

Assessment of Human Development Status in Eco-Sensitive Zone of Northern Part of Western Ghats, Maharashtra

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Abstract

The government's commitment to safeguarding forest areas in the northern part of Maharashtra's Western Ghats, a globally recognised biodiversity hotspot, has led to the designation of an Eco-Sensitive Zone (ESZ) covering 287 villages. While this move restricts development activities to prevent further environmental degradation, it also raises concerns about the well-being of local communities. This study assessed the human development status of these villages, considering the standard of living and deprivation levels. The analysis, categorised into five classes, revealed that 88% of the villages experience high levels of deprivation, with only 51% maintaining a high standard of living. This indicates a low level of human development. These findings are crucial for understanding the current state of the Eco-Sensitive Zone and formulating effective strategies for its sustainable development. The study emphasises the need to balance environmental protection with the well-being of local communities, promoting eco-friendly activities like ecotourism, agroforestry, fisheries, and agro-based enterprises. These strategies offer sustainable livelihoods and promise to preserve the environment and improve the quality of life for the local communities. This research serves as a benchmark for aligning environmental efforts with the welfare of all stakeholders, instilling hope for a better future.

Keywords: standard of living, deprivation index, eco-sensitive zone, ecotourism, hotspot, Western Ghats, protected areas

Introduction

Western Ghats is a unique land feature along the western part of the peninsular India. It is a UNESCO World Heritage Site (IUCN) known for its scenic beauty, vast

biodiversity, and endemism of several flora and fauna (Balasubramanian, 2017). The area has several famous tourist attractions like historical monuments, ancient caves, temples, water bodies, beautiful picnic spots, and

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indigenous cultural traditions. However, Western Ghats is identified as one of the Hotspot areas at the international level because it has been significantly impacted and altered by human activities, such as poaching, changing cropping patterns, forest-based industries, river valley projects, mining activity, mass tourism, road constructions, settlement, etc. These activities have led to irreversible damage to historic places, monuments, and wildlife, and the streets and roads are overcrowded. Davidar, Arjunan, and Puyravaud (2008) explore the complex interplay of factors driving these activities, addressing the ecological and socioeconomic concerns that emphasise aspects crucial for conservation and sustainable resource management in this biodiversity region.

The Government's response to the situation involved designating it as an Eco-Sensitive Zone (ESZ), a significant move recommended by both the Gadgil and Kasturirangan committees (Kasturirangan (2013), Gadgil (2011)). This designation is crucial as it curbs productive and developmental activities that contribute to environmental degradation, thereby protecting the fragile areas surrounding the Western Ghats. An Eco-Sensitive Zone pertains to the fragile areas surrounding protected zones, as declared by the Ministry of Environment, Forest, and Climate Change (MoEFCC). In India, ESZ regulations were initially introduced in 2002 under the Wildlife Protection

Act, further established by the National Green Tribunal in 2013, and more recently reinforced by the Ministry of Environment, Forest, and Climate Change in 2019, all aimed at preventing further degradation within the Western Ghats region. Das et al. (2006) notably prioritised conservation areas within the Western Ghats, identifying and safeguarding key ecological regions in this biodiversity-sensitive zone. Maharashtra has encompassed 2092 villages within these Eco-Sensitive Zones, with 287 located in northern Western Ghats, spanning Nashik, Ahmednagar, and Pune districts. These designated areas include wildlife sanctuaries, national parks, community reserves, and conservation reserves.

Development activities are already restricted, but anthropogenic interference increases peripherally for various reasons, such as agriculture, resorts, mining, agriculture-based or forest-based industries, etc. Therefore, a buffer area of 10 km is kept around the protected area boundary in the ESZ.

