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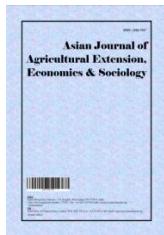
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## **Extent of Utilization of Various Government Tribal Development Schemes by Primitive Tribes Living in Biodiversity Zone of Nilgiri District in Tamil Nadu**

**Foumy N. Rafeeq<sup>1\*</sup> and R. Rajasekaran<sup>2</sup>**

<sup>1</sup>Department of Social Sciences, Agricultural College and Research Institute, Tamil Nadu, Agricultural University, Killikulam, Thoothukudi - 628 252 (Tamil Nadu), India.

<sup>2</sup>Department of Agricultural Extension and Rural Sociology, Tamil Nadu, Agricultural University, Coimbatore - 641 003 (Tamil Nadu), India.

### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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### **ABSTRACT**

Biodiversity hotspots have set up to protect at least 10 per cent of world's ecological regions in order to conserve biodiversity and safeguard many facilities provided by natural ecosystems. Biosphere Reserves are representative areas of natural and cultural landscapes that span a large area of agricultural, marine, or coastal ecosystems, or a combination of them, as well as representative bio-geographic domains or kingdoms. The Nilgiri Biosphere Reserve has richness and diversity, to protect it, the district has been declared as "Organic district" on July 2019. It is also the home to a wide range of human cultural diversity and especially the primitive and vulnerable tribes live in these areas. They are the designated tribal settlers identified by the government and these have their own religious believes, culture and traditions which is extremely different from others customs. They are called as "Adivasi" or "Aborigines". So as to improve their life style and lead a better life like others, central government along with state government had bought several development schemes and plans under Ministry of tribal affairs. The Tribal Development Plan

\*Corresponding author: E-mail: [foumy101@gmail.com](mailto:foumy101@gmail.com);

(TDP) was developed to proactively solve tribal issues and provide culturally compatible solutions, specifically considering indigenous people. The main objective of this study is the adoption level of government tribal development schemes and plans among the primitive tribes living in the biodiversity zone of Nilgiri biosphere. Thus the vulnerable and primitive tribal societies of like Toda, Kota, Kurumba, Paniya, Kattu naickan and Irular of Nilgiri district have been chosen for the investigation with the sample size of 120, in which 20 from each tribes have been chosen. Pre-tested and well-structured interview schedule have been made and thereby undergone survey. Thus it provided an overall picture about the level of adoption about various government tribal development schemes for their betterment and upliftment in among Nilgiri tribes.

**Keywords:** *Nilgiri biodiversity zone; primitive tribes; extent of utilization; tribal development schemes; Nilgiri organic district.*

## 1. INTRODUCTION

Biodiversity is often defined as diversity of plant and animal species in a given ecosystem. The primary components of biodiversity are taxonomic evenness and abundance of species. India is known because of its diverse biodiversity, with forests and trees covering around 24.46 percent of the country's land area. The Convention on Biodiversity have set up itself the objectives to protect at least 10 per cent of world's ecological regions in order to preserve biodiversity and conserve the many services provided by natural ecosystems. UNESCO's Man and Biosphere (MAB) Program has been a pioneer in recognizing the role of local populations in conserving biodiversity within reserves. To avoid conflicts between development, conservation, environmental pollution, degradation and exploitation the United Nations Educational, Scientific, and Cultural Organization (UNESCO) has designated natural regions as 'Biosphere Reserves [1].

Nilgiris Biosphere Reserve (NBR) was declared on September 1, 1986 by the Indian government and recognized by UNESCO in 2000. The NBR is located at the meeting point of the Western and Eastern Ghats, the vast ecoregion is home to a unique flora and fauna, covering an area of approximately 5520 km<sup>2</sup>, there are six protected areas, including the complex of sanctuaries of Nagarhole, Wayanad, Bandipur, Mukurthi, Mudumalai, Siruvani hills, the Nilgiri plateau, the Silent Valley and the whole of the slopes and woodlands of Nilambur [2]. NBR encompasses two of India's ten bio-geographical zones. With over 3700 plant species and 684 vertebrate species, 156 of which are endemic, it is one of the world's biodiversity hotspots. The large contiguous expanse of forest has the highest density of protected areas in the whole country. The total area of the biosphere reserve is 5520

sq. km., of which 3239 sq. km. (58.6 per cent) is the manipulation zone (forestry), 1240 sq. km (22.4 per cent) is the core zone, 335 sq. km. (6.06 per cent) as manipulation zone (agriculture) and 706 sq. km (12.78 per cent) as the restoration zone [3].

