Analysis of the Effectiveness of Animal Welfare Implementation in the Sheep Export Process to Malaysia Via Teluk Nibung Port

Adil Kari Salam Harahap[1], Nevy Diana Hanafi[2], Sri Fajar Ayu[3]

[1]Master student, Animal Science, Faculty of Agriculture, University of North Sumatra, Indonesia

[2]Animal Science Department, Faculty of Agriculture, University of North Sumatra, Indonesia

[3]Agribusiness Department, Faculty of Agriculture, University of North Sumatra, Indonesia

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ABSTRACT

In the process of exporting sheep to Malaysia, there are several stages that sheep must go through, starting from the pen to the destination (Malaysia). Sheep always interact and receive treatment from humans during the export process. This has the potential to cause suffering for sheep. Sheep are often only used as objects. These sheep deserve attention in terms of animal welfare. The purpose of this study is to analyze the effectiveness of the application of animal welfare principles carried out by each party involved in sheep exports to Malaysia through Teluk Nibung Port, Tanjungbalai City, North Sumatra Province from 2019-2022. The analysis used in this study is a descriptive analysis using the CIPP model evaluation approach (*context, input, process, product*). Exporters are suspected of several times not paying attention to the application of animal welfare. One example is a sheep that cannot stand and even the sheep's legs protrude from the wall of the transport vehicle during transportation. The application of animal welfare in the sheep export process was implemented effectively with a score of 26.4 or 62.92%.

Keywords: Export, sheep, animal welfare, CIPP, program evaluation

INTRODUCTION

The World Organization for Animal Health (WOAH), formerly known as the Office International des Epizooties (OIE), in Chapter 7.1. on Introduction to the Recommendations for Animal Welfare (2019) states that animal welfare is the physical and mental state of animals related to the conditions of life and death. Animals experience good animal welfare if they are healthy, comfortable, well-nourished, safe, do not suffer from unpleasant conditions such as pain, fear, stress, and are able to express natural behaviors that are important for their physical and mental state. Good animal welfare requires disease prevention and appropriate care, housing, management and nutrition, a vibrant and safe environment, and humane handling and slaughter. Animal welfare refers to the condition of animals, the treatment they receive, which includes veterinary care, husbandry, and humane actions or treatment (WOAH, 2019).

Emma Dunston-Clarke et al. (2020) stated that the demand for animal welfare standards across all livestock industries is increasing. An analysis of welfare implementation in livestock exports is necessary to ensure quality meat products. Ivanov (2020) stated that transportation is one of the aspects of animal handling before slaughter. During the journey, livestock experience fear, hunger, thirst, physical injury, and exhaustion, which ultimately negatively impact meat quality. Exported meat quality will be poor if livestock experience stress before slaughter.

The purpose of this study is to analyze the effectiveness of the application of animal welfare principles carried out by each party involved in the export of livestock, especially sheep, to Malaysia through Teluk Nibung Port, Tanjungbalai City, North Sumatra Province from 2019 to 2022. This study will provide information, considerations, and input for relevant government agencies, namely the Indonesian Quarantine Agency, as well as private parties who have a role in sheep exports, especially exporters and sea transportation entrepreneurs.

This research will be useful in making decisions or policies related to the application of animal welfare principles in the process of sheep exports to Malaysia.

MATERIALS AND METHODS

The analysis used in this study is a descriptive analysis using the CIPP model evaluation approach. The CIPP model evaluation was developed by Stufflebeam and Shinkfield in 1985 as a result of efforts in evaluating the ESEA (the Elementary and Secondary Education Act). The important purpose of this CIPP model evaluation is to improve. Stufflebeam himself stated that "the CIPP approach is based on the view that the most important purpose of evaluation is not to prove but to improve" which means that "the CIPP approach is based on the view that the most important purpose of evaluation is not to prove but to improve". The CIPP evaluation model can be applied in various fields, for example, such as education, management, companies, and in various fields/levels, whether projects, programs, or institutions (Stufflebeam, 2003, Darodjat and Wahyudhiana, 2015, and Rama et al., 2023).

The CIPP model evaluation was conducted by asking respondents questions related to the application of animal welfare in the export process. Each model has assessment indicators followed by criteria based on the theory developed.

