



**CONSERVATION OF WESTERN GHATS: CONTRADISTINCTIVE APPROACHES ADOPTED BY
EXPERT COMMITTEES OF MoEF**

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Abstract

The Western Ghats situated along the west coast of peninsular India, which constitute a unique biological region of the world. It is one of the 25 Global Biodiversity Hot Spots with highest human density and contains more than 30% of all plants and vertebrate species found in India in less than 6% of total geographical area. The degradation of forests is high due to developmental activities such as plantation agriculture, hydroelectric projects, mining, transportation, tourism and conversion of the forest area into residential and commercial use. Ministry of Environment and Forest has appointed Madhav Gadgil as the Chairman of Western Ghat Ecology Expert Panel (WGEEP) to identify Ecologically Sensitive Areas of Western Ghats and to suggest various methods to conserve the biodiversity. The committee submitted the report on August 30, 2011. A strong protest against the report was erupted in Kerala and another committee was appointed under the Chairmanship of Dr. G Kasturirangan as High Level Working Group (HLWG). The Working Group submitted their report on April 15, 2013. As a response, a wide protest had occurred against these two reports due to unfair imposition of strict regulation of those reports. There are wide contradictions in definition, parameters, methodology and extension of western Ghat region. This paper focuses on comparative and critical evaluation of two reports with a view of ground.

Keywords: Western Ghat, Ecologically Sensitive Area, Developmental Activities

Introduction:

Ministry of Environment and Forest has appointed Madhav Gadgil as the Chairman of Western Ghat Ecology Expert Panel (WGEEP) to identify Ecologically Sensitive Areas of Western Ghats and to suggest various methods to conserve, protect and rejuvenate the biodiversity of the region. The panel defined Ecology Sensitive Area as “those areas that are ecologically and economically very important, but, vulnerable to even mild disturbances and hence demand conservation” and the report submitted the report on August 30, 2011. A strong protest against the report was erupted in Kerala and another committee was appointed under the Chairmanship of Dr. G Kasturirangan as High Level Working Group (HLWG) to study about Gadgil report. The Working Group submitted their new and separate report on April 15, 2013. A wide protest had occurred against these two reports due to unfair imposition of strict regulation. Baseless rumors spread that, the report will affect the high range population. ‘There is hidden agenda to convert all the ESAs into forest area in a stage by stage manner, new authority will introduce to evict the people from their land, new houses will not be allowed once the ESAs are declared, monoculture plantations in the Western Ghats going to be restricted, all houses in ESAs have to be painted green and lights have to be switched off by 8 pm and no land transaction can be carried out in ESA villages etc.’ It is clearly noted there are distinct differences in demarcation, methodological adoption, and recommendations which mislead the people and conceived fear about the outcome of the reports.

Significance of Western Ghats

The Western Ghats extends from 8° N to 14° N and 75° E to 80° E. It constitutes more than 40 % (29691 sq Km) of the total area of Kerala and covers 123 villages of ten districts. The southern part of the study region is very narrow and the terrain is less than 1000 m height which is known as Cardamom hills or the Agasthya ranges as move north ward, the height of the mountain increases. The highest peak in Western Ghats is known as Anamudi range. The height of the Anamudi is 2695 m and then it sharply decreases towards the Palghat Gap. The extension of the gap is about 40 km. In the north of the Gap, the terrain sharply increases and reaches the second highest mountain ranges in the Western Ghats known as Dodabeta of Nilgiri ranges which is about 2467 m. All those latitudes the slope in the western side of mountain is sharp.

Spatial variation of the rainfall over the region is complex due to the Orographic effect. The proximity of the high slope of mountain in the western side especially at the northern end of study area is beneficial for the places thereby getting torrential rain in the major rain giving months of South West Monsoon and eastern coast of the study area is in the regime of Tropical Cyclone and getting rainfall during the passage North East Monsoon through Bay of Bengal. Thus both sides of the Western Ghats are constantly influenced by Arabian sea and bay of Bengal and the ocean – land interaction is playing a major role in the weather and climate of the region as whole the high mountain ranges in Western Ghats also imparting its own influence on the on the climate system and modifies the weather pattern in different season. Western slope of this winding hill ranges receive an annual rainfall between 200 and 300 cm.