Despite their richness and diversity, these forests are irreversibly converting into a protected zone and so as to protect biodiversity and prevent chemical fertilizers having a knock-on effect on wildlife, under Special Area Development Programme (SADP) Nilgiri district has been declared as "Organic district" on July 2019 and a variety of human cultural diversity can be found in the Nilgiri Biosphere Reserve, especially primitive tribes live in this biodiversity zone, habitually in mountains and forest. Tribe is an integrated sovereign unit without any categorized discernment, mostly they used to live in groups who works together in the same ecological area [4].

A tribe had a common culture, descent, dialect, territory and religion. They also had a strong sense of unity and were the ethnic ancestral division of ancient culture and the indigenous people have played a critical role in environmental management and development because they have unrivalled traditional knowledge of environmental repair. There is no doubt that these people know how to live in harmony with nature. The tribes were generally classified into five broad provincial grouping centered on social, ecological, economic, ethnic and administrative factors [5]. The tribal people of India were culturally and geographically at different stages of social and economic development and their problem differ from different regions to regions in their groups.

According to the 2011 census, the tribal inhabitants of the country was 10.43 million,

accounting for 8.6 per cent of the total population. Article 366 (25) designates registered tribes (ST) as communities registered under Article 342 of the Constitution. The total population of the designated tribes in Tamil Nadu is 7.21 lakhs, accounting for 1.10 per cent of the country's total population [6] Tamil Nadu has 36 designated tribal communities, with the literacy rate of 27.91 per cent. The main tribes in the following groups Kota, Irular, Kondakapus, Kammavar, Mahamalasar, Kattu naickan, Paniya and Toda. The main irony was, out of the total population of 7.21 lakhs tribes, around 54,000 were genetic tribes and they were unaware of their group or where they belong to in among 36 tribes [7]. Among the primitive tribes, the Toda, Kota, Kurumba, Irular, Paniya and Kattu naickan populations had neither been decreased nor increased and they were called by the officials as particularly vulnerable tribal groups (PVTGs) due to prehistoric origins [8].

Agriculture is the major occupation of tribal society. They were self-sufficient farmers with a wide knowledge about flora, fauna and medicinal plants. According to the 2011 census, the total population of the Nilgiris was 7,35,394, out of which 33813 was scheduled tribes (the population seems to have decreased by 3.55 per cent from 2001 to 2011 census) [9]. The present study has been carried out with the major objective to document the adoption level of various government tribal development schemes living in the biodiversity zone of Nilgiri district in Tamil Nadu.

## 2. METHODOLOGY

The study was undertaken in the most vulnerable and primitive tribal groups who is living in the biodiversity zone of Nilgiri district in Tamil Nadu. These tribes are spread across the district and inhibited in all the four taluks, therefore the tribal settlements with maximum population was selected for the study purpose. They are Toda from PagalkodMund and MuthanadMund of Uthagamandalam taluk, Kota from Sholur of Udagamandalam taluk, Mulla Kurumba from Theiyakuni of Pandalur Taluk, Beta Kurumba from Mannalkoli of Pandalur taluk, Paniya from Eranai of Pandalur taluk, Kattu naickan from Pannickal of Pandalur taluk and Irular from Bokkapuram of Gudalur taluk. Out of these tribal settlements 20 tribes from each community was selected through proportionate random sampling technique and 120 samples was collectively chosen for the study. Analytical research design

was used for the selection of ultimate sample respondents.

