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Planning For Ecotourism in Sahyadri Hills Region: A Case of Chinchli & Mahardar, Dang District, Gujarat

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Abstract- One of the major revenue earners in tourism is tourism in hilly regions and areas. As it offers major lodestones like climate, clean air, unique landscapes and wildlife, scenic beauty, local culture, history and heritage and also the opportunity to experience snow and participate in snow-based or nature-related activities and sports. The Chinchli and Mahardar region of Dang offers some of the rarest 'tourism' products of nature with a wide ecological range and diversity. Apart from the many-splendored natural attractions and scenic beauty, the religious and socio-cultural dimensions of the tourist resource assume significance in the context of the hill districts lying in the lap of the Dang region. The paper is aimed at identifying the potential of Chinchli and Mahardar region in context of hill tourism as well as to determining future strategic options for effective management of its destinations for sustainable development. Data for this study was drawn from a review of secondary sources, consisting primarily of official government documents, several research articles, tourism websites and media reports in this context. Situation analysis of collected data was undertaken through SWOT.

Keywords- Dang, Eco tourism, Chinchli, Mahardar.

I. INTRODUCTION

Ecotourism attracts people who wish to interact with the environment and, in varying degrees, develop their knowledge, awareness, and appreciation of it. The Ecotourism Society gives the principles and guidelines of ecotourism. These are following as: Minimize visitor's impacts on the on the environment by offering literature, briefing, leading by example, and taking corrective actions. Minimize traveller impact on cultures by offering literature, briefings, leading by example, and taking corrective actions. Use adequate leadership, and maintain small enough groups to ensure minimum group impact on destination.

Avoid areas that are under-managed and over-visited. Ensure managers, staff and contract employees know and participate in all aspects of company policy to prevent impacts on the environment and local cultures. Give managers, staff and contact employees access to programmers that will upgrade their ability to communicate with and manage clients in sensitive natural and cultural settings. Be a contributor to the conservation of the region being visited.

Provide competitive, local employment in all aspect of business operation. "Planning for ecotourism in Sahyadri hills region: a case of Chinchli & Mahardar, Dang district, Gujrat" Offer site-sensitive accommodations that are not wasteful of local resources or destructive to the environment, which provide ample opportunity for learning about the environment and sensitive interchange with local communities Focuses on personally experiencing natural areas in ways that led to greater understanding and appreciation.

1. Environmental Effects of Ecotourism:
The impacts of ecotourism depend on what ecotourism is. The critical issue is that ecotourism should involve deliberates steps to minimize impacts, through the choice of activities, equipment, location and timing, group size, education and training, and operational environmental management. However, very little is known about impacts such as noise disturbance, soil and water-borne pathogens, and interference with plant and animal population dynamics and genetics, which are likely to have far greater ecological significance.

Some important environmental effects of ecotourism are following as: Crushing or clearance of vegetation, Soil modification, Introduction of weeds and pathogens, Water pollution from human waste, Air pollution from generator exhausts, noise from machinery, vehicles, and voices, Visual impacts and Disturbance to wildlife through all of the above, and through food scraps and litter, etc.

II. PROFILE OF DANG DISTRICT

Dandakaranya of epic Ramayana was nothing but The Dang District of Gujarat State. Total 311 villages are covered by Dang. Dang is a mountain range in western part on India which is inhabited by tribals. It is bounded in

the North by Surat and Dhule district of Maharashtra State, in the east by Nasik district of Maharashtra State and west by Valsad district. As per census 2011, the area covered by the district is 1,764 sq. km. The rank of this district is 25th in area in the State.

Being a part of the Eastern Hilly Region and on the basis of physiography climate, geology, soils and natural vegetation; is subdivided into two sub-micro regions, namely, Lower Dang and Upper Dang. Physiography of Lower Dang region is characterized by low hills with an altitude ranging from 560 and 590 meters above M.S.L. The entire water of this region is drained by Gira, Purna, Khapri and Ambika rivers with their tributaries.

