



FORWARD TOGETHER

November 13–14, 2018

San Francisco

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Proceedings of the 2018 US/ICOMOS Symposium

Forward Together: A Culture-Nature Journey Towards More Effective Conservation in a Changing World

November 13-14, 2018

The Presidio

San Francisco, California

This symposium was convened to share insights on how understanding culture-nature interlinkages on many landscapes and waterscapes can shape more effective and sustainable conservation.

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Editors: Nora Mitchell, Archer St. Clair, Jessica Brown, Brenda Barrett, and Anabelle Rodríguez

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2018 US/ICOMOS Symposium

Forward Together: A Culture-Nature Journey Towards More Effective Conservation in a Changing World
13-14 November 2018, The Presidio, San Francisco, California

Landscape Approach Addressing Alternative Realities of a Rural Realm

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Abstract

The rural landscapes of India are lands of stories, of people and their associations to a deep-rooted culture that is closely knit to their natural settings, lending them their complex identity and providing the potential for allowing multidisciplinary research. Dahanu in rural Maharashtra is widely known as the fruit bowl of the Konkan region. Tucked between a range of twelve mountains of the Western Ghats to the east and the Arabian Sea to west, the regional setting makes this place unique, giving it an identity that has groomed different tribes, a large fishing and a farming community occupying specific niches and related occupations. Its customary ways of life are strongly rooted to the cultural wisdom of the local tribes and agrarians. Steeped in its history is also the story of these tribes, the once keepers of the forest and its rich resources, and how external influences led them to become the now workers surviving in a meagre way. Owing to the national notification of the region as an ecologically sensitive zone, its natural settings and agricultural lands are protected from being taken over by large scale industrialization. However the communities here live in an ironic reality, where the same laws which had sheltered their lands have failed to provide alternative ways of development corresponding to their modern economic aspirations. The paper looks at outlining landscape strategies with a strong empathy towards ecology, culture and community to generate innovative and sustainable methods of development that are both economically and ecologically viable.

Keywords

Dahanu, Rural Landscape, Rural cultural context, Ecologically Sensitive Zone, Nature culture trail, Haat

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Landscape Approach addressing Alternative Realities of a Rural Realm²

Introduction

The aim of the research is to highlight the importance of landscape approaches addressing rural economic development and more specifically community participated agricultural and socio-forestry based developments. The paper proceeds to present a methodological framework for deriving landscape guidelines and applying them to an Indian rural context, layered with diverse complexities in terms of its natural and cultural fabric.

In order to accomplish the aim, the process adopted was:

- a. A detailed analysis of natural layers of the context was conducted.
- b. Field based survey and recording of physical and intangible values of the context was conducted.
- c. Landscape inferences were drawn and strategies and potentials for landscape interventions were laid out.
- d. A series of landscape inserts connected by a circuit of nature –culture trails concluded to a proposed zoning at the regional scale.
- e. Detailed landscape design guidelines for selected inserts were carried out.

The results were a set of principle landscape projects specific to a chosen site within the large context, which referenced certain basic categories such as community based farming, joint socio-forestry, culture awareness centers, recreational projects and village commons. These inserts addressed aspects of landscape planning and management that led to spatial constructs derived from both the desirability of the immediate landscape and its stakeholders and its integration to the surrounding landscape of the larger rural cultural context. The rural cultural context selected was a region in the Dahanu Taluka. Dahanu is a taluka in Thane District of the state of