In the contemporary era, people from all economic and social levels prefer to spend much of their time and money on recreation and relaxation. In contrast, the high rate of urbanisation has changed the old traditional attitude of inhabitants and has made them materialistic (Kumari & Pavendar, 2003). This changing attitude has created the problem of over-exploitation of natural resources at tourist places, resulting in various environmental

problems and threatening the area's sustainable livelihood and security. Paranjape (2010) provided illustrations of cases like Amby Valley and Lavasa to highlight that such urbanisation and tourism development primarily cater to the elite in society and pose a significant ecological threat to the Western Ghats. Manickavasagam (2003) has mentioned that tourism has caused irreversible damage to historic places, monuments, and wildlife. The streets and roads of pilgrim centres, tourist interest places, and holiday resorts are overcrowded.

Consequently, the fragile ecosystem is affected. In this background, the government has developed some rules and regulations restricting the development activities in the area for conservation purposes, specifically in ESZ areas. The restrictions on development activities have created a dilemma regarding the area's development or conservation of the environment, where the standard of living is low and the deprivation of basic needs is high. The objective of the study is to evaluate the development status of the Eco-sensitive zone (ESZ) in the context of deprivation and the standard of living of people. Therefore, the paper emphasises comprehending the status of development based on deprivation and the standard of living level that may be relevant to designing a conservation policy for the study area while considering the sustainable livelihood strategies of the local communities.

Study Area

The selected study area is part of the Western Ghats's declared ESZ in Maharashtra, which covers the western area of the Nasik, Ahmednagar, and Pune Districts (Fig 1). The study area has many natural and cultural sites with significant heritage value and is recognised as a potential tourist destination.

However, the area is less developed, and most people are socio-economically poor and face challenges in meeting the necessities for a sustainable livelihood. On the other side, there are numerous problems related to environmental degradation and changes in the local people's authentic cultural and traditional values. In consideration of the sensitivity of the area, the government has taken various conservative actions by declaring ESZ and protected areas and restricting productive activities that may affect development measures in the area. It may hamper the area's development process, and the fate of the already socio-economically backward communities will be grim. Hence, the villages were selected from the eco-sensitive zone to study the status of the local communities living in the area. The ESZ area in the Western Ghats region of Maharashtra covers 63 talukas in 12 districts, including seven tribal districts. There are a total of 2092 Eco-sensitive villages in the notified list of the government of Maharashtra. The selected study area covers 287 villages out of the 2092 villages notified as Eco-sensitive villages by the government of

Maharashtra. The district-wise distribution of villages has been given in Table 1. It has an area of 58.6 lakh hectares (19% of the state total) and a

population of 101.2 lakhs (10% of the state total). Most of the villages are notified as tribal villages.