The region has a thick vegetation cover. Physiography of Upper Dang region is a hilly tract having thick forest cover. The elevation of this region varies between 675 and 1290 meters above M.S.L. The main rivers of this region are black rock-outcrops, shallow black, brown and alluvial soils of recent origin.

III. ECOLOGY ANALYSIS OF DANG DISTRICT

1. Region map showing settlements, linkages:

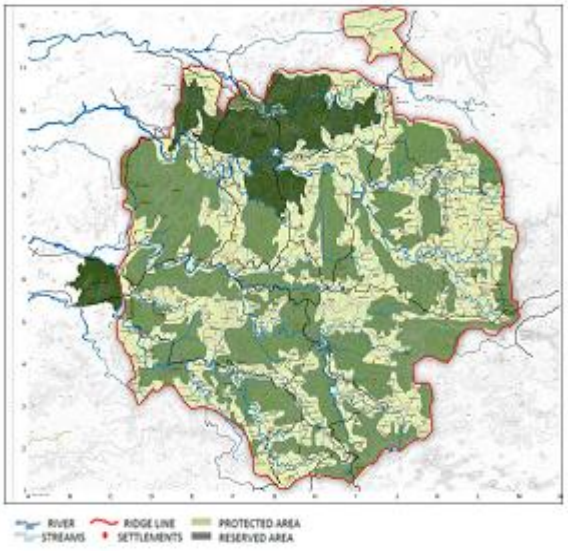

Fig 1. Map 1. shows the regional map showing settlements & linkages.

Source: Generated from district resource map

The region's ecological borders are the ridge on the north and west, and the steep sloping highland on the south and west, which also serves as a state boundary. The entire territory has been separated into two types of forest for administrative purposes:

Reserved forest (57 %) ii) Protected Forest (43 %).

2. Elevation map:

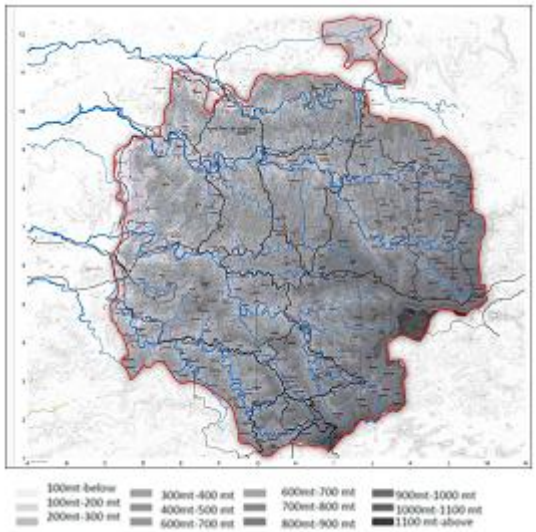

Fig 2. Map 2. shows the Elevation map

Source: Generated from district resource map

The general geography is harsh, with dissected terrain, high rising hills, flat-topped peaks, and severely dissected intervening valleys. The research area has an altitude range of roughly 100 mt to 1000 mt, with the majority of the area falling between 200 and 600 mt.

3. Hydrology and catchment area of four rivers:

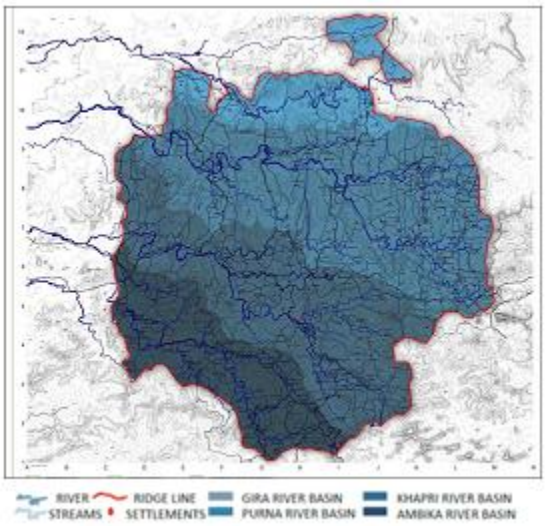

Fig 3. Map 3. shows the Hydrology and catchment area of four rivers.
Source: Generated from district resource map

The entire region is distinctly divided into four main valleys of the Gira, the Purna, the Khapri and the Ambika rivers. The Ambika and the Purna are important rivers which carry their water from east to west and meet the Arabian sea. Region has dendritic drainage pattern. The

rivers have a high density of drainage and steeper gradient resulting in quick runoff during monsoon.