Spatial distribution of the temperature of the region shows that the northern part of the study area is cooler than the southern region generally. During South West Monsoon season western side is cooler than eastern side of the mountain ranges. Horizontal pressure variation of mean sea level pressure is less but along high terrain the variation is more.

All the rivers of peninsular India are originating from steep slope of Western Ghats. Tropical Evergreen Forest grows where the annual rain fall is more than 200 cm. There is luxuriant growth

of trees because of moist atmosphere. Even a small decline in the rain fall effects on natural vegetation. Tropical Semi- evergreen forest found in the regions marked by minor fluctuations in rain fall and dry deciduous forest found in rain shadow region of Western Ghats.

Western Ghats is one of the 25 global Hot Spots of biodiversity which bear the highest human density among them. These mountains along the west coast of peninsular India constitute unique biological region of the world. This region is undergoing rapid transformation. The deforestation rate is high and forests are being transformed in to the agricultural land especially mono cultural plantation. The hydro electric projects, mining and extraction of forest products are also altering the landscape. Even though the rates of changes are rapid, the exact magnitude and pattern is not well under stood. 'The dense forest was reduced by 19.5% and open forest decreased by 33.2%. Consequently degraded forest increased by 26.64% between 1973 and 1995 in the southern part of Western Ghats' (Jha and Dutt, 2000).

World Heritage Site

UNESCO's World Heritage Committee held at St Petersburg (Russia) in 1st July 2012 included 39 sites in Western Ghat as the world heritage site. The mountain system also considered as the biodiversity hot spot influenced by Indian monsoon. A team of UNESCO representatives visited India in October 2010 as part process of declaring as world heritage site as per the ten point criteria.

Cultural Criteria

1. To represent a masterpiece of human creative genius;
2. To exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
3. To bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
4. To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
5. To be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
6. To be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

Natural Criteria

7. To contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
8. To be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;
9. To be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

10. To contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation. (UNESCO, 2012, Operational guide line for the implementation of the World Heritage Sites)

Definition and Extent of Western Ghat

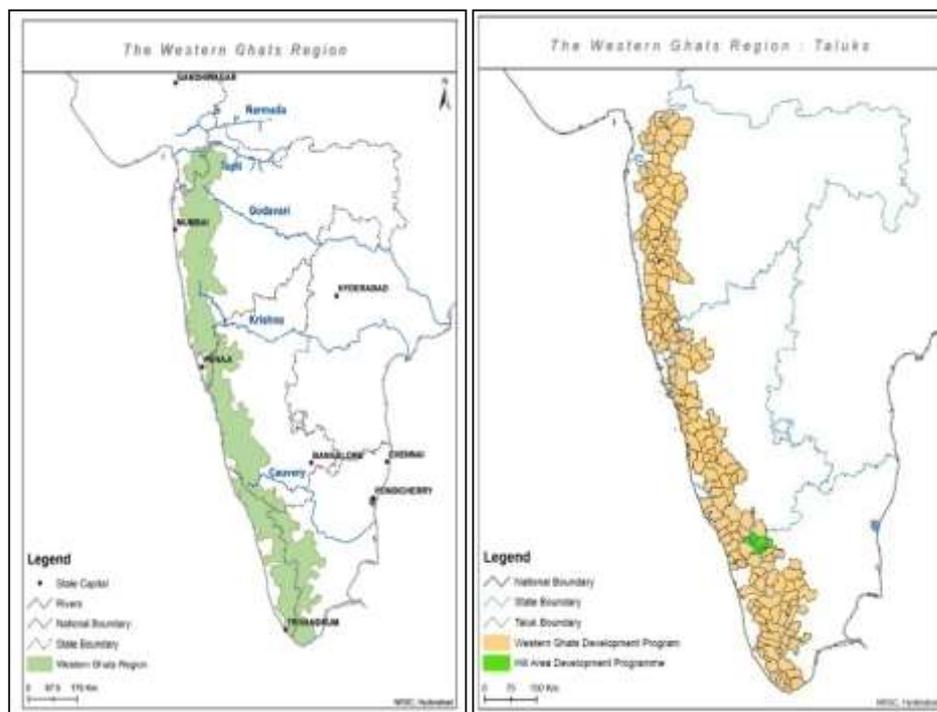
Working group defined Western Ghats occupies an area of 1, 64,280 km² between the latitudes 8° 19' N to 22° 26' N and longitudes 72° 55' E to 78° 11' E and a distance of 1500 km from Kanyakumari in south to Tapi river in the north and the width varies 10 km to 200 km and 188 Taluka comes under Western Ghats. Sixty percentages of Western Ghat region lies in Cultural Landscape-human dominated land use of settlements, agriculture plantations and 41 percentage of land area is Natural Landscape-biologically rich area. HLWG identified 37 percentages (60,000 km²) of Natural Landscape is highly biological rich area with low fragmentation of forest and low population density.