The Government has allocated a sum of Rs.7524.85 Crores for the Comprehensive Tribal Development Programme for the year 2021-22 (Ministry of tribal affairs 2021-2022) [10]. The initiatives includes utilization of provision of basic amenities which covers (construction of houses, Issuance of Free House Site Pattas, Construction of road facilities, Burial Grounds and Pathways, Financial Assistance for Funeral Rites, Supply of drinking water and Free electricity) utilization for educational development (Accessibility of Government Tribal Residential Schools(GTRs), Availability of Special Hostels for Tribal Students, Provision of Pre-matric and Post-matric Scholarships, Free education till 12th standard to all, Free Supply of Books, Note Books, Slates, Special Guides, Uniforms and Bicycles, Concession in Tuition fee, Special fee and Examination fee are extended), utilization for generation of employment (Conducting special trainings under TAHDCO, Provision of Beehive boxes and Construction of check dam for irrigation facility), utilization indebtedness (Short term loans for raising crops, Medium term loans for purchase of agricultural equipment and Long term loans for sinking new wells) utilization of health care ("Dr.Muthulakhsni Reddy Maternity Assistance Scheme", Mobile hospital, Insurance Scheme for Life Saving Treatments and Construction of primary health centres), utilization of comprehensive tribal development programmes (Renovation and repairing of damaged houses) and utilization of vocational guidelines centre (Guidance class for tribal youth for carrier development) are implemented through HADP for Tribal Development [11].

A well-structured and pre-tested interview schedule was prepared for collecting the data on the profile characteristics, analyzing livelihood pattern, awareness about government development schemes, extent of utilization of benefits for tribal upliftment and constraints faced by the tribes and to make suggestions for welfare and advancement of them. The collected data were tabulated, analyzed by using suitable statistical tools and SPSS version 16.

## 3. RESULTS AND DISCUSSION

Table 1 indicates about the extent of utilization of various government development schemes by the tribes. About (79.17) per cent of tribes have utilized the houses, which was constructed by

the government under the scheme, Chief Minister's Solar Powered Green House Scheme (CMSPGHS). Over two-third of population (90) per cent have utilized the free house pattas given by the government. Road are constructed in every villages up till their houses (93.33) per cent respondents were utilized the road facilities under development schemes. Burial grounds and pathways are the most basic services and (85.83) per cent of the population have utilized, but in most of the villages burial grounds are far away from their colonies and takes hours to reach there by walk and most of the grounds can

be reached only by walk. About (57.50) per cent of people were utilized the benefits obtained after death for the family members from the government. Safe drinking water is the most elementary feature for an individual and so (92.50) per cent of respondents had utilized and satisfied with the services. 100 units of free electricity is provided by the electricity board to each households and (72.50) per cent of tribes had electricity in their households but whereas the remaining people are aware of it but haven't utilized yet.

**Table 1. Extent of utilization of various government development initiatives**

Components	Respondents (n=120)		
	Frequency	Percentage %	
Provision of basic amenities	Construction of houses	95	79.17
	Issuance of Free House Site Pattas	108	90
	Construction of road facilities	112	93.33
	Burial Grounds and Pathways	103	85.83
	Financial Assistance for Funeral Rites	69	57.50
	Supply of drinking water	111	92.50
Educational development	Free electricity	63	52.50
	Accessibility of Government Tribal Residential Schools(GTRs)	92	76.67
	Availability of Special Hostels for Tribal Students	49	40.83
	Provision of Pre-matric and Post-matric Scholarships	114	95
	Free education till 12 <sup>th</sup> standard to all	87	72.50
	Free Supply of Books, Note Books, Slates, Special Guides, Uniforms and Bicycles.	94	78.33
	Concession in Tuition fee, Special fee and Examination fee are extended.	103	85.83
Generation of employment	Conducting special trainings under TAHDCO	95	79.17
	Provision of Beehive boxes	30	25
	Construction of check dam for irrigation facility	87	72.50
Indebtedness	Short term loans for raising crops	62	51.67
	Medium term loans for purchase of agricultural equipment	32	26.67
	Long term loans for sinking new wells	116	96.67
Health care	"Dr. Muthulakhsmi Reddy Maternity Assistance Scheme"	119	99.17
	Mobile hospital	116	96.67
	Insurance Scheme for Life Saving Treatments	119	99.17
	Construction of primary health centres	37	30.83
Comprehensive tribal development programmes	Renovation and repairing of damaged houses	82	68.33
Vocational guidelines center	Guidance class for tribal youth for carrier development	75	62.50

