Original Research Article

Constraints Faced by the Tribal People in the Bio-diversity Conservation of Eastern Ghats of Tamil Nadu

ABSTRACT

The present study was conducted to find out the constraints faced by the tribal people in conservation of bio-diversity in Eastern Ghats of Tamil Nadu. The study was conducted in two blocks namely Pethanaickenpalayam block in Salem district and Jawadhu hill block in Thiruvannamalai districts respectively. A list of constraints related to the bio-diversity conservation has been prepared and survey was conducted among 182 tribal respondents in the study area. It was found that indiscriminate felling of trees, conversion of forest land in to agricultural land, higher usage of plant protection and production chemicals, increased human settlements in the eco sensitive area and land fragmentation were the major constraints concerning the bio-diversity conservation. Also suitable suggestions to overcome the identified constraints were discussed in this paper.

Key words: Bio-diversity, Conservation, Constraints, Eastern Ghats, Suggestions, Tribal people

1. INTRODUCTION:

According to FAO (2020) Forest biological diversity is a wide word that encompasses all life forms present in wooded environments as well as their ecological roles. As a result, forest biological diversity includes not just trees, but also the variety of plants, animals, and microbes that live in forests, as well as their genetic diversity. Ecosystem, landscape, species, population, and genetic diversity can all be considered when considering forest biological variety. Both between these levels, complex interactions can occur. This complexity allows species in biologically varied forests to adapt to constantly changing external conditions while maintaining ecosystem functions.

The tribal's are the people who lives a harmonious life in close association with nature and depend on it to sustain their lives. Their religious beliefs and taboos have evolved accordingly to protect and conserve nature and natural resources. Historically, religions have emphasized ethical and moral principles, especially environmental preservation. (Bhagwat et al., 2011).

The concept of idol worship ensures the protection and preservation of a significant number of flora and fauna species in this area, many of which are threatened or endangered. (Sarma and Mukherjee 2019).

Poverty, cultural alienation of young people, modernization, religious conversion, migration, displacement and other factors are eroding the traditional values and social structures of tribes which results in erosion of bio-diversity (Singhal et al., 2021). Tribal people are forest inhabitants who protect the forest's biodiversity and long-term viability. The influencing variables for bio-diversity conservation are local cultural, societal, and ethical norms. If culture is affected, biodiversity suffers as a result. In light of this, the study is critical in preserving the tribal people's biodiversity and culture.

The flora of Tamil Nadu's Eastern Ghats is diverse. Though endemic of species is minimal, the forest ecosystems found here, particularly the evergreens, are distinctive since they are located at low elevations with little rainfall. Climate change, forest fires, grazing, and other things all work together to cause the environment to dry out. Humans and native plants have long populated the area, which has seen tremendous destruction and exploitation through the years. The current research has been taken up which entitled “Constraints faced by the tribal people in conservation of bio-diversity in Eastern Ghats of Tamil Nadu” and the results have been furnished in the results and discussion part and the objectives as follows:

- To study the constraints faced by the tribal people in conservation of bio-diversity
- To enumerate the suggestions to enhance the conservation of bio-diversity

2. METHODOLOGY:

The study was carried out in Eastern Ghats of Tamil Nadu by using the Ex-post facto research design. Among the thirty two districts, Salem and Thiruvannamalai district were selected purposively, since tribal population was high. Pethanaickenpalayam block of Salem district and Jawadhu hills block of Salem district were purposively selected based on higher population. The respondents were selected from the four villages namely Chinna kalrayan vadaku and Periya kalrayan keelnadu villages of Salem district and Kovilur and Nammiyampattu villages of Thiruvannamalai district were purposively selected. From the villages 0.5 per cent of the population was selected as a sample for the study. Totally, 182 sample was derived from the four villages by using the proportionate random sampling method. Data was collected through personal interview method by using the well-structured interview schedule to the tribal respondents. The constraints

faced by the tribal respondents were analysed with the help of Garrett's ranking technique (Garrett and Woodworth 1969). The order of merit assigned by the respondents were converted into ranks using the formula:

$$\text{Percent position} = \frac{[100\ (\ \text{Rij} - 0.5\ )]}{\text{Nj}}$$

Where

R_{ij} = Rank given for i^{th} items by the j^{th} individual

N_j= Number of items ranked by j^{th} individual

Using the chart provided by Garrett and Wood Worth, the location of each rank was transformed into scores (1971). The respondents were asked to assess the importance of the restraints that they faced on a scale of one to ten. Each respondent's rank was transformed into a numerical score. The scores of individual respondents were then summed together and divided by the total number of respondents for each limitation. The mean scores for all of the limitations were ranked and arranged in descending order. By this method, the accuracy in determining the preference was obtained.

3. RESULTS AND DISCUSSION:

3.1. CONSTRAINTS FACED BY THE TRIBAL PEOPLE IN CONSERVATION OF BIO-DIVERSITY:

Biodiversity conservation is critical for the survival of ecosystems. It's also significant for a variety of reasons, including economic, social, and cultural ones. However, biodiversity is threatened by a variety of factors. Hence, it is vital to study the constraints faced by the tribal people in conservation of bio-diversity. Constraints were analysed by the Garrett ranking method and results were revealed in Table 1.