Table. 1.
Boundary and extension of Western Ghats

Latitudes	8°19' 8" N - 21°16'24" N
Longitudes	72° 56' 24" E - 78° 19' 40" E
Total area	129037 sq km
End-to-end length	1490 km
Min width	48 km
Max width	210 km

(Source: High Level Working Group Report)

Fig. 1: Western Ghat region and Taluk boundaries



(Source: High Level Working Group Report)

High

According to the Report of the WGEEP "The term Western Ghats refers to the practically unbroken hill chain (with the exception of the Palakkad Gap) or escarpment running roughly in a north-south direction, for about 1500 km parallel to the Arabian sea coast, from the river Tapi (about 21° 16' N) down to just short of Kanyakumari (about 80° 19' N) at the tip of the Indian peninsula. For our purposes we use the term Western Ghats in the broader sense to include the entire tract of hills from the Tapi to Kanyakumari". The committee defined 'Ghats' as forested area above 500 m in the eastern part which gently rises discretely from the Deccan plateau and 150 m in the western edge, falling more steeply down to the coastline as compared to the eastern side of the Ghats.

Mandates of Expert Committees

Western Ghats Ecology Expert Panel (WGEEP) functioned based on the following objective.

- Assess the current status of ecology of the Western Ghats region.
- Demarcate the areas within the Western Ghats Region which need to be notified as ecologically sensitive and to recommend for notification of such areas as ecologically sensitive zones under the Environment (Protection) Act, 1986
- Make recommendations for the conservation, protection and rejuvenation of the Western Ghats Region following a comprehensive consultation process involving people and Governments of all the concerned States.
- Recommend the modals for the establishment of Western Ghats Ecology Authority under the Environment (Protection) Act, 1986.

The HLWG worked on four fold foundation to delineate ecologically vulnerable areas as:

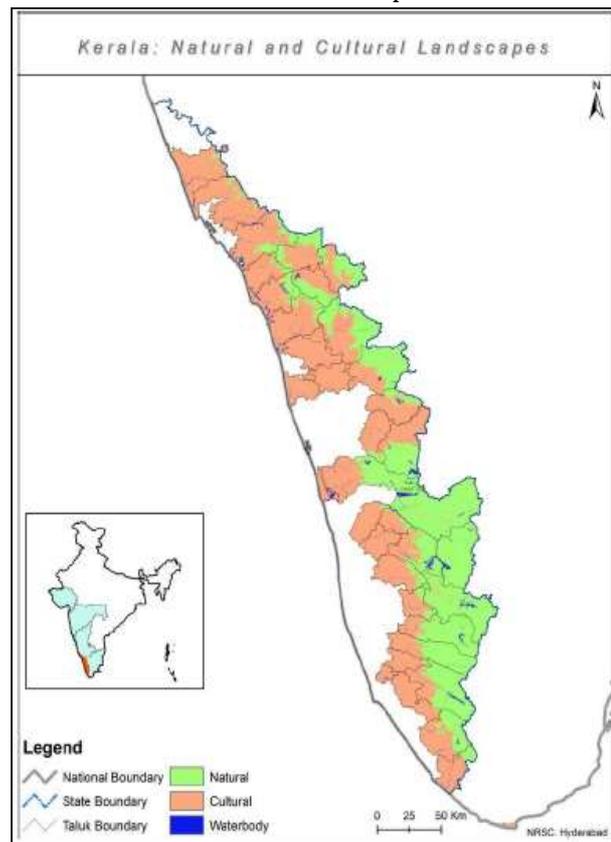
- Identifying ESAs and suggest for their notification across the Western Ghats
- Recommendations for the restriction or complete ban of some economic activities
- Conservation of biodiversity in Western Ghats
- Moving towards constitutional changes in central and state government relations that will support above

