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Dr. Amal Sebastian
MVSc Scholar, Department of Livestock Production Management, College of Veterinary and Animal Sciences, Pookode, Wayanad, Kerala, India

Bimal P Bashir
Assistant Professor, Department of Animal Husbandry Extension, College of Veterinary and Animal Sciences Mannuthy, P.O., Thrissur, Kerala, India

V Vishnu Savanth
Assistant Professor
Instructional Livestock Farm Complex, College of Veterinary and Animal Sciences, Pookode, Wayanad, Kerala, India

Sabin George
Department of Livestock Production Management, College of Veterinary and Animal Sciences, Pookode, Wayanad, Kerala, India

Roshin Anie Jose
Department of Livestock Production Management, College of Veterinary and Animal Sciences, Pookode, Wayanad, Kerala, India

Corresponding Author:
Dr. Amal Sebastian
MVSc Scholar, Department of Livestock Production Management, College of Veterinary and Animal Sciences, Pookode, Wayanad, Kerala, India

Perception of farmers towards human-wildlife conflict in selected areas of wayanad district: An analysis based on an eleven-item perception test

Amal Sebastian, Bimal P Bashir, V Vishnu Savanth, Sabin George and Roshin Anie Jose

Abstract
Human Wildlife Conflict (HWC) is a growing challenge for rural communities living in close proximity to forests and protected areas. The present study was undertaken to assess the perception of farmers towards HWC using a survey-based perception test. A total of 120 respondents were selected, and their opinions were recorded on 11 structured statements, consisting of both positive and negative items. Each respondent's score was determined by awarding points for consistent responses-agreement with positive statements and disagreement with negative statements, and vice versa. The responses were summarized in frequencies and percentages for each statement, followed by categorization of individuals into three perception groups: High (66.66-100), Medium (33.33-66.66), and Low (0-33.33). The results revealed that 30% of respondents had a high level of perception, while 70% fell under the medium category, with none in the low category. The findings highlight that although farmers are aware of the causes and impacts of HWC, most remain in a moderate awareness category, suggesting the need for capacity building and community-based educational interventions.

Keywords: Farmers, categorization, conservation awareness, human-wildlife conflict, perception test

Introduction

Human Wildlife Conflict (HWC) is increasingly recognized as one of the most pressing issues in agriculture and conservation, particularly for communities located in forest fringe and buffer zones. Farmers frequently face challenges such as crop raiding, damage to property, livestock predation, and, in extreme cases, human injury or death (Dickman, 2010) [1]. These conflicts not only lead to direct economic loss but also cause psychological stress and reduce tolerance levels toward wildlife (Ogra, 2008) [5]. Local perceptions of HWC are vital because they influence community willingness to coexist with wildlife and support for mitigation strategies. Previous research has shown that perceptions are shaped by both direct impacts (crop or livestock damage) and broader ecological drivers such as deforestation, habitat degradation, and food scarcity within forests (McGuinness and Taylor, 2014; Quy *et al*., 2014) [4, 6].

Senthilkumar *et al*. (2017) [8] developed a standardized perception test to assess how farmers view human-wildlife interactions. Their methodology provided a reliable tool to categorize respondents into different orientations towards the conflict. Building on this framework, the present study applied a modified version of the perception test with 11 selected statements to examine how farmers in the study area perceive various aspects of HWC.

The objectives of this study were:

- To investigate farmers' agreement or disagreement with statements related to HWC.
- To score and categorize their perceptions into high, medium, and low levels.
- To interpret the implications of these perceptions for conflict mitigation and conservation strategies.

Material and Methods

Study Area and Respondents: The study was conducted among 120 respondents residing in human-wildlife conflict-prone villages.

The respondents primarily consisted of farming households who had direct exposure to wildlife intrusion and crop/asset loss.

Research Tool

An 11-item perception test was prepared based on the tool developed by Senthilkumar *et al*. (2017) [8]. The items were carefully selected to include both positive and negative statements under dimensions such as economic impact, ecological awareness, responsibility in reporting, and conservation orientation. All statements were dichotomous, requiring farmers to respond with "Agree" or "Disagree".

Scoring Procedure

Responses were evaluated using a binary scoring system:

- For positive statements, "Agree" was scored as correct (1), and "Disagree" as incorrect (0).
- For negative statements, "Disagree" was scored as correct (1), and "Agree" as incorrect (0).

Thus, each respondent obtained a cumulative score ranging from 0 to 11.

Categorization of Perception Levels

- To interpret the scores, respondents were classified into three categories based on percentage scores:
- High perception: 66.66-100% (8-11 correct responses)
- Medium perception: 33.33-66.66% (4-7 correct responses)
- Low perception: 0-33.33% (0-3 correct responses)

Data Analysis

Responses were entered into spreadsheets, and frequencies and percentages were computed for each statement. Cumulative scores were used for categorization. The results were interpreted in light of existing literature and compared with earlier findings on farmer perceptions of HWC (Senthilkumar *et al*., 2017; McGuinness and Taylor, 2014) [8, 4].

Results

Perception of farmers on human-wildlife conflict (statement-wise analysis)

Table 1 presents the distribution of responses to the 11 perception statements relating to human-wildlife conflict (HWC). The findings reveal that farmers expressed a very critical perception about certain aspects of HWC, while showing strong ecocentric values in others.