4. Geology and geomorphology of the region:

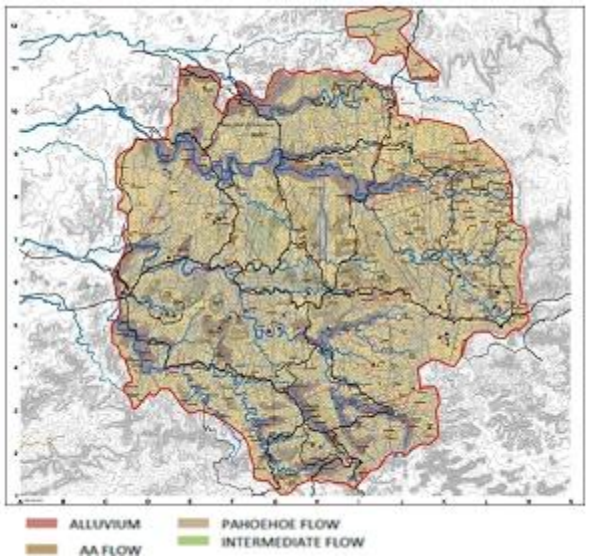

Fig 4. Map 4. Shows the showing geology and geomorphology of the region.

Source: Generated from district resource map

The Deccan trap Basalt dominates the geology of Dang district. Basalt is a low-quality aquifer. The water quality is excellent. The flows are mainly horizontal, although there are some areas with a northerly tilt of up to 70 degrees.

5. Land use of region:

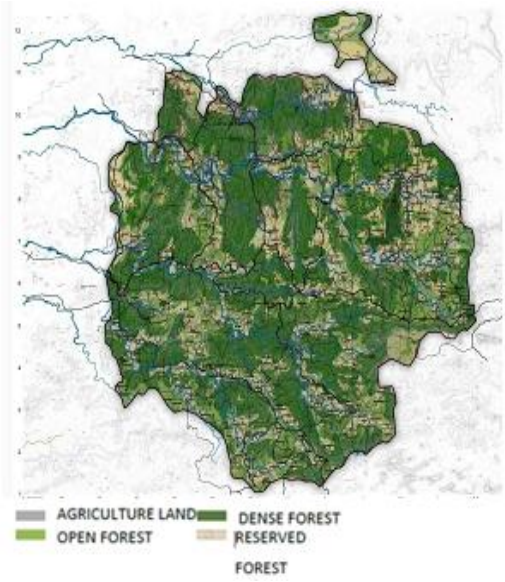

Fig 5. Map 5. shows the Land use of region.

Source: Generated from district resource map

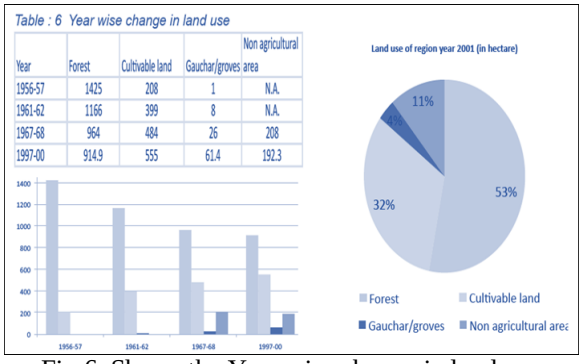

Table : 6 Year wise change in land use

Year	Forest	Cultivable land	Gauchar/groves	Non agricultural area
1956-57	1425	208	1	N.A.
1961-62	1166	399	8	N.A.
1967-68	964	484	26	208
1997-00	914.9	555	61.4	192.3

Fig 6. Shows the Year wise change in land use
Source: Generated from district resource map