Table of indicators for assessing the implementation of animal welfare based on CIPP aspects

No.	Evaluation	Indicator
1	*Context*	- Knowledge, understanding and benefits of animal welfare - Basic knowledge of animal welfare law - Approval to implement animal welfare
2	*Input*	- HR - SOUP - Group management
3	*Process*	- The 5 freedom principles of animal welfare
4	*Product*	- Benefits of implementing animal welfare for sheep - Benefits of implementing animal welfare for humans

Source: Processed based on the theory and principles of animal welfare implementation (Law No. 41 of 2014 and WOAH 2019)

Animal welfare application assessment score table using the CIPP method evaluation adjusted to the evaluation theory according to Stufflebeam (2003)

No.	CIPP Model	Parameter	Mark	Number of Ratings
1	Context	5	0-1	0-5
2	Input	4	0-1	0-4
3	Process	28	0-1	0-28
4	Product	5	0-1	0-5
Total		42		0-42

The results of the total scores from each assessment of the application of animal welfare principles in the sheep export process can be seen in table 7 below.

The research score is determined as follows:

- A score of 0 (zero) is given if the answer is “NO”
- Score 1 (one) is given if the answer is “YES”

The assessment score can determine the success of animal welfare implementation in sheep exports to Malaysia. The implementation score ranges from 0 to 42. The class length can be calculated by dividing the range by the number of classes. Range is the distance or difference between the largest and smallest data points (Stufflebeam, 2003). Performance assessments can be categorized into two categories: effective and ineffective. Description:

- Score > 21.1 = effective

- Score ≤ 21 = not effective

Research Respondents

The respondents who became the object of this study were every person/party who plays a role in the process of exporting sheep from North Sumatra to Malaysia. There are three groups of respondents classified based on their respective professions and roles that will be the object of this study. The first category of respondents are sheep export companies. These export companies manage and are responsible for operations in the IKH pens and the drivers and helpers who carry land transportation. Export companies play a role in process 1 (sheep are in the IKH pen), process 2 (sheep are loaded from the pen into land transportation), and process 3 (sheep travel overland to the port of departure). There are four sheep export companies in North Sumatra that are currently registered and the respondents in this study are three exporters.

The second category of respondents is Animal Quarantine Officers at the North Sumatra Animal, Fish, and Plant Quarantine Center, Tanjungbalai Asahan Service Unit. Animal Quarantine Officers play a role in process 1 (sheep are in the IKH pen) and process 4 (sheep are loaded from the land transportation vehicle into the sea transportation vehicle). There are 15 Animal Quarantine Officers who will be respondents consisting of 5 quarantine veterinarians and 15 animal quarantine paramedics. Respondents from the Animal Quarantine Officer category were selected as 2 (two) people, namely 1 (one) quarantine veterinarian and 1 (one) animal quarantine paramedic.

The third category of respondents is sea freight companies. Sea freight companies are directly responsible for the operations of stevedoring and unloading personnel (TKBM) at ports of departure and the captain and crew (ABK) on board sea freight. These shipping companies play a role in process 4 (sheep being loaded onto sea freight) and process 5 (sheep traveling by sea). Two sea freight companies operate in this sheep export process and were respondents in this study.

The data used in this study is primary data, obtained directly in the field from respondents through interviews and observations. Data analysis was conducted using effectiveness analysis using the CIPP evaluation model. This analysis aims to determine the effectiveness of the implementation of animal welfare principles by all parties involved in each sheep export process to Malaysia. This analysis was conducted using a definitional approach based on the five freedoms principle.

RESULTS AND DISCUSSION

A Brief Overview of Sheep Exports

Teluk Nibung Port, also known as Tanjung Balai Asahan Port, is one of the busiest transportation hubs in North Sumatra. Tanjung Balai Port has existed since the Asahan Sultanate in 1930. Located at the mouth of the Asahan River, Teluk Nibung Port has been a busy trading hub for a long time. Tanjung Balai Port's primary activity today

is as a passenger and cargo terminal. Ships also operate from Tanjung Balai to Malaysia. It is from Teluk Nibung Port that sheep are exported from North Sumatra to Malaysia (Idris, 2023).

Before arriving in Malaysia, each sheep must go through five stages. The first stage involves the sheep being placed in the IKH pen for a physical inspection by quarantine officials. The second stage involves the sheep being loaded onto land transport. The third stage involves the sheep traveling overland for 1-3 hours, depending on the distance from IKH to Teluk Nibung Port. The fourth stage involves the sheep being loaded onto a ship. The fifth stage involves the sheep traveling by sea for 12 hours. Human treatment is a constant feature of these export processes. The presence of human treatment in these five stages also constitutes a violation of animal welfare principles.