Table 1. CONSTRAINTS FACED BY THE TRIBAL PEOPLE IN CONSERVATION OF BIO-DIVERSITY

n=182

S. No.	Constraints	Average score (Garrett's ranking)	Rank

1.	Indiscriminate felling of trees	58.17	I
2.	Conversion of forest land in to agricultural land	53.23	II
3.	Higher usage of plant production and protection chemicals	51.17	III
4.	Increased human settlements in the eco sensitive areas	51.01	IV
5.	Increased land fragmentation	49.41	V
6.	Off seasonal migration has been increased due to unemployment.	46.33	VI
7.	Poor awareness about the importance of bio-diversity conservation	43.91	VII
8.	Preference towards exotic cattle breeds for higher income which results in gradual disappearance of native cattle breed.	41.98	VIII
9.	Over exploitation of natural resources and garbage accumulation due to tourism	37.50	IX
10.	Poaching of animals for commercial purpose	20.44	X

From the Table 1, it could be interpret that 'poaching of trees' was ranked first with the Garrett score of 58.17. Since, in the study area were highly prone to be expropriation of some trees. Conversion of forest land to agricultural land was obtained the Garrett's average score of 53.23 with second rank. Because, the people nearer to the forest border area are mostly converting the forest land in to agricultural land for getting higher income for improvement of their livelihood.

Higher usage of plant production and protection chemicals was ranked three with the Garrett's score of (51.17). Practicing mono cropping and cultivation of crops like cucumber, cotton and vegetable are promote the higher usage of chemical fertilizers and plant protection chemicals to get higher productivity. The results are in line with the findings of Rajasekaran (2013).

Increasing population among tribal community is the constraint ranked four with the Garrett's score 51.01. Subsequently, fragmentation of land was ranked five with the Garrett's score 49.41. The above two constraints were inseparable increasing population will automatically pave a way to divide the land. Increased population in a family will encourage a person to transform the forest land in to agriculture land also it promotes the adoption of new agricultural practices to satisfy the family needs.

The constraint namely off seasonal migration has been increased due to unemployment is ranked six with the score of 46.33 followed by lack of interest in conservation of bio-diversity ranks seven with the score of 43.91. The reason behind this is the young age people were migrated to other place for education and employment also some another people were migrated to other places for their employment which results in lack of interest in conservation of bio-diversity. The results are in line with the findings of Vasanthapriya (2020).

Adoption of new exotic cattle breeds to get higher income results in gradual disappearance of native breed is the constraint ranks eight with the Garrett's score of 41.98. The productivity of the indigenous cattle were low and it provides lesser income which encourage the farmers to change with exotic breed to get higher income which results in gradual disappearance of the native livestock breed.

Over exploitation on natural resources and increased usage of plastics by the tourists is ranks nine with the score of 37.50. People in large numbers are allowed to go into both protected and other natural forest areas for recreation, carrying with them various items and discarding the packing items, carry bags are enhances the degradation of environment. Tourists also take away with them flowers and other plant parts, seedlings seeds, animal parts etc., affecting the regeneration of various plant and animal species. The results are in line with the findings of Chandra (2016)

The constraint regarding hunting of animals for commercial purpose was not felt by the majority of the respondents and obtained Garrett's score of 20.44. The government policy excludes the hunting of the animals in the study area.

3.2. SUGGESTIONS TO ENHANCE THE CONSERVATION OF BIO-DIVERSITY

Following are the suggestions given by the tribal people to enhance the bio-diversity conservation:

- Permit for grazing in to the forest ensures the soil health as well as reduces soil erosion and it increases soil fertility.
- Creating awareness about the importance of the forest. Which will prevent the deforestation and felling of trees in the forest area.
- Strict restriction of encroachment of forest cover for both tribal and non-tribal people.
- Regulation of the practices like excess usage of chemical fertilizer and pesticides.
- Promotion of ITK practices to ensure the bio-diversity conservation.

- Impart training to the tribal people regarding soil, water and environment conservation.
- Rejuvenation of forest areas which enhances the forest productivity.
- Strict regulation in usage of garbage in hilly area.
- Generation of employment opportunities to the youth tribal people will engage them in their own village and it prevents the migration.
- Promotion of value addition facilities with subsidy at their locality.
- Forming of Self Help Groups and village forest council by the NGO's to implement the afforestation process in the tribal area.

4. CONCLUSION:

The constraints deliberated in the study delivered the problems faced by the tribal people on conserving the bio-diversity. Major constraints faced by the tribal people were indiscriminate felling of trees, conversion of forest land in to agricultural land, higher usage of plant production and protection chemicals, increased human settlements in the eco sensitive areas and land fragmentation due to increased population etc. It could be seen that there is a gradual disappearing of forest land in the study area which would be resolved by creating awareness towards the conservation of bio-diversity and strictly adherence to the forest protection act. Besides that off seasonal migration also a takes a part to change in attitude towards the bio-diversity conservation which could be addressed through the formation of employment opportunities and promotion of value addition practices in minor millets.

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