6. Climate:

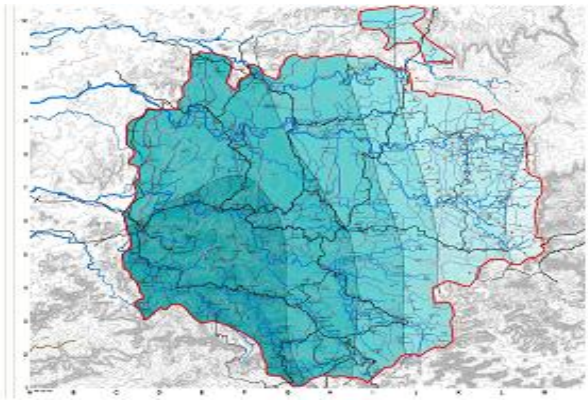

Fig 7. Map 6. Shows the Climate.
Source: Generated from district resource map.

Except during the monsoon season, Dang's climate is normally mild due to its high geography. Winter is from October to February, Summer is from March to mid-June, and Monsoon is from June to September. Temperature: From the second part of February, the temperature begins to rise. The warmest month is May, with an average daily maximum temperature of around 40°C.

7. Average Temperature:

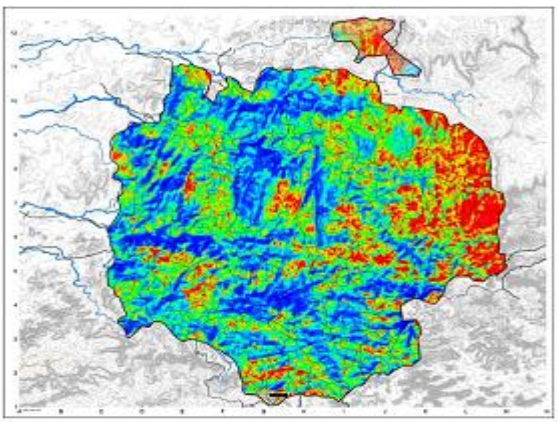

Fig 8. Map 7. shows the Monthly Average Temperature
Source: Generated from district resource map.

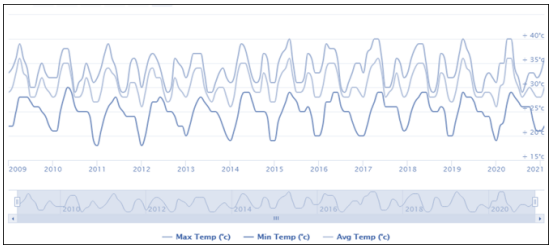

Fig 9. Shows the Average temperature.
Source: Generated from district resource map

8. Soil map:

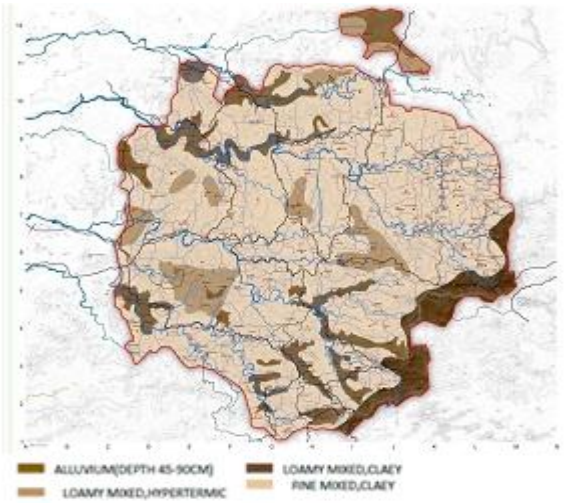

Fig 10. Map 8. shows the Soil map.
Source: Generated from district resource map.

DANG AHWA Deep black with few patches of coastal alluvial, laterite and medium black soils. Due to rolling topography and the varying composition of parent rock, soils differ within narrow limits. Loamy clay, boulder loam, murdrum loam and murdrum soils are commonly met with, depending upon disintegration of rock and extent of erosion.