Results of the Evaluation Model for the Implementation of Animal Welfare in the Sheep Export Process Using the CIPP Model

Hempstead et al. (2019) stated that specific indicators of sheep welfare must be valid, reliable, and feasible. Animal-based indicators such as body condition, hair/fleece condition, skin lesions, claw overgrowth, lameness, and human-animal relationships can provide a more accurate welfare assessment than management- and resource-based indicators. Emma Dunston-Clarke et al. (2020) stated that determining animal welfare status during large livestock shipments is complex. This requires multiple actions that focus on the environment and available resources, as well as how the animals respond. The animal welfare assessment conducted in this study not only assesses the sheep export process but also assesses the entire process. Animal welfare assessment is conducted by examining the backgrounds of the people involved in the process and the results achieved through animal welfare implementation.

The assessment of animal welfare implementation conducted in this study was conducted using the CIPP evaluation model. This was done to comprehensively understand the implementation of animal welfare, including the background of each stakeholder, efforts to increase capacity in understanding animal welfare, the implementation process, and the results obtained from implementing welfare implementation in sheep exports.

In the CIPP model, evaluation is divided into 4 (four) dimensions, namely context evaluation (planning), input evaluation (managing decisions to achieve goals), process evaluation (assisting decisions to the extent to which programs are implemented), and product evaluation (reviewing decisions). The four evaluation dimensions consist of indicators in each dimension of the CIPP model so that they can describe the implementation of animal welfare in the sheep export process. The four dimensions of the CIPP evaluation are visualized into aspects of assessing the implementation of animal welfare in the sheep export process (Stufflebeam, 2003, Darodjat and Wahyudhiana, 2015, and Rama et al., 2023).

Overall, it can be seen that the implementation of animal welfare in the sheep export process from Teluk Nibung Port to Malaysia in 2019 – 2022 received a score of 26.4 with a percentage of 62.8%. Based on the assessment indicators for the implementation of animal welfare in the sheep export process to Malaysia in 2019-2022 via Teluk Nibung Port, the assessment categories per dimension according to the CIPP evaluation model can be identified.

Table of Assessment of the implementation of animal welfare implementation in the sheep export process to Malaysia via Teluk Nibung Port in 2019-2022 based on CIPP aspects

No.	Dimensions / Aspects	Score obtained	Achievement (%)	Assessment Categories
1	*Context*	4.3	85.71	Effective
2	*Input*	2.0	50.00	Ineffective
3	*Process*	15.4	55.10	Effective

4	*Product*	4.7	94.29	Effective
Total		**26.4**	**62.92**	**Effective**

Source: Primary Data (processed), 2024

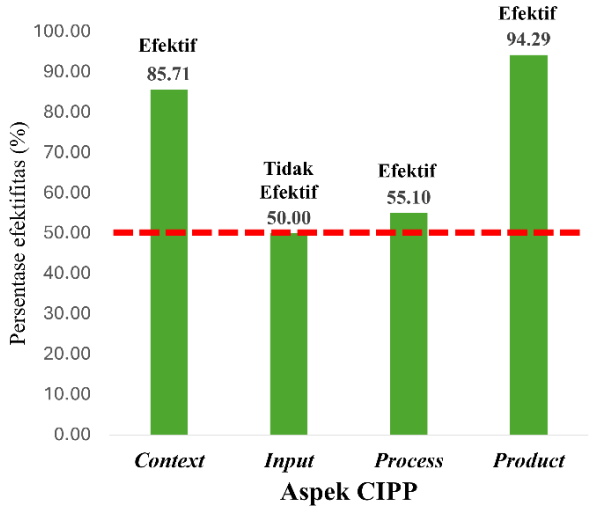

Figure Percentage gain for each aspect of CIPP

Source: Primary Data (processed), 2024

The evaluation of animal welfare implementation in the sheep export process from Teluk Nibung Port in 2019-2022 yielded different results for each dimension or aspect studied. The evaluation of animal welfare implementation in the context, input, process, and product aspects obtained scores of 4.3 (85.71%), 2.0 (50.00%), 15.4 (55.10%), and 4.7 (94.29%), respectively. The evaluation of animal welfare implementation in the context, process, and product aspects was categorized as effective because the percentage results for these three aspects were above 50%. The evaluation of animal welfare implementation in the input aspect was categorized as ineffective because the percentage results for this aspect were below or equal to 50%.

Indicators in the context aspect are knowledge, understanding, and benefits of animal welfare, knowledge of the legal basis for implementing animal welfare, and agreement to implement animal welfare. A total of 85.71% of respondents know and understand animal welfare and its benefits. A total of 71.42% of respondents understand the legal basis for implementing animal welfare. A total of 100% of respondents apply animal welfare principles. Thus, the evaluation of the implementation of animal welfare in the context aspect obtained a score of 4.3 (range 0-5) or 85.71%. The evaluation of the implementation of animal welfare in this input aspect is categorized as effective because the percentage results of this aspect are above 50%.