- A striking 100% of respondents disagreed with the statement that *"HWC results in less damage to crops,"* thereby acknowledging the severe crop losses experienced due to wildlife. Similarly, 98.33% disagreed that *"large scale deforestation does not lead to HWC,"* recognizing deforestation as an important driver of conflict. Nearly all (99.16%) also emphasized that scarcity of forest-based food resources forces wildlife to remain closer to human settlements, worsening the conflict scenario.
- Concerning economic aspects, 40.84% of farmers acknowledged that sudden attacks by wild animals on properties such as ration shops and stored crops result in severe losses, while a majority (59.16%) considered such losses unavoidable. This mixed response may reflect differences in personal experiences with property damage.
- Regarding villagers' efforts after conflict, 51.67% admitted that forest officials were pressured for information yet not consistently informed about conflict incidents. Interestingly, 100% of respondents supported self-efforts in protecting themselves from HWC rather than depending fully on official mechanisms. This suggests that community-driven management and direct action are perceived as critical.
- The dimension of ecocentrism was strongly expressed. All respondents (100%) agreed that they cannot enjoy nature's settings without protection from conflict that time in nature is essential for happiness, and that ecological welfare contributes to human welfare. This indicates a strong underlying respect for the intrinsic value of nature.
- In terms of conservation goals, the majority (85%) believed that maintaining conservation efforts is essential for sustaining a high standard of living. Moreover, nearly 91% disagreed with the notion that environmental concerns are excessive, reflecting high awareness levels towards environmental protection.

Categorization of overall perceptions

Respondents' total scores, based on positive responses to positive statements and negative responses to negative statements, were classified into high, medium, and low perception levels (Table 2). Results showed that:

- 30% of respondents were grouped under the high perception category,
- 70% fell into the medium perception category, and
- None were categorized as low perception.

This indicates that while farmers were generally aware of the causes and consequences of HWC, most of them still fall in the mid-level awareness range when evaluated comprehensively.

Discussion and Conclusion

The findings highlight several key insights

- **Awareness of Conflict Drivers:** Farmers clearly recognized the role of deforestation and food scarcity within forests in intensifying HWC, which is consistent with earlier reports by Ogra (2008) [5] and Senthilkumar *et al*. (2017) [8]. This recognition suggests that farmers are not only observing the direct damage from wildlife but also linking conflicts to larger ecological processes.
- **Emphasis on Self-Protection:** With all respondents supporting self-efforts against wildlife intrusions, there is a clear lack of confidence in external conflict mitigation systems. Similar observations were noted in previous studies where communities often resorted to trenching, fencing, and night guarding in the absence of timely institutional support.
- **Strong Ecocentrism & Conservation Orientation:** Despite the losses, respondents displayed ecocentric values by acknowledging nature's role in providing happiness, stress relief, and overall welfare. Farmers also showed high agreement with anthropocentric arguments such as conserving biodiversity to ensure a good standard of living, similar to the attitude scales validated by Thompson & Barton (1994) [9].
- **Medium-Level Awareness Predominance:** The classification results showed most respondents in the medium perception group (70%). This could mean

that while a substantial number of farmers are knowledgeable and conservation-oriented, knowledge gaps or practical limitations may prevent them from being fully proactive. These individuals could benefit significantly from awareness campaigns, participatory workshops, and better coordination with forest officials.

- Conservation Implications since there was zero representation in the low perception category, it is evident that environmental apathy is low in this community. This is a positive foundation on which community-based HWC management strategies such as collective fencing, solar lights, and early-warning networks can be successfully introduced.

The perception test revealed that while all farmers were aware of human-wildlife conflict and its impacts, the majority (70%) reflected only a medium level of perception, with 30% showing a higher level and none in the low category. Respondents strongly recognized deforestation and food scarcity as key drivers of conflict and emphasized self-effort as the primary means of protection. At the same time, they expressed clear ecocentric values, highlighting the importance of nature for human welfare and quality of life. These findings suggest that although awareness levels are significant, there remains a gap that can be addressed through targeted awareness programs, capacity building, and community-based approaches to better manage human-wildlife interactions.

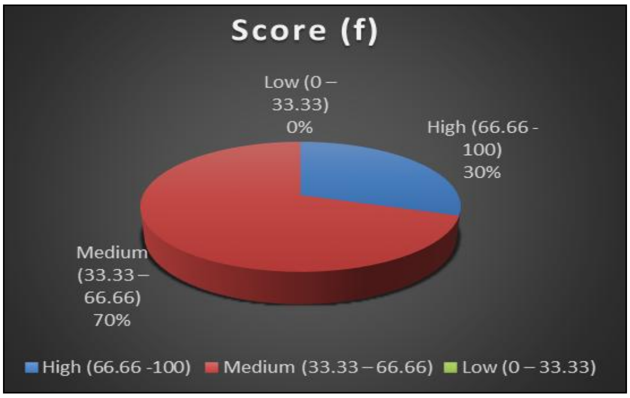

Fig 1: Respondent categorisation

Conclusion

The study revealed that while farmers are well aware of the causes and impacts of Human-Wildlife Conflict (HWC), most respondents (70%) demonstrated a medium level of perception, with only 30% showing high awareness and none falling into the low category. Farmers strongly identified deforestation and forest resource scarcity as key drivers of conflict and emphasized self-reliance over institutional mechanisms for protection. Despite economic losses, respondents displayed ecocentric values, recognizing the role of nature in human well-being and conservation. These findings underscore the need for targeted awareness programs, participatory capacity-building, and community-based interventions to strengthen proactive conflict mitigation and promote sustainable coexistence with wildlife.

Conflict of Interest

Not available

Financial Support

Not available

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