9. Slope Analysis:

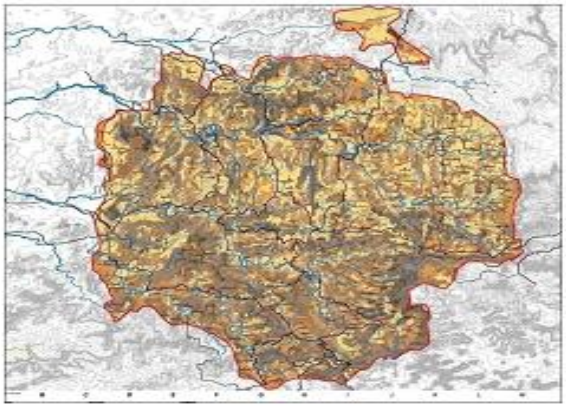

Fig 11. Map 9. shows the Soil map.
Source: Generated from district resource map.

The majority of the slopes on the hilly course are extremely steep, ranging from 33% to 35%, which is also the soil's angle of repose. Slopes greater than 33% would necessitate soil conservation measures to minimize water erosion. Depleting vegetation threatens existing forest cover if the soil cover is degraded.

IV. PLANNING PROPOSAL

1. Location Map

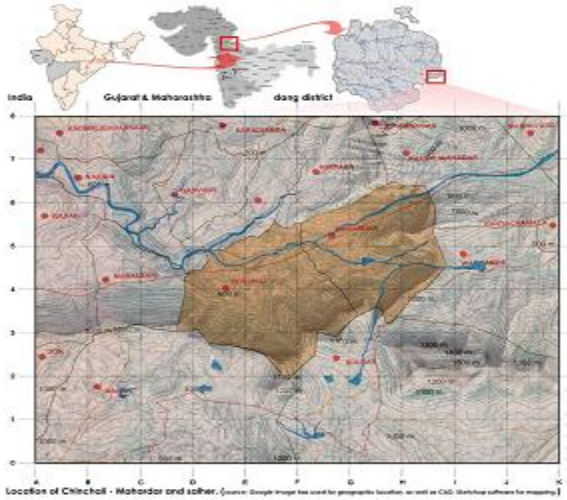

Fig 12. Map 10 shows the Location Map.
Source: Generated by the Author.

Mahardar-chinchli, Dang District Located at the Border of North Maharashtra nearby Saputara forest it is one of the beautiful hill stations. climate is hot humid in summer and cold in winter in having maximum Rainfall The summer season start from Early February. The winter season start from October There is no rain fall during November to May some time Occasional rain fall may be possible in between this period. Ahwa is the Headquarter of Dang district another town is Mahai, Maheshkatri, Sober, Server, Purna, Waghai, and Samgahan.

2. Eco-tourism Development Site:

Fig 13. Map 11 shows the Site Development Area.
Source: Generated by the Author.

There are zones which have the natural wilderness character because of a lack of a formal planning or definite landscape intent during the formative stages of this hill station villages, interventions must strive to maintain this character, and not of an imposed formal landscape. Land uses are scattered and consolidating them may help design a definitive image for thereby reinforce a landscape character for the respective typologies.

3. Proposal – 1:
Zone-1 Development plan for Eco-Dham
(Wellness and Research Centre)

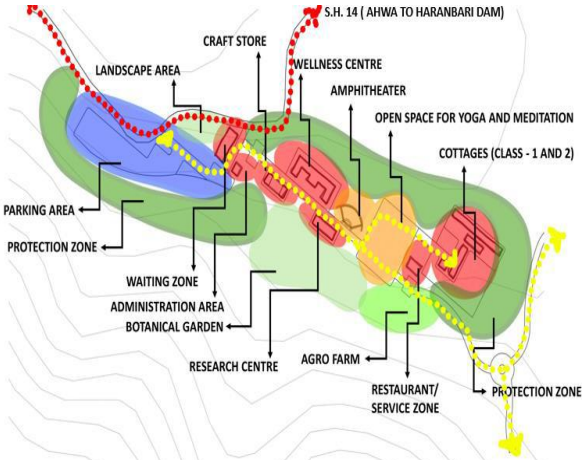

Fig 14. Map 12. shows the Location Map.
Source: Generated by the Author

Fig 15. (a) Pathway (b) Gazebo (c) Sitting along Pathway (d) Pathway.
Source: Generated by the Author

Identifying and selecting suitable areas which can be used for medical therapy centre and Forest research institute.