Data source and Methodology

The Working group suggested a holistic approach for sustainable development of the ecologically fragile areas. The working group followed geo spatial analysis with a fine resolution 24 m with village as units. Western Ghats categorized as cultural and natural landscape based on the parameters like forest and vegetation type, forest fragmentation, biological richness, protected areas, world heritage sites, wild animal corridor and population density. A layered approach used to make a zonal model of cultural and natural landscape of Western Ghat region.

Layered approaches were used by High Level Working Group started natural vegetation, major vegetation types generated using multi spectral remote sensing data (LISS III – 24.5 m, LISS IV – 5.4 m) and also for estimating biological richness and forest fragmentation. Biological richness and forest fragmentation layer further categorized low, medium, high. To make spatial layer of demographic aspects the data collected from 2001 census and combined with village boundaries. The areas having high biological richness, low forest fragmentation and population density less than 100 persons / km² marked as ecologically sensitive area. The Villages are taken as the unit (smallest administrative unit) for ESA and combined with population data. All Protected Areas and World Heritage Sites considered as ecologically sensitive, data set of Tiger corridors and Elephant corridors were used to over lay on ESA.

Fig. 2: Kerala- Natural and Cultural landscapes

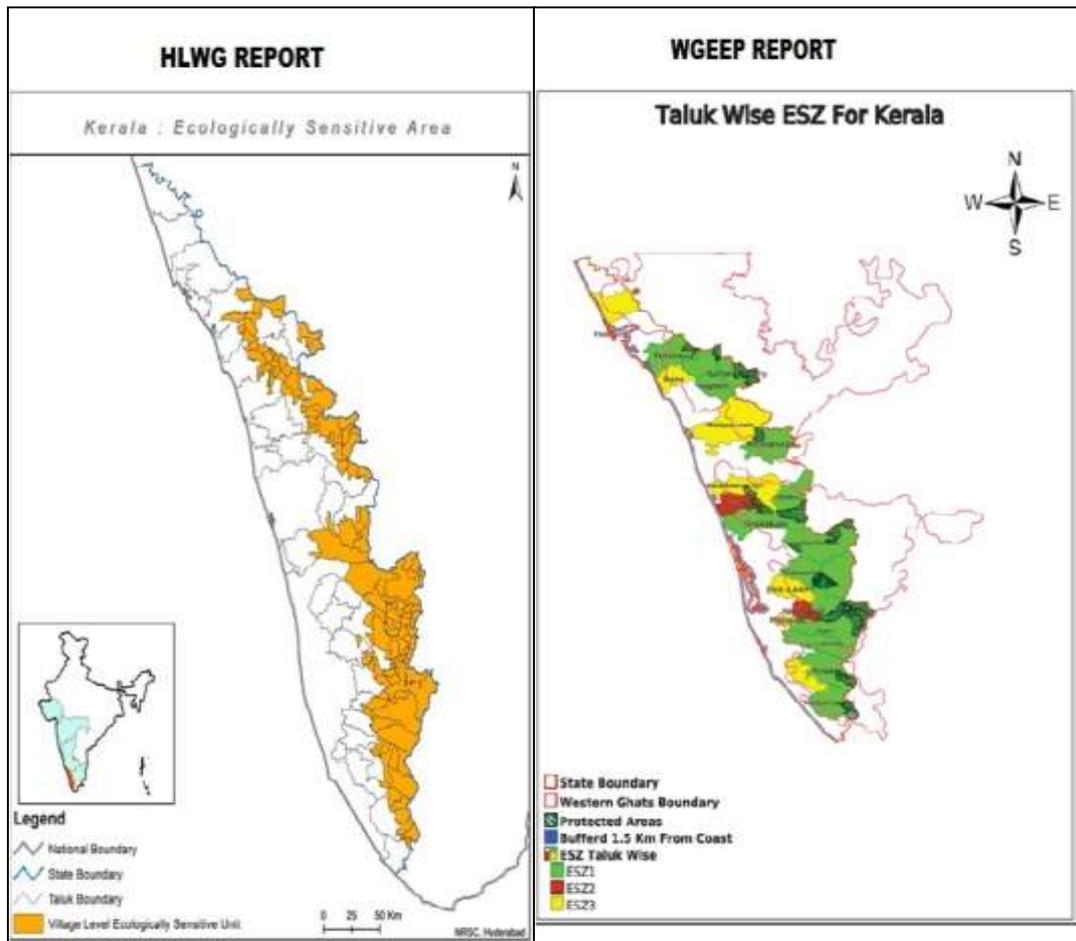


(Source: High Level

Working Group Report)

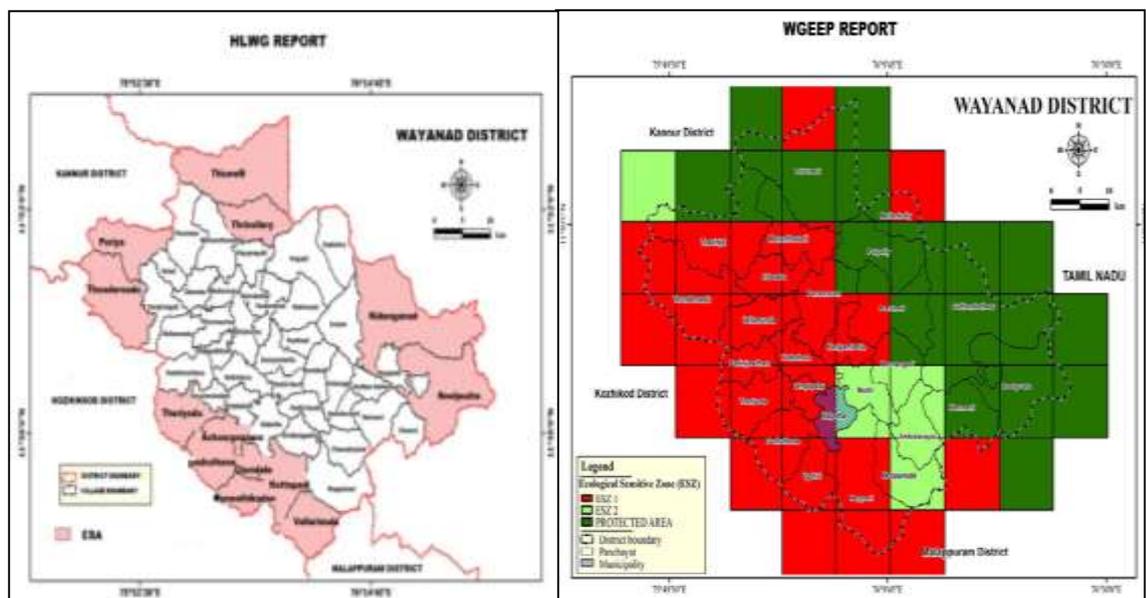
The Expert Panel recommended graded approach as the regions of highest sensitivity as ESA 1, regions of high sensitivity as ESA 2 and remaining moderate sensitive areas under ESA 3. They considered geo-climatic features, biological features and the social aspects of the area. Biological attribute are bio diversity richness (richness in diversity in all taxonomic group), Rarity of species (rarity of population size and distribution), habitat richness (spatial heterogeneity), total biomass productivity and cultural and historical value of the area. Geo climatic attribute included topographic features like slope, altitude, aspect and precipitation (number of rainy days) under climatic features. The panel adopted base line from Proneb Sen committee report in 2000. The panel used 5'×5' grids based study for mapping ESA in whole Western Ghat region based on availability of data and vastness of the area which is suited to include whole area. Different attribute are graded normally 1 to 10 based on their significance and consecutive grids demarcated as ESA.

Fig. 3: Comparison map of ESA in Kerala



(Source: HLWG and WGEEP Reports)

Fig. 4: Comparison map of ESA in Wayanad district of Kerala



(Source: HLWG and WGEEP Reports)

Recommendations of WGEEG Report

Madav Gadgil is an ecologists and their report also reflected that the report giving more important environment and suggested strict regulation to the developmental activities.