Figure 1
Map of the Study Area

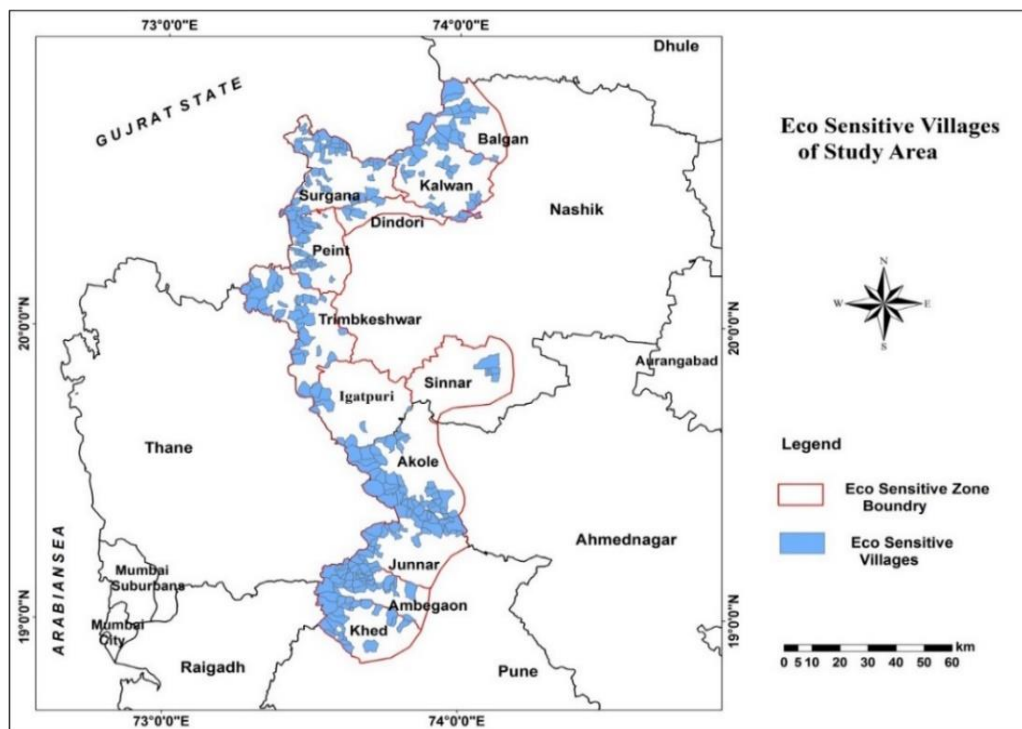


Table 1
District-wise Eco-Sensitive Villages of Study Area

Districts name	Tahsil name	No of Villages
Nashik (156)	Baglan	15
	Dindori	5
	Igatpuri	8
	Kalwan	28
	Peint	23
	Sinnar	5
	Surgana	42
	Trimbakeshwar	30
Ahmednagar (41)	Akole	41

Districts name	Tahsil name	No of Villages
Pune (90)	Ambegaon	36
	Junnar	32
	Khed	22
Total (3)	12	287

Objectives

1. To understand the current situation of deprivation in the study area.
2. To access the development status of the study area with the help of the standard of living index.

Methodology

The study aims to assess the development status of eco-sensitive zones (ESZ) in terms of deprivation and standard of living. This involves evaluating the availability and access to basic needs and essential infrastructure. The village-level data is sourced from the census data. The study primarily relies on secondary data from government and non-government organisations, books, gazetteers, monographs, and the 2011 Census. Fieldwork is conducted to validate the situation through observations and discussions with the villagers. The study area map is created using census maps, while the location map and index outcome maps are generated using the GIS platform. The investigation takes an integrative perspective and employs a quantitative approach, utilising measures such as the Deprivation index and Standard of Living status to understand the existing socioeconomic characteristics and assess the level of development.

Deprivation Index

Deprivation is generally recognised as a complex concept. A single variable cannot be measured; instead, it requires the combination of several variables to understand it. To calculate Deprivation and Standard of living, we multiply the score assigned to selected parameters on the Likert scale by the percentage of different parameters. Then, we divide the result by the maximum possible value of the assigned scores for each village. The Deprivation Index is calculated using the

following formula:

$$DI = \frac{1}{5} (d_1 + d_2 + d_3 + d_4 + d_5) \times \frac{1}{3}$$

The following factors have been considered to assess the livable conditions: source of drinking water, lighting, house condition, latrine facility, and waste water outlet connected to the drainage. These factors are essential for maintaining a minimum quality of life.

Deprivation is measured on a scale of 0-100 per cent in intervals of 20 per cent. Based on the ascending 20 per cent intervals, the deprivation status ranges from very low to very high. Each criterion is scored on a Likert scale from 0 to 3, with higher scores indicating greater deprivation. For instance, d_1 represents the location of the drinking water source, where 0 signifies that the source is within the premises, 1 means it is near the premises, and 2 indicates a distant water source.

Standard of Living Index

Living standards directly measure an individual's or family's consumption of goods and services necessary for well-being. People experiencing low living standards often lack material goods, participate in limited social activities, and may need to economise to afford basic necessities. These parameters directly assess people's consumption of goods and services essential for their well-being, making living standards a direct and immediate indicator of a specific region's economic well-being and development.