4. Proposal – 2:
Zone-2 Development plan for Eco-Resort

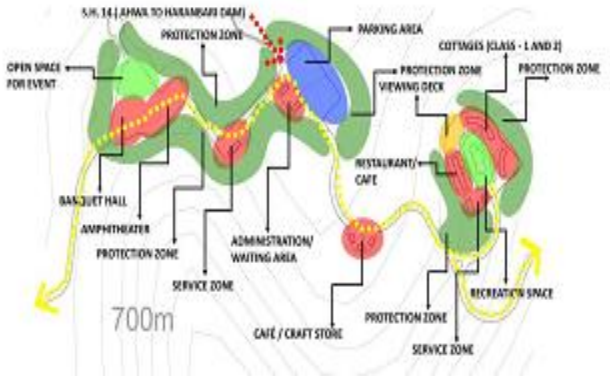

Fig 16. Map 13. shows the Location Map.
Source: Generated by the Author

Fig 17. (a) Deck (b) Open Meditation Area (c) River Front (d) Connecting Internal Pathways.
Source: Generated by the Author

Identifying and selecting suitable areas which can be used for Wildlife Sighting, Trekking, Camping.

5. Proposal – 3:
Zone-3 Development plan for Eco-Manoranjan (Adventure Park)

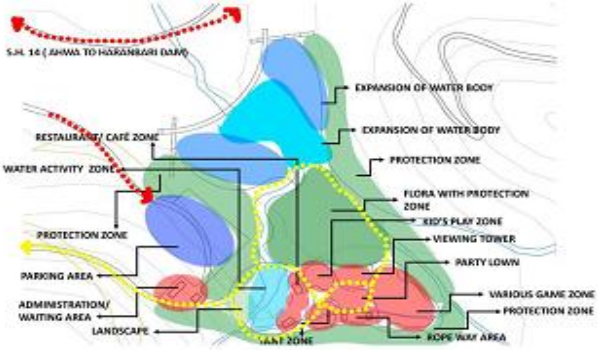

Fig 18. Map 14. shows the Location Map
Source: Generated by the Author

Fig 19. (a) Viewing Deck (b) Climbing (c) & (f) Rope Sliding (d) & (e) Walkway Bridge
Source: Google Images

Natural resources spread over a widely undulating terrain can be a heaven for adventure sports.

6. Scope of the Development:
If flow of tourists to these destinations is found to be sustained at high rate, it may in future open possibilities of strengthening and expansion of infrastructure and increasing the capacity for handling larger number of tourists. Such possibilities include increasing the number of tents for camping activity, increasing the number of boating activities, introduction of some of the adventure sports which doesn't create disturbance for the wildlife etc. Investment on these facilities can be considered after taking into account the consistently high flow of tourists without compromising the environmental sustainability of the site.

V. CONCLUSION

The objective of the present paper was to study the ecotourism through an environment perspective and rural economic development which required a literature review of concepts that would allow how ecotourism development could incorporate an environment perspective and which environment features would drive the ecotourism of a rural system. The paper had adopted methodology how different parameters can be incorporated in achieving ecotourism.

The selection of these elements was performed considering the environmental dynamics and environmental innovation concepts and the rural development associated with the present scenario and habitants. This untouched should be governed in a well-planned manner for the conservation of natural ecological value and to provide basic infrastructure facilities at the site. Improper management and depletion of water bodies to land encroachment on boundaries of lakes and rivers lead to water drain off issues. Water scarcity, lack of rainwater catchment and the stagnation of surface water run-off are other factors that are being affected by depletion of surface water bodies. Therefore, preventive measures and conservative policies are to be developed in urban planning for proper development without any impacts on the environment.

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