

ASSESSMENT OF ANIMAL WELFARE MANAGEMENT PRACTICES AMONG LIVESTOCK FARMERS

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Abstract

The present study aimed to examine the extent of adoption of animal welfare practices among livestock farmers. For this purpose, six blocks from Tirunelveli district of Tamil Nadu were selected randomly. From each block, one focus group of livestock farmers was formed, and 10 farmers were selected from each focus group, resulting in a total sample of 60 respondents, comprising 30 dairy farmers and 30 sheep and goat farmers. The findings revealed that the overall Animal Welfare Index (AWI) of the livestock farmers was 65.09. Among the different animal welfare standards, appropriate animal behaviour recorded the highest Animal Welfare Index (79.72), followed by good housing (77.50), good feeding (59.83), and good health (49.16). Multiple linear regression analysis revealed that education, experience in livestock farming, contact with extension agencies and participation in training programmes had a positive and highly significant influence ($p < 0.01$), while mass media exposure had a positive and significant influence ($p < 0.05$), on the adoption of animal welfare practices among livestock farmers. The findings highlight the need for focused training programmes and mass awareness campaigns on existing animal welfare standards to enhance animal wellbeing and promote sustainable livestock farming practices among farming communities.

Keywords: Animal welfare assessment, practices, livestock farmers, welfare index.

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INTRODUCTION

Animal welfare has emerged as a critical component of sustainable livestock production due to its significant

implications for animal health, productivity, product quality, food safety, and societal acceptance of animal production systems. Growing public concern regarding the ethical treatment of animals, coupled with increasing awareness of the interrelationship between animal welfare, human wellbeing, and environmental sustainability has intensified the focus on welfare standards in livestock farming (Fraser, 2008; Broom,

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2011). Ensuring good animal welfare not only improves the quality of life of farm animals but also contributes to enhanced productivity, disease resistance, and economic returns for livestock farmers.

The World Organisation for Animal Health (WOAH) defines animal welfare as “the physical and mental state of an animal in relation to the conditions in which it lives and dies” (WOAH, 2023). Animal welfare is not an absolute condition but exists along a continuum ranging from poor to excellent welfare status. Accordingly, welfare assessment involves systematic evaluation of an animal’s physical health, behavioural expression, emotional state, and ability to cope with its environment. Contemporary welfare science recognizes that animals are sentient beings capable of experiencing positive and negative emotions, making welfare assessment an essential component of responsible livestock management (Mellor, 2016).

Historically, animal welfare assessment has been guided by the concept of the Five Freedoms, which emphasize freedom from hunger and thirst, discomfort, pain, injury and disease, fear and distress, and the freedom to express normal behaviour (FAWC, 2009). More recently, the Five Domains Model has expanded this framework by integrating nutrition, environment, health, behaviour, and mental state to provide a comprehensive evaluation of animal welfare (Mellor *et al.*, 2020). These frameworks have become widely accepted tools for assessing welfare conditions across diverse livestock production systems.

Animal welfare is closely linked to animal husbandry and management practices, requiring the active participation of livestock owners and caretakers. From a production perspective, welfare significantly influences animal performance because productivity depends on an animal’s ability to successfully adapt to its environment (Carenzi and Verga, 2007). Appropriate housing, nutrition, health care, handling practices, and environmental management are therefore fundamental determinants of welfare outcomes. Studies have demonstrated that improved welfare practices are associated with enhanced animal health, reduced stress, better reproductive performance, increased productivity, and improved product quality (Hemsworth and Coleman, 2011; Lawrence *et al.*, 2022).

In developing countries such as India, livestock farming is an important source of livelihood, nutritional security, and rural employment. However, variations in farmers’ awareness, resource availability, management practices, and access to veterinary and extension services often influence the welfare status of farm animals. Understanding existing welfare practices at the farm level is therefore essential for identifying gaps and designing appropriate interventions to improve animal welfare and productivity.

Against this backdrop, the present study aims to assess the extent of compliance with recognized animal welfare standards, identify the factors influencing the adoption of animal welfare management

practices, and highlight areas requiring improvement. The findings are expected to provide valuable insights for policymakers, veterinarians, extension professionals, and livestock farmers in formulating evidence-based strategies to promote animal welfare, enhance livestock productivity, and ensure the sustainability of livestock production systems.