Respondents had good knowledge and understanding of animal welfare. They also expressed a willingness to improve and update their knowledge of animal welfare. According to Muhammad (2022), collaboration between stakeholders and sharing methods to facilitate positive animal welfare experiences is crucial for understanding practices, interventions, indicators (measures), and situations considered relevant to improving the quality of life of sheep. Implementing animal welfare will also contribute to social welfare for the community.

Indicators for the input aspect are human resources (HR), standard operating procedures (SOPs), and group management. A total of 35.71% of respondents have received socialization regarding the implementation of animal welfare in the sheep export process from related parties. A total of 42.85% of respondents already have a written SOP on the implementation of animal welfare in the sheep export process. A total of 85.71% of respondents have discussed with other related parties about the implementation of animal welfare in the sheep export process. Therefore, the evaluation of the implementation of animal welfare in the input aspect obtained a

score of 2.0 (range 0-4) or 50.00%. The evaluation of the implementation of animal welfare in this input aspect is categorized as ineffective because the percentage result for this aspect is below or equal to 50%.

The percentage value of the input dimension for evaluating animal welfare implementation can be improved in several ways. These include implementing structured and intensive outreach regarding the application of animal welfare in the sheep export process and developing a welfare-based export management guidebook. Emma Dunston-Clarke et al. (2020) stated that the list of appropriate measures for exported sheep is determined by reviewing international animal welfare assessment protocols, consulting with export standards makers, and using animal health guidebooks used by veterinarians.

The process indicator is the application of the five animal welfare principles in the sheep export process. 55.10% of respondents applied the five animal welfare principles in the sheep export process. Therefore, the evaluation of animal welfare implementation in the process aspect obtained a score of 15.42 (range 0-28) or 55.10%. The evaluation of animal welfare implementation in this process aspect is categorized as effective because the percentage result for this aspect is above 50%.

However, the process dimension of this animal welfare evaluation shows that the percentage is approaching 50%. This indicates that animal welfare implementation in the sheep export process is still largely unrealistic. Nielsen et al. (2022) stated that the main violations occur in several implementation processes, including improper handling, inadequate facilities, air temperature control, and odor. This can have an impact on exported sheep, including stress. This serves as an indication for relevant parties to improve the export process. Ultimately, the percentage in this process dimension (55.10%) will increase.

The indicators for the product aspect are the benefits of implementing animal welfare for sheep and humans. 92.86% of respondents agreed that implementing animal welfare can reduce mortality rates and cruelty to sheep during the export process. 95.24% of respondents agreed that implementing animal welfare can facilitate sheep handling during the sheep export process and increase economic profits. Therefore, the evaluation of animal welfare implementation in the product aspect obtained a score of 4.7 (range 0-5) or 94.29%. The evaluation of animal welfare implementation in this product aspect is categorized as effective because the percentage result for this aspect is above 50%.

The parameter examined in the product dimension is the sheep mortality rate. This study did not conduct physiological examinations on the exported sheep. The exported sheep were not immediately slaughtered in Malaysia but were kept for some time until their body weight increased and their condition stabilized. This was done to prevent the slaughter of sheep experiencing stress. Ivanov (2020) stated that short-distance sheep transportation in hot weather can reduce body weight, physiological responses, and meat quality. The hormones cortisol, epinephrine, and norepinephrine in the transported sheep increased, indicating that the sheep experienced stress during the journey.

The implementation of animal welfare in the sheep export process needs to be further improved. Several approaches can be taken to improve animal welfare. Research suggests that improving animal welfare can be achieved by providing more intensive and structured outreach to all stakeholders in the sheep export process and providing adequate facilities for the process. Furthermore, improving animal welfare can also be achieved by improving the welfare of those working in the sheep export process. Chen and Weary (2022) state that ensuring worker welfare is crucial for improving animal welfare.

CONCLUSION AND SUGGESTIONS

Conclusion

The implementation of animal welfare in the sheep export process from Teluk Nibung Port to Malaysia in 2019 - 2022 using the CIPP analysis method was carried out effectively by obtaining a score of 26.4 with a percentage of 62.92%.

Suggestion

One of the essential requirements for sheep movement is easily accessible feed and water troughs. Furthermore, the troughs should always be filled with water (*ad libitum*). Recommendations for further research include using other methods that might yield more varied results. Research related to animal health applications can also be conducted by analyzing the physical symptoms and physiological status of the animals. This greatly facilitates the development of further research related to animal welfare.

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