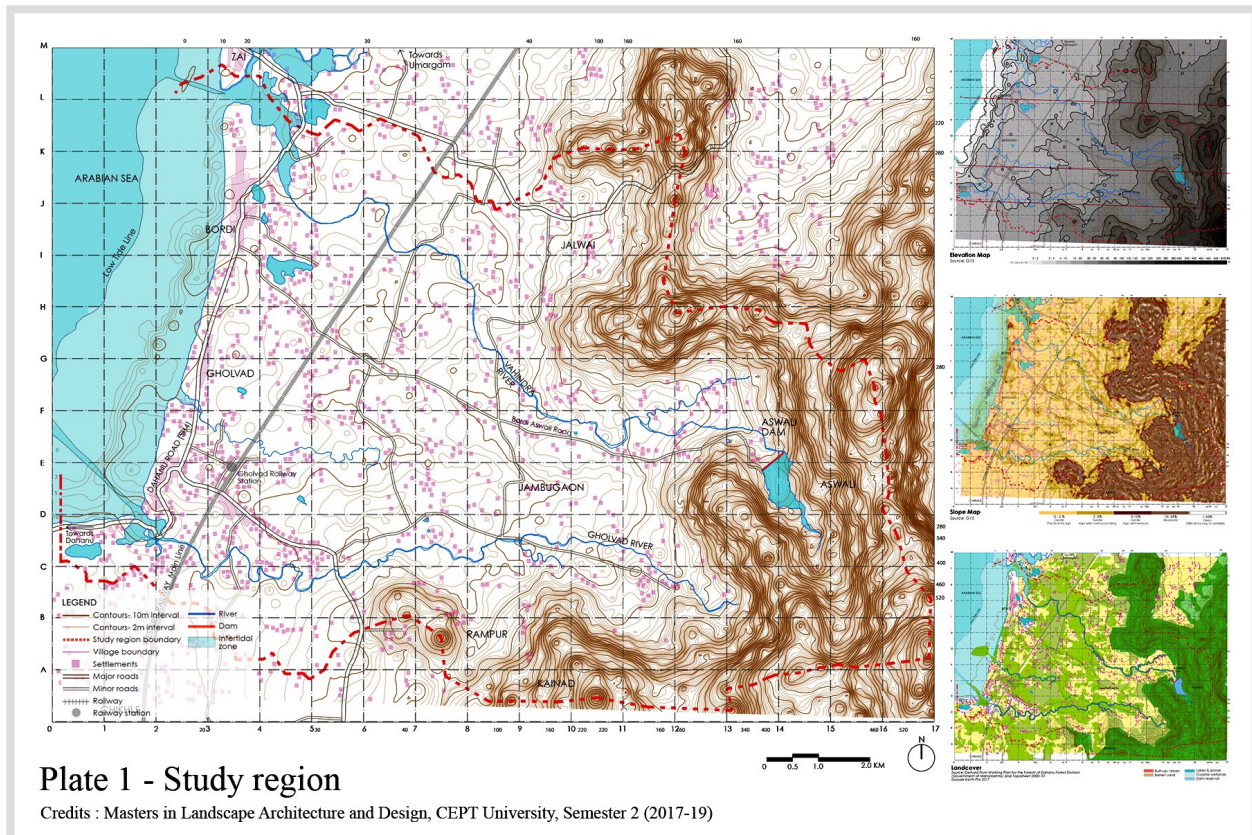
² Excerpts taken from Landscape Design Studio, Semester II, May 2018; 2017-19 batch group work, Masters in Landscape Architecture and Design, Faculty of Architecture, CEPT University, Ahmedabad. Guided by Authors.

Maharashtra. Squeezed between Mumbai and its sprawling industries to the south and the numerous industrial zones of Gujarat state to the north, Dahanu is like an oasis. It is one of the last green belts left in the state of Maharashtra, and the only remaining habitat of the indigenous, unassimilated Warli tribe.

Tucked between a range of twelve mountains of the Western Ghats (Sahyadri range) to the east and the Arabian Sea to west, the regional setting makes this place unique, giving it an identity that has groomed different tribes, a large fishing and a farming community occupying specific niches and related occupations. Dahanu Taluka was declared an Ecologically Sensitive Area (ESA) in 1991, protecting it from unregulated industrialization. Dahanu's coasts were classified under the stringent (Coastal Regulation Zones) CRZ-1 zone which does not permit any development within 500m from high tide line. The notification ensured the region survived as a major green lung. Dahanu is known as the 'Fruit & food bowl' of the region. With extensive chikoo (Sapota) orchards in the region, the fruit has become the identity of the region. The annual Chikoo Fest is a cultural festival that the entire region is involved in with great fervor, drawing tourists from neighboring places, especially Mumbai & Valsad.

This region has rich diverse species, varying crops and rich indigenous culture. Throughout the region we get the glimpse of various fruit orchards, paddy fields, vegetable farms, Warli settlements (padas), Warli house gardens, their culture, forest cover, small rivers and picturesque mountain views near the foot hills. The selected region for extensive study lies between two rivers – Vahindra and Gholvad towards north and south, which is approximately a stretch of 132 sq. km.

About the region



The climate is characterized by high humidity nearly all the year round, an oppressive summer season, and well-distributed heavy rainfall during the south-west monsoon season. The annual rainfall is 1843 mm, average humidity is 76%, and the temperature ranges between 30.4°C to 22.3°C. Topographically, the region is divided into bandarpatti (Bandar –coastal, patti - belt) and junglepatti (jungle –forest, patti –belt), the local names for the coastal area and the forest belt respectively. The bandarpatti (the coastal belt) is 8-12 km wide comprising of lowlands and flats extending from the sea coast to the railway line situated at the foot of the Sahyadri range. The junglepatti (forest belt) which is to the east of the railway line is a belt of approximately 20-25 km that runs parallel to the coast. The cross sectional distance along the east to west direction shows a variation in altitude ranging from 1200 m to 0 m above mean sea level. The general slope is from east to west of the region, with the highest elevation being seen in the South-East of the study region. The gentle slopes are observed to have agriculture (fruit orchards, paddy etc.) while the steep slopes are covered with forests.