Near about (76.67) per cent of respondents had utilized Government Tribal Residential schools but the left over people sent their children to private schools. Though the residential hostels are far away from each village, only half of the tribes (40.83) per cent had facilitated hostel facilities. The pre and post matric scholarship really helpful for the students, and so (95.00) per cent are receiving scholarships but some of the parents are unaware of it but utilized it. The main issue with tribal population is that after 8<sup>th</sup> class they stops going to school and works as wage labors in estates and industries as the high schools will be far away from their villages, Only (72.50) per cent of tribes had utilized free education till 12<sup>th</sup> classes, but (85.83) per cent interviewees knows about the availability of concession in fees for higher education. About (78.33) per cent of the tribes were receiving free slates, books, bicycle, laptops and uniforms from the government schools for their betterment and to encourage students for attending the schools as school drop outs are increasing day by day in among the tribes.

The government is boosting the tribes for employment generation in villages by providing training under Tamil Nadu AdiDravidar Housing and Development Corporation Limited (TAHDCO) and so (79.17) per cent of tribes had utilized and got employed as a result. As honey rearing and collecting is main occupation of the primitive tribes, government is providing beehives to the people practicing it, but only (25) per cent of the population had received benefits out of it. Agriculture is the main occupation of the tribes for their livelihoods, and so (72.50) per cent of tribes had utilized check dams and irrigation facilities for their cultivation and other household purposes. Only half of the tribes (51.67) per cent were utilized the short term loans but only (26.27) per cent tribal farmers had utilized subsidies provided for purchasing of agricultural equipment. Each village was provided with wells for irrigation, drinking and other household usages and so (96.67) per cent had benefited of it.

Health is the first and foremost wealth of an individual, the pregnant women who was consulted in government hospitals will be given a sum of Rs.12,000/- to 18,000/- under the schemes of Dr. Muthulakshmi Maternity Benefit Scheme and (99.17) per cent of individuals utilized and gained benefits out of it. Ones in every month a mobile ambulance visit was done by the doctors along with the nurses to every

villages to know the health and other conditions of tribes as majority of the tribes were affected with sickle cell anemia, hypertension and malnutrition, hence (96.67) per cent utilized it. Central government along with the state government was providing insurance assurance of Rs.5 lakhs to each tribal families under (CM-CHIS), almost (99.17) per cent of tribal societies had gained benefits from it. Only one third (30.83) per cent respondents availed the benefits gained out of primary health centres in each villages and the remaining people mostly used government hospitals and private hospitals even for a mild illness.

Most of the tribes had applied for the renovation of damaged houses but only (68.33) per cent tribes were benefited of the scheme on it. Vocational guidelines and trainings were provided in each villages for the educated and uneducated youth for employment generation in the areas like police trainings, yoga, spoken English, welding, mechanics and so on, about (62.50) per cent of tribes were successfully utilizing the schemes to a good extent.

The government was providing several beneficial schemes for PVT groups for uplifting them and to lead a better life. The schemes provided under AdiDravidar Welfare Department was listed in Table 2.

The similar factors, which comes under the provision of basic amenities, educational development, generation of employment, indebtedness, health care, comprehensive tribal development programmes and vocational guidelines centre were directly clubbed or grouped under 9 factors respectively.