The following seven indicators have been used to identify households' standard of living: house condition (Material used for wall and Material used for roof), Household Ownership status, Source of Drinking water, Type of fuel used for cooking, Kitchen facilities, Availability of Assets / Entertainment, and House type by Structure. The following formula has been used to measure the standard of living:

Standard of living index

$$= \sqrt[7]{a * b * c * d * e * f * g}$$

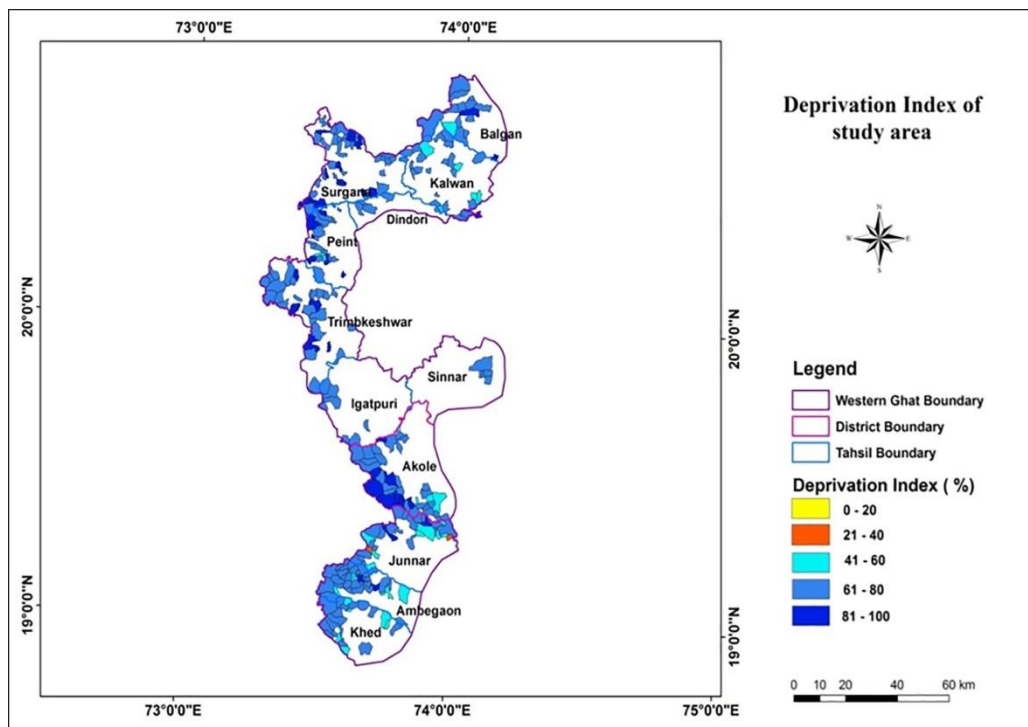
Seven components are considered in the standard of living, a to g, and the

weights are given to each parameter, like 0 to 4, based on the Likert scale. If the status of the standard of living is excellent, the score is higher; if the score is low, the score is lower.

The status of the standard of living has been assigned scores based on a Likert scale of 0 to 3 or 4 based on availability and quality or the condition of the parameter selected for the analysis. The standard of living extends from 0 to 100 per cent in a 20% ascending manner.

Figure 2

Deprivation Index



Results and Discussion

Deprivation is a broader concept than poverty, focused on capabilities, opportunities, and empowerment. The relationship between deprivation and poverty can be viewed as causal: poverty is the lack of resources to meet unmet needs, which constitutes deprivation (Townsend, 1987).

The deprivation Index analysis for the selected villages has been classified into five categories. Based on low and high deprivation levels, the classes range from very low to very high. The analysis revealed that none of the villages is in the very low category, representing an excellent situation.