The chikoo (Sapota) fruits throughout the year. One of the reasons is the topography and shape of Sahyadri hills which create a microclimate that results in an increased humidity and rainfall. Areas near coastline are slightly saline. It has also been observed that there is slight salinity in areas with dense settlements. Also the soil and ground water availability provides a good condition for vegetation growth which is higher in the plains than in the mountainous terrain.

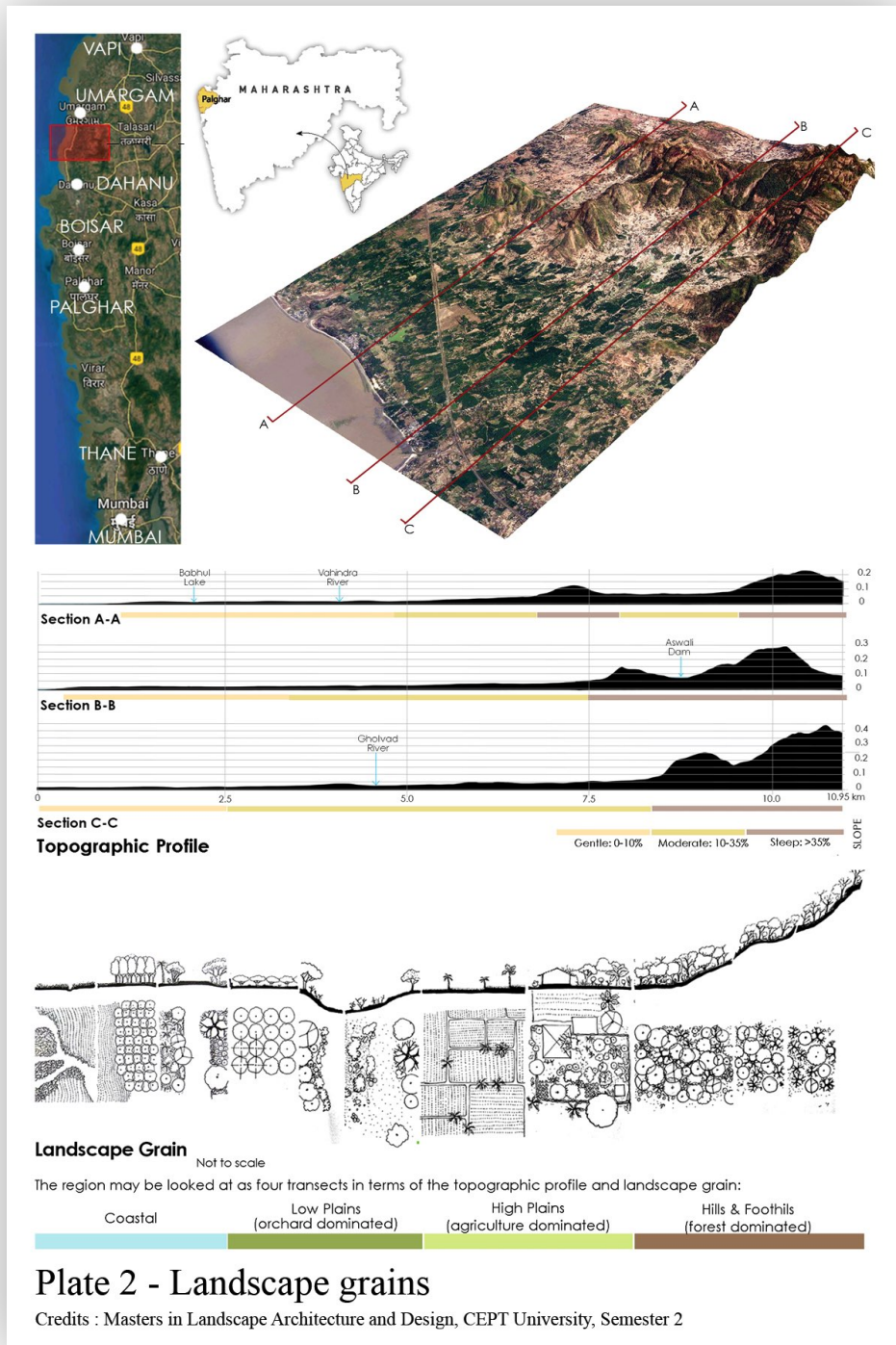




Plate 3 - Panoramic views of landscape grains

Credits : Masters in Landscape Architecture and Design, CEPT University, Semester 2 (2017-19)

Agriculture practices are dependent on soil type, depth, and drainage patterns. The soil depth generally decreases from the coast towards the hills. The loamy soil of the plains allows for fruit orchards. Furthermore, the soil is calcareous; the calcium content hence provides suitable conditions for chikoo which is also tolerant of salinity. Higher plains also have shallow soil and a condition of severe erosion with very shallow clayey soil where mostly paddy fields and chikoo orchards are located. Hills have very shallow soil, moderately well drained with moderate erosion, due to which the area is mostly occupied by forests.