### 3.1 Factor- I

From the Table 2, four instituting statements of the factor-I in order of the factor loadings were: Construction of houses (S<sub>20</sub>), Supply of drinking water (S<sub>18</sub>), Renovation and repairing of damaged houses (S<sub>25</sub>), Issuance of Free House Site Pattas (S<sub>21</sub>). According to the nature of the statements which created the factor-I was named as "basic amenities". In concerning the highest eigenvalues of this factor (eigenvalue 3.876 and variance 15.506 per cent) was considered to be the most important and utilized factor on utilization of government development schemes as perceived by the tribes of Nilgiri district in Tamil Nadu.

**Table 2. Factor analysis for the extent of utilization of benefits by tribes**

S. No.	Factors (Eigen values)	Variables under factors	% of variance	Cumulative %
1.	Factor – I (3.87)	Construction of houses, Supply of drinking water, Renovation and repairing of damaged houses, Issuance of Free House Site Pattas	15.506	15.506
2.	Factor – II (2.48)	Conducting special trainings under TAHDCO, Provision of Beehive boxes and Guidance class for tribal youth for carrier development	9.950	25.455
3.	Factor – III (2.33)	Accessibility of Government Tribal Residential Schools (GTRs), Free education till 12 <sup>th</sup> standard to all, Free Supply of Books, Note Books, Sates, Special Guides, Uniforms and Bicycles, Concession in Tuition fee, Special fee and Examination fee	9.326	34.782
4.	Factor – IV (2.01)	Construction of check dam for irrigation facility Long term loans for sinking new wells	8.068	42.850
5.	Factor – V (1.45)	Burial Grounds and Pathways Financial Assistance for Funeral Rites	5.834	48.684
6.	Factor – VI (1.27)	Construction of road facilities, free electricity Availability of Special Hostels for Tribal Students	5.114	53.798
7.	Factor – VII (1.15)	Dr. Muthulakhsni Reddy Maternity Assistance Scheme, Mobile health care unit van, Insurance Scheme for Life Saving Treatments Construction of primary health centres	4.608	58.407
8.	Factor- VIII (1.10)	Medium term loans for purchase of agricultural equipment Short term loans for raising crops	4.408	62.814
9.	Factor – IX (1.06)	Provision of Pre-matric and Post-matric Scholarships Basic communication skills	4.277	67.091

### 3.2 Factor-II

Three consecutive statements of the factor-II in order of the factor loadings were: Conducting special trainings under TAHDCO (S<sub>13</sub>), Provision of Beehive boxes (S<sub>14</sub>) and Guidance class for tribal youth for carrier development (S<sub>24</sub>). According to the peculiarity of the

statements which formed the factor-II was named as “Generation of employment” and (eigenvalue 2.487 and variance 9.950 per cent) is considered to be the second most inducing factor for utilization of development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.3 Factor-III**

Four constituting statements of the factor-III in order of the factor loadings were: Accessibility of Government Tribal Residential Schools (GTRs) ( $S_1$ ), Free education till 12<sup>th</sup> standard to all ( $S_4$ ), Free Supply of Books, Note Books, Slates, Special Guides, Uniforms and Bicycles ( $S_5$ ) and Concession in Tuition fee, Special fee and Examination fee are extended ( $S_7$ ). According to the features of the statements which made the factor-III was named as "Education development". This readability with 2.332 eigenvalue constitute 9.326 per cent of variance on utilization of tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.4 Factor-IV**

Two progressing statements of the factor-IV in order of the factor loadings were: Construction of check dam for irrigation facility ( $S_{10}$ ) and Long term loans for sinking new wells ( $S_{16}$ ). According to the content of the statements which shaped the factor-IV was named as "Water usage efficiency" which determined eigenvalue 2.017 and 8.068 per cent of variance on utilization of tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.5 Factor-V**

Two constituting statements of the factor-V in order of the factor loadings were: Burial Grounds and Pathways ( $S_{11}$ ) and Financial Assistance for Funeral Rites ( $S_{12}$ ). According to the nature of the statements which made the factor-V was named as "Cremations". It created eigenvalue of 1.459 and 5.834 per cent of variance on utilization of tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.6 Factor-VI**