Of the 287 villages under ESZ, 34 are within the low to medium categories (Fig.2). This means the villages are in better condition than the parameters selected for the analysis. It may reveal a source of drinking water near the premises; the main source and power supply are satisfactory; the house condition; and latrine facilities are in good condition, and the wastewater outlet connected to drainages is in a moderate state, i.e., Akola and Bholewadi villages.

A better situation is mainly a result of easy accessibility, responsible leadership, active participation of the local communities in village development activities, and efficient use of government schemes.

However, a significant number of villages, 213 in total, fall into the category of high deprivation due to a

distant source of drinking water, which worsens during the summer season, and poor main source and supply of power, house condition and latrine facilities, and wastewater outlet connected to drainage. Finally, 40 villages fall into the category of very high deprivation (Fig. 2) due to a more severe lack of access and poor conditions across the parameters.

The other aspect is that the standard of living has a positive dimension when assessing the level of development. Out of a total of 287 villages, 11 villages fall under the low category, showing a poor standard of living, and 134 villages come under the moderate category, ranging from 41-60% of the standard of living, which shows a moderate condition of houses, electricity, water, latrine, cooking material, available asset, etc. in the villages.

None of the villages fall under the very low category (Fig. 3). The low to moderate standard of living is due to a lack of knowledge and limited potential development (Basavarajiah, 2020).

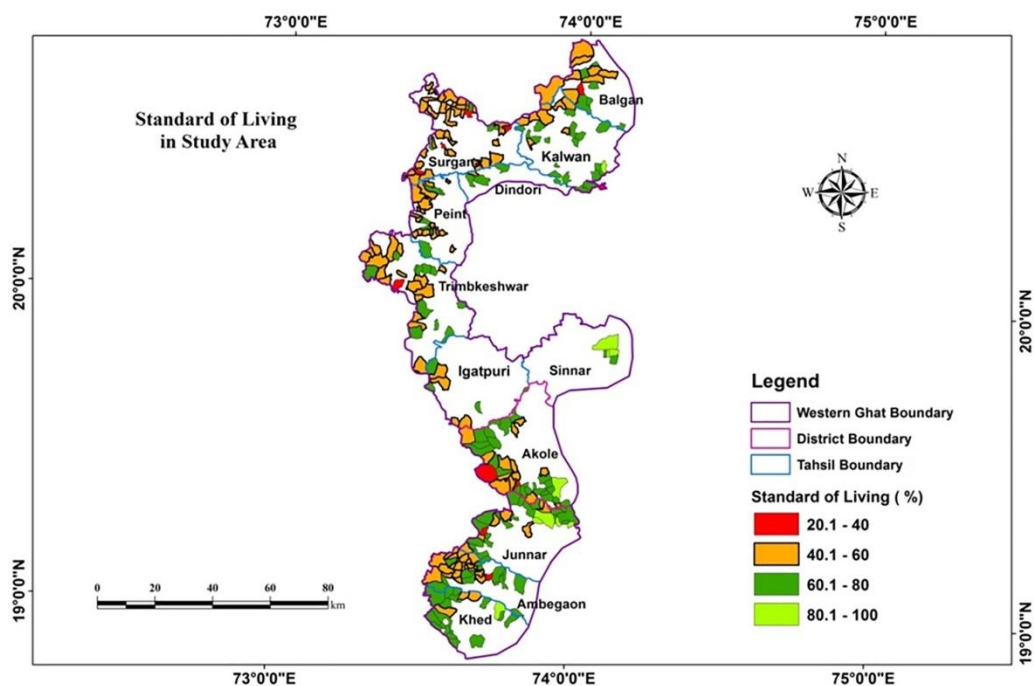
Also, the region's physiography leads to low infrastructural development (Jaybhaye, 2007). The villages in less to moderate categories, Saptashrungigad, Mehadar, and Murshet, have poor state housing conditions. These structures are predominantly made from grass, thatch, bamboo, wood, mud, plastic, polythene, etc. The status of house ownership in these villages is deemed poor. Galbari village exhibits the lowest cooking conditions, as cooking outdoors is prevalent in most

villages. However, using firewood, crop residue, cow dung cake, coal, etc., for cooking indicates poor fuel usage. For drinking water, some villages rely on sources like wells, tube wells, hand pumps, tanks, ponds, lakes, and springs for their water supply instead of tap water.

