Cost Feed Quality and Motivation + DOC R3 IP R2 + - Capital Probiotik Used R4 Income B2 + Expected Income + + + + Quality of Cage - + Management R1 + + - Quality of Farmers Population + + + + + Education Mitra Standart + - AGP Used Figure 1. Qualitative modeling of broiler farms The use of AGP plays a role in increasing the production of broiler farms. However, discontinuing the use of AGP also has a positive impact, namely increasing partner standards so that maintenance management is getting better. The abolition of AGP led to a partnership company policy that requires farmers who are members of the partnership to own land and cages. Ownership of land and cages increases the ability of farmers in business management so that the results obtained are better. Discontinuation of AGP also increases the use of probiotics and herbs which are known to be better than the use of AGP which causes residues. 3.1. Income and quality of cage Figure 2 consisted of two reinforcing loops, namely R1 and R2. Loop R1 showed that good maintenance management increased the IP, a high IP increased the income of farmers so that capital increased, the capital owned by farmers increased the population, a high population increased maintenance management. This shows that income is a very important element in the rotation system. Conversely, when the income of farmers is not optimal, it will reduce the motivation to raise livestock. The motivation of raising livestock plays a role in increasing the income of farmers [7]. When the motivation to raise livestock is low, it will reduce maintenance management and IPK which will then have an impact on farmers' income. - Actual Income - + Compensation + costs Actual Income and + Production Cost Expected Income Gap + - + + + + - Allocation for Household Needs + Income - + Expected Income Feed Quality and DOC Motivation IP R2 Capital Probiotik Used + + + + + Quality of Cage + R1 - + + Management - Quality of Farmers + Population + + + + + AGP Used Mitra Standart - Education + Figure 2. Income dan Quality of Cage Loop Income is also related to the quality of the cage. Loop R2 shows the rate is positively influenced by income - capital - cage quality - IP - income. Income increases business capital to increase the ability of farmers to improve the quality of the cage. The quality of the cage increases the IP so that the income of the farmer also increases, and the cycle continues. That high cage quality results in lower FCR values and mortality so that the income obtained by farmers is higher [8]. 3.2. Farmers quality Figure 3 consisted of two reinforcing loops, namely loop R3, loop R4 and one balancing loop, loop B1. Loop R3 shows the quality of farmers to improve management, increase IP, increase income, increase motivation to raise livestock. In addition to Loop R3, the quality of broiler farmers also has an impact on Loop R4 turnover. Loop R4 shows that with high farmer quality, it does not require high-quality feed and DOC requirements so that it can save production costs. The more feed and DOC production costs can be reduced, the higher the income of farmers [9]. With lower production costs, it can produce the same production value so that the income of farmers is higher. The high income of farmers increases the motivation to raise livestock, improves the quality of farmers. That improving the quality of farmers is a very important factor because farmers control all activities in the production process, labor or farmers are factors that can increase production risk in broiler farming businesses [10]. - Actual Income - + Compensation + - + + + Costs + B1 Production Cost + - Allocation for Household Needs Income Actual Income and Expected Income Gap + + Feed Quality and Motivation R3 + + R4 - + Expected Income DOC IP + + Capital Probiotik Used - + + Quality of Cage + Management + - Quality of Farmers + Population + + + + Education Mitra Standart + - AGP Used Figure 3. Farmers quality loop Loop B1 illustrates that a decrease in feed quality and DOC increases the cost compensation required for feed quality and DOC. Compensation costs increase the total cost of production so that it has an impact on farmers' income, motivation, and quality of farmers. With lower costs due to decreased feed quality and DOC, farmers need to bear the cost of compensation for decreased feed quality and DOC. The compensation can be in the form of additional heating costs during the broiler rearing period. However, the addition of cost compensation is still more profitable and efficient compared to the use of high-quality feed and DOC. 3.3. Actual income and expected income gap - Actual Income - + Compensation + B3 Actual Income and Costs + Expected Income Gap Production Cost + - Allocation for  $Household \ Needs + - + + + + Income + Expected \ Income + + - Feed \ Quality \ and \ Motivation \ DOC \ IP \ B2 \ Capital$ Probiotik Used + + + - + Quality of Cage + Management - Population Quality of Farmers + + + + + + AGP Used Mitra Standart Education + Figure 4. Business income loop Figure 4 consisted of two balancing loops, namely loop B2 and loop B3. Loop B2 shows that income increases the allocation for household needs, thereby reducing the capital of farmers to improve the quality of the cage, this affects the IP value and income of farmers. Loop B3 shows that there is a gap between actual and expected income. When the income of farmers increases, the needs of the farmer's household will increase so that the expectations of farmers on business results or income increase, when expectations do not match the conditions in reality, a gap occurs, the gap reduces the motivation to raise livestock This gap is a common practice because human needs are increasing in line with the income earned [11]. The higher the income of the farmer, the more the desire to spend the income will increase [12]. 4. Conclusion The use of AGP is not the only factor that influences the success of broiler farming business. Other factors that influence the success of broiler farming include: maintenance management, cage quality and farmer quality. In addition to the regulation and arrangement of the broiler marketing trade system, the strategy for improving the broiler farming business can be carried out through the following efforts:a) Improved maintenance management (production standards based on the quality of sapronak used); b) Improved quality of the cage (upgrade to semi close house); c) Improving the quality of farmers (motivation and education). 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Edu. 28 224-7 [8] Muharlien, Sudjarwo E, Yulianti D L, Hamiyanti A A and Prayogi H S 2020 Jurnal Ilmu-Ilmu Peternakan 30 86-91 [9] Vinanda G, Harianto dan Anggraeni L 2016 Jurnal Manajemen dan Agribisnis 13 50-8 [10] Burhanuddin, Harianto, Nurmalina R and Pambudy R 2013 Media Peternakan 36 230-6 [11] Sekhampu T J and Niyimbanira F 2013 The International Business and Economic Research Journal 12 279 [12] Setianto N A 2016 Jurnal Agripet 16 114 The 1st International Conference on Livestock in Tropical Environment (ICLITE-1) IOP Publishing IOP Conf. Series: Earth and Environmental Science 902 (2021) 012027 doi:10.1088/1755-1315/902/1/012027 The 1st International Conference on Livestock in Tropical Environment (ICLiTE-1) IOP Publishing IOP Conf. Series: Earth and Environmental Science 902 (2021) 012027 doi:10.1088/1755-1315/902/1/012027 The 1st International Conference on Livestock in Tropical Environment (ICLiTE-1) IOP Publishing IOP Conf. 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