MATERIALS AND METHODS

An exploratory research design (Kothari and Gaurav, 2019) was adopted to study the animal welfare practices followed by livestock farmers in Tirunelveli district of Tamil Nadu. The district was purposively selected for the study. Out of the nine blocks in the district, six blocks were selected through random sampling. One focus group of livestock farmers was constituted from each selected block, resulting in six focus groups. Of these, three groups comprised dairy farmers, while the remaining three groups comprised sheep and goat farmers. Farmers actively involved in livestock farming for a minimum period of five years were considered for inclusion in the study. Ten farmers were selected from each focus group, yielding a total sample size of 60 respondents. Data related to animal welfare practices were collected using a well-structured and pre-tested interview schedule based on established animal welfare standards. The data thus collected were compiled, tabulated, and analyzed in line with the objectives of the study.

RESULTS AND DISCUSSION

As shown in Table 1, the study revealed that 45 per cent of the respondents belonged to the 41-60 years age group, while 38.33 per cent were above 60 years of age. This distribution may be attributed to the inclusion criterion that respondents should have at least five years of experience in livestock farming. Regarding educational status, 50 per cent of the respondents had studied up to middle school level, whereas 38.34 per cent had completed higher secondary education. The findings further indicated that 65 per cent of the respondents were small-scale livestock farmers possessing up to three cattle units. With respect to capacity building activities, only 38.33 per cent of the respondents had participated in livestock farming related training programmes organized by various institutions. Furthermore, a majority of the respondents (66.00%) reported infrequent contact with extension agencies, indicating limited access to extension and advisory services.

A perusal of Table 2 reveals that a majority (56.67%) of the respondents exhibited a medium level of adoption of animal welfare standards, followed by a low level (26.67%) and a high level (16.66%). The findings indicate that most livestock farmers were practicing animal welfare standards to a moderate extent. This result is in agreement with the findings of Khyalia *et al.* (2018), who reported that the majority of respondents possessed a moderately favourable attitude towards animal welfare.

The overall Animal Welfare Index (AWI) of the animal welfare standards followed by the livestock farmers was 65.09. Among the various animal welfare standards assessed, appropriate animal behaviour recorded the highest AWI (79.72), followed by good housing (77.50), good feeding (59.83), and good health (49.16). Under the good feeding standard, the provision of adequate drinking water (70.83) and feeding of green fodder in recommended quantities (70.00) received comparatively higher AWI scores. However, it was observed that a majority of the livestock farmers only partially met the recommended levels of concentrate and dry fodder feeding. With respect to the good housing standard, the highest AWI scores (91.67) were recorded for the provision of adequate floor space per animal and proper ventilation (Table 3). These findings suggest that while livestock farmers generally maintained satisfactory housing conditions, greater emphasis is required to improve feeding practices and animal health management.

$$\text{Overall Animal welfare index} = \frac{\text{Respondents total score}}{\text{Total possible score}} \times 100$$

$$\begin{aligned} \text{Overall Animal welfare index} &= \frac{1171.65}{1800} \times 100 \\ &= 65.09 \end{aligned}$$

The Animal Welfare Index (AWI) for the good health standard revealed that the absence of wounds on animals recorded the highest score (83.33), followed by proper treatment of diseased animals (64.17). However, a majority of the livestock

farmers did not adequately adopt important health management practices such as regular deworming (28.33), vaccination (38.33), and isolation of sick animals (31.66). These findings are in agreement with those of Sonu *et al.* (2022), who reported that cattle owners were more aware of the need to keep animals free from pain and discomfort but exhibited lower awareness regarding regular deworming and vaccination practices. With respect to the appropriate animal behaviour standard, a good human animal relationship recorded the highest AWI score (83.33), followed by affiliative contact between animals (78.33) and positive animal body language (77.50). Similarly, Kamboj *et al.* (2022) observed that small and medium scale farms, which were predominantly family owned, tended to provide better care and management through positive human animal interactions. The findings suggest that livestock farmers generally maintained favourable behavioural welfare practices, although greater attention is needed to improve preventive health care measures.

Multiple linear regression analysis revealed that education, experience in livestock farming, contact with extension agencies and participation in training programmes had a positive and highly significant influence ($p < 0.01$) on the adoption of animal welfare standards by livestock farmers (Table 1). Mass media exposure also exhibited a positive and significant influence ($p < 0.05$) on the adoption of animal welfare practices. These findings indicate that access to information, knowledge, and extension services plays a crucial role in enhancing animal welfare

practices among livestock farmers. The findings are consistent with those of Alemayehu *et al.* (2022), who reported a positive relationship between farmers' knowledge and their attitudes towards animal welfare practices. This suggests that favourable attitudes and improved animal welfare practices can be fostered through appropriate training and awareness programmes that enhance farmers' understanding of the biological, physical, and behavioural needs of their animals.