These villages have comparatively very good conditions for houses, electricity, water, latrines, cooking materials, available assets, etc. For example, Bhivegaon village primarily comprises permanent and semi-permanent houses, indicating a favourable living situation.

One hundred thirty-one villages are found in the high standards of living category, ranging from 61 to 80%.

Figure 3
Standard of Living



Conclusion

The delineation of the area as an eco-sensitive zone is the outcome of various studies that confirmed severe environmental degradation in the Western Ghats, leading to conservation and protection becoming the prime necessity in the region. Prioritising environmental

protection and conservation has affected development activities and halted the region's development process. It has mainly impacted the local communities harmoniously adapted to the environment for generations. The culprits are outsiders, and the sufferers are the local communities. It raises the

question of social justice, highlighting the need to find strategies that balance environmental care with the well-being of local communities. A study emphasising understanding the development level of this community at the village level, including deprivation and standard of living, found that 88% of villages have high levels of deprivation and 51% have low living standards. The communities lack basic needs such as proper housing, access to clean water, and adequate cooking facilities. They also lack opportunities for skills development and occupations. Encouraging environment-friendly activities such as ecotourism, agroforestry, and cottage industries could help improve the environmental status while providing economic opportunities for the local communities. This paper has policy relevance in developing this less-developed section and providing environment-friendly economic activities for sustainable development in the region despite the restrictions of the eco-sensitive zones.

References

- Basavarajaiah, D. M., Narasimhamurthy, B., Bharathi, M., & Naik, J. (2020). Tribal livelihood status in Western Ghats. *Fores Res*, 9, 234.
- Balasubramanian, A. (2017). Biodiversity profile of India. Report submitted to Centre for Advanced Studies in Earth Science, University of Mysore, 11.
- Das, A., Krishnaswamy, J., Bawa, K. S., Kiran, M. C., Srinivas, V., Kumar, N. S., & Karanth, K. U. (2006). Prioritisation of conservation areas in the Western Ghats, India. *Biological Conservation*, 133(1), 16–31.
- Davidar, P., Arjunan, M., & Puyravaud, J. P. (2008). Why do local households harvest forest products? A case study from the southern Western Ghats, India. *Biological Conservation*, 141(7), 1876–1884.
- Gadgil M. (2011). Report of the Western Ghats Ecology Expert Panel Part I Submitted to The Ministry of Environment and Forests, Government of India. Census of India. Retrieved from <https://censusindia.gov.in/census.website/>
- Jaybhaye, R. G. (2007). Environmental Management for Sustainable Development of Ecotourism in the Western part of Pune District (Maharashtra). Department of Geography, Savitribai Phule Pune University, 11.
- Kasturirangan, K. (2013). Report of the High-Level Working Group on Western Ghats Volume I.
- Manickavasagam, V. (2003). Environment problems associated with tourism; Environmental challenges towards tourism. In V. Dhulasi Birundha (Ed.), Kanishka Publisher, New Delhi, 42–45. Ministry of Child and Women Development, Government of

India. (2009). *Gendering human development indices: Recasting the gender development index and gender empowerment measure for India*, 5-6.

Ministry of Environment and Forests. (2013). Government of India.

Paranjpe, M. P. (2010). Urbanisation and tourism development in the Western Ghats: A threat to ecology and the commoner.

Shantha Kumari, A. & Pavendar, T. (2003). Madurai region: An analysis of tourism potential and development; Environmental challenges towards Tourism. In V. Dhulasi Birundha (Ed.), Kanishka Publisher, New Delhi.

Townsend, P. (1987). Deprivation. *Journal of Social Policy*, 16(2), 125–146.

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