- The Western Ghats Ecology Expert Panel (WGEEP) demarked entire Western Ghat as an Ecologically Sensitive Area (ESA).
- The panel divides 142 Taluks in the Western Ghats boundary into Ecologically Sensitive Zones (ESZ) 1, 2 and 3 based priority of conservation.
- ESZ-1 being of high priority regions, all developmental activities are restricted.
- Gadgil report recommended that “no new dams based on large-scale storage be permitted in Ecologically Sensitive Zone 1”. It is against the implementation of new hydel power projects like Athirappilly of Kerala and Gundia of Karnataka as they fall in Ecologically Sensitive Zone 1.
- Gadgil Committee report suggests a bottom to top approach from Gramma Saba, it also asked for decentralization and more powers to local authorities.
- The commission recommended constitution of a Western Ghats Ecology Authority (WGEA), as a statutory authority under the MoEF.

Recommendations of HLWG Report

- The report included only 37% (i.e. 60,000 sq. km.) of the total area Western Ghat in ESA.
- The Working Group suggested to restrict the mining, quarrying and sand mining completely in ESA.
- The report distinguished between cultural landscape which is occupied human settlements, agricultural fields and plantations etc. and Natural Landscape as forested area.
- As per the committee report ‘current mining areas in the ESA should be phased out within the next five years, or at the time of expiry of mining lease, whichever is earlier’.
- In the Western Ghat, No thermal power should be allowed and hydropower projects be allowed only after detailed impact assessment study.
- Red industries which are highly polluting be strictly banned in these areas.
- Report excluded (Cultural Landscape) the inhabited regions and plantations from the ecologically sensitive areas (ESAs).

Critical Evaluation of WGEEP Report

- The major criticism of Gadgil Committee report is that it was more environment-friendly and not considers the ground realities.
- Recommendations were impractical to implement because it is consider entire western Ghats region as environmentally sensitive were discard the concentration population and economic activities of people
- Gadgil report asked to stop new proposed hydro electric project, which will hamper the development of power sector. It is also against construction of dam without considering growing energy need and potentiality of hydro electricity in the Western Ghats region.

- The report doesn't give solution for revenue losses due to implementation of its recommendations.
- The report created fear among the farmers that if the recommendations are implemented they will lose their livelihood.

Critical Evaluation of HLWG Report

- The methodology adopted by Kasturirangan were criticized because the use of remote sensing and aerial survey techniques for zonal demarcation of land in Western Ghats without examining the ground reality.
- Demarcation of Panchayath as Cultural and Natural landscapes is not a proper method as both areas having population clustering and tribal people living inside the forest and their livelihood is much adapted to nature.
- The report suggested giving the power to bureaucrats and forest officials and not with Grama Saba to take decision for the developmental activities on the Western Ghat region.
- As per the report, many villages by using remote sensing technology green wash areas considered as forest and Ecologically Sensitive Areas (ESA) though there is only rubber plantations and no forest land.
- Kasturirangan report left out many Ecologically Sensitive Areas as the village Mananthavady in Wayanad district of Kerala has been included in the WGEEP report as 40% of the area under protected area and the rest 60% in ESZ1. But when the HLWG report was published the area was exclude from ESZ.

Conclusion

By apprising reports on Western Ghat, their objectives and insight unquestionable and no one can disagree with we need sustainable development in Western Ghat but conservation without social concern is not possible as it is the biodiversity hot spot with high population concentration. The reports highlight urgent need of thoughtful conservation and protection of Western Ghat but thoughtless conservation will bring difficulties in life and livelihood of people. There for a meaningful participation of local communities and social forestry is more significant than autocratic approach in terms of conservation and development. The conservation of forest is always versus developments in terms of agricultural production, industrialization, urbanization, residential land use, mining, production of raw materials and tourism. Thus the case by case analysis of anthropogenic activities like expansion of plantation agriculture, conversion of forest in to other plantation, mining, tourism and urbanization is needed to prepare and suggest developmental plans and programs with a perception of environmental sustainability of Western Ghats.

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