The context

This rural landscape is the lung of the surrounding highly polluted and urbanized cities of Maharashtra and Gujarat. This area is thus particularly important by virtue of its location, and its rich natural resource base needs protection. Dahanu has 46% area as forest. Also, 65% of the

population of the Taluka consists of the indigenous Warli tribal community, who live in small hamlets dotting the foothills of the Sahyadri ranges by the periphery of the forests. Most practice subsistence paddy cultivation now and are increasingly looking to towns for supporting incomes. Moreover, their close associations with the forest as its beneficiaries and stewards (as reflected in their folk paintings and the many religious rituals) are slowly disappearing. The midlands are covered with chikoo orchards owned by the Wadwals and Parsi community who are the recent land owners. They are active participants in the people's movement to conserve the natural resources in this region. The entire coastal belt with its rich natural resources, wetlands, mangroves and river deltas, forms a lucrative fishing area which is home to the ethnic fishing community of Kolis. Fishing is an important economic activity of the region.

Challenges

A. Deprived economic conditions

Though Dahanu is declared as an ESZ, the same laws which have sheltered their lands have failed to provide alternative ways of development corresponding to their modern economic aspirations.

- a. In spite of a rich history of Warlis being the true owners of the lands, they are today either marginal farmers or work as daily wage labourers in orchards or on boats, struggling to live off their slowly eroding forests. Many migrate for several months of the year to nearby places for work. 69% of its population is uneducated and is also below the poverty line (BPL). There has been a recent eagerness in the community to get the children educated which has come as a resultant of the rigorous efforts from many NGOs working in the region. This informed younger generation is capable of re-establishing the economic state of the community provided they get the right training and opportunities.
- b. The environmental regime, along with civil society action, was able to prevent the setting up of large industries that would have destroyed the rich horticultural resources and the coastal settings and thereby its respective communities who are struggling to live off the natural resources. Changing aspirations and a

consumerist economy have made the traditional occupations a last resort for the younger generations. Hence the bigger challenge is to create sustainable and economically viable alternatives which are derived from the present cultural systems, to meet a rapidly changing economy and a constantly evolving community.

B. Degradation of forests

The nature of association the people had towards forests has decreased day by day and the aspirations of these communities to live a modern day urban life is been clearly reflected in the many surveys that were conducted in the region. The negligence towards the forests has led to degradation of large patches of forests mainly due to felling of trees, encroachment for agriculture and grazing. This has resulted in

- a. Degradation of forest fringes.
- b. Vegetation loss in large patches especially near coastal areas comprising mainly of scrublands. These patches have in turn given rise to many issues such as soil erosion, loss of top soil, surface runoff, and low soil moisture.

C. Decline in agriculture

- a. There is a loss of traditional crop varieties as they are not economically profitable.
- b. Farming is done for sustenance only.
- c. There is less income from farming as it is rain fed. Due to less advancement in techniques the tribal are unaware of modern methods of tapping water for farming.

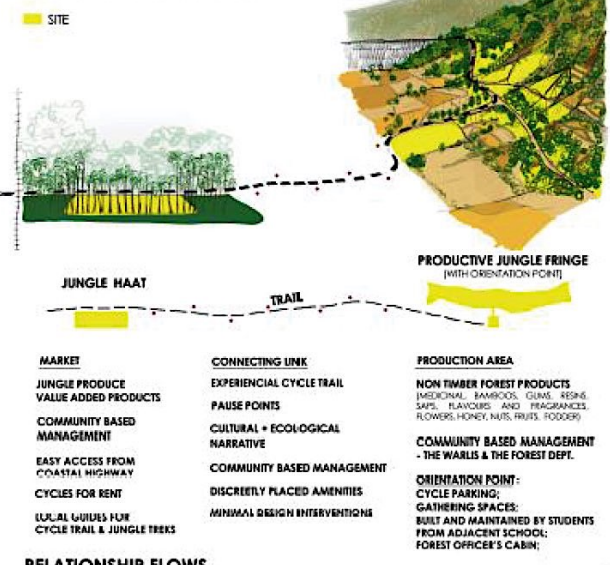
D. Diminishing cultural values and associations

- a. Culture of any community can be perceived by the way of living, way of thinking, way of worship and art form derived from the natural systems and cycles of the region. The cultural identities developed by the community over time are now on the verge of being lost.

However, because of the constantly changing economy, there is a responsibility to innovate and ensure that horticulture and associated activities can bring about increased incomes while still protecting the environment. The idea is to identify the challenges and develop them to create opportunities that will bring ecological stability and economical development, while engaging tourists to enhance tourist potential, build the economy and revive culture.



A SYSTEM OF 3 COMPONENTS



RELATIONSHIP FLOWS