CONCLUSION

The findings of the present study revealed that the overall adoption of animal welfare standards among livestock farmers was at a moderate level. The adoption of animal welfare practices was significantly influenced by factors such as education, experience in livestock farming, contact with extension agencies, participation in training programmes and mass media exposure. Therefore, the study recommends

the implementation of targeted animal welfare programmes incorporating focused training and mass awareness campaigns on key animal welfare standards, including good housing, feeding, health care and humane handling practices. Such initiatives would help enhance farmers' awareness and sensitize them to the benefits of improving animal welfare, thereby contributing to better animal wellbeing and sustainable livestock production.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

Table.1. Distribution of respondents according to their socio-economic factors influencing the status of animal welfare among livestock farmers

Variables	Parameters	Frequency	Percentage	'b'
Age	< 25	4	6.67	-0.024
	26 - 40	6	10.00	
	41 - 60	27	45.00	
	> 60	23	38.33	
Gender	Male	27	45.00	-0.016
	Female	33	55.00	
Education	Primary	16	26.67	0.299**
	Middle School	14	23.33	
	Secondary School	10	16.67	
	Higher Secondary	13	21.67	
	Graduate	7	11.66	

Livestock farming experience	5-10 years	24	40.00	0.219**
	11-15 years	16	26.67	
	>16 years	20	33.33	
Livestock possession	<3 Cattle Units	39	65.00	0.017
	4 - 6 Cattle Units	12	20.00	
	>7 Cattle Units	9	15.00	
Family income Per annum (Rs.)	Low (< 50,000)	20	33.33	0.014
	Per annum (Rs.)	34	56.67	
	High (>1,00,000)	6	10.00	
Land holding	Landless	19	31.66	0.009
	Land holding	22	36.67	
	Small (2.6-5 acres)	13	21.67	
	Large (> 5 acres)	6	10.00	
Training	Participated	23	38.33	0.157**
	Training	37	61.67	
Contact with extension agency	Frequently	20	33.33	0.191**
	Contact with extension agency	25	41.67	
	Never	15	25.00	
Mass media exposure	Frequently	25	41.67	0.127*
	Mass media exposure	17	28.33	
		18	30.00	
Social participation	Frequently	19	31.67	-0.209
	Social participation	26	43.33	
	Never	15	25.00	

** Indicates level of significance at 1%, * Indicates level of significance at 5%

Table.2. Distribution of respondents according to the level of animal welfare standards followed by the livestock farmers

Sl. No.	Category	Frequency	Percentage
1	Low	16	26.67
2	Medium	34	56.67
3	High	10	16.66

Table.3. Practice wise distribution of respondents according to animal welfare standards followed by the livestock farmers

Sl. No	Parameters	Yes	Partly	No	Animal welfare index
A.	Good Feeding				
1.	Quantity of green fodder offered	24 (40.00)	36 (60.00)	-	70.00
2.	Quantity of dry fodder offered	10 (16.67)	30 (50.00)	20 (33.33)	41.67
3.	Quantity of concentrate feed offered	20 (33.33)	26 (43.33)	14 (23.33)	55.00
4.	Quantity of water offered	25 (41.67)	35 (58.33)	-	70.83
5.	Frequency of feeding and watering	14 (23.33)	46 (76.67)	-	61.67
Mean animal welfare index					59.83
B.	Good Housing				
1.	Maintaining the cleanliness of animal shed/houses	22 (36.67)	33 (55.00)	5 (8.33)	64.16
2.	Maintaining the cleanliness of waterers	41 (68.33)	14 (23.33)	5 (8.33)	80.00
3.	Provision of floor space / animal	50 (83.33)	10 (16.67)	-	91.67
4.	Provision of ventilation	50 (83.33)	10 (16.67)	-	91.67
5.	Artificial lighting facilities	25 (41.67)	22 (36.67)	13 (21.66)	60.00
Mean animal welfare index					77.50
C.	Good Health				
1.	Proper deworming of animals	6 (10.00)	22 (36.67)	32 (53.33)	28.33
2.	Vaccination of animals against contagious diseases	17 (28.33)	12 (20.00)	31 (51.67)	38.33
3.	Absence of wound on animals	40 (66.67)	20(33.33)	-	83.33
4.	Proper treatment of diseased animals	22 (36.67)	33 (55.00)	5 (8.33)	64.17
5.	Isolation of sick animals	10 (16.67)	18 (30.00)	32 (53.33)	31.66
Mean animal welfare index					49.16
D.	Appropriate Animal Behavior				
1.	Affiliative contact between animals	34 (56.67)	26 (43.33)	-	78.33
2.	Good human animal relationship	40 (66.67)	20 (33.33)	-	83.33
3.	Positive animal body language	33 (55.00)	27 (45.00)	-	77.50
Mean animal welfare index					79.72

Figures in the parenthesis indicate percentage

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