Three instituting statements of the factor-VI in order of the factor loadings were: Construction of road facilities ( $S_3$ ), free electricity ( $S_6$ ) and Availability of Special Hostels for Tribal Students ( $S_{15}$ ). According to the feature of the statements which created the factor-VI was named as "Convenience to survive" and it had 1.279 eigenvalue constitute 5.114 per cent of variance on the extent of utilization of tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.7 Factor-VII**

Four progressing statements of the factor-VII in order of the factor loadings were: Dr. Muthulakhsni Reddy Maternity Assistance Scheme ( $S_8$ ), Mobile hospital ( $S_{17}$ ), Insurance Scheme for Life Saving Treatments ( $S_{19}$ ) and Construction of primary health centres ( $S_{23}$ ). According to the content of the statements which made the factor-VII was named as "Health care" which resolute eigenvalue 1.152 and 4.608 per cent of variance on tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.8 Factor-VIII**

Two constituting statements of the factor-VIII in order of the factor loadings were: Medium term loans for purchase of agricultural equipment ( $S_{22}$ ) and Short term loans for raising crops ( $S_9$ ). According to the content of the statements which made the factor-VIII was named as "Indebtedness" which resolute eigenvalue 1.102 and 4.408 per cent of variance on tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

### **3.10 Factor-IX**

Two constituting statements of the factor-VIII in order of the factor loadings were: Provision of Pre-matric and Post-matric Scholarships ( $S_2$ ) and Basic learning and communication skills ( $S_{26}$ ). According to the content of the statements which made the factor-IX was named as "Educational needs" which resolute eigenvalue 1.069 and 4.277 per cent of variance on tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

Totally as it is mentioned in the Table 2, the nine mentioned factors constituted about 67.091 per cent of contributions towards the extent of utilization of tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu and the rest 32.909 per cent related to factors were not projected in the study. Out of 26 statements, 20 statements were grouped into nine factors. The remaining 6 statements which comes under the development schemes is Provision of Beehive boxes ( $S_{14}$ ), Construction of check dam for irrigation facility ( $S_{10}$ ) and Long term loans for sinking new wells ( $S_{16}$ ), Insurance Scheme for Life Saving Treatments ( $S_{19}$ ), Medium term loans for purchase of agricultural equipment ( $S_{22}$ ) and Short term loans for raising

crops ( $S_9$ ) were not grouped in any factors. Hence they are not influencing the extent of utilization of the tribal development schemes as perceived by the tribes of Nilgiris in Tamil Nadu.

#### 4. CONCLUSION

The conditions and current living scenario of the tribes is very pathetic. In tribal areas, natural resources are generally degraded, causing indigenous people to fall into poverty. In the Human Development Index, there are tribal areas and ethnic groups in states is at the end of the table [6]. The basic fact that Indian indigenous people are the poorest of all. About 65 per cent of India's tribal population lives below the poverty line and tribal areas are the least developed and the main issues are land acquisition, debt and the use of economic and material assets.

About half of the tribes have already been utilized all the benefits provided for them by the government for their betterment and improving the livelihood status, whereas the remaining tribes are aware of the schemes and welfares and so the rate of adoption is slow. So as to bring forward the tribes, both socially and economically, more awareness classes must be conducted in the villages, thereby adoption will be increased in all aspects. As a result, the living standards of the tribes will be improved.

#### SUGGESTIONS FOR FUTURE RESEARCH

- An attempt was made to study the current scenario analysis of status and livelihood pattern of tribes along tribal development programme in a particular area i.e. Nilgiri Biosphere Reserve. Similar studies could be undertaken in other tribal areas in different regions.
- A research study covering all the tribal development programmes in a particular state may be conducted confining to the predominant tribal areas.
- Comprehensive research focused itself on the nature of the welfare measures and the approach was taken up by the government and voluntary organizations in reaching the tribals needs to be taken.
- As far as possible the educated and trained tribes should be used as change agents for the tribals in all the developmental programmes and other tribal welfare centres.

- Longitudinal studies may be undertaken to find out the long term impact of tribal development programmes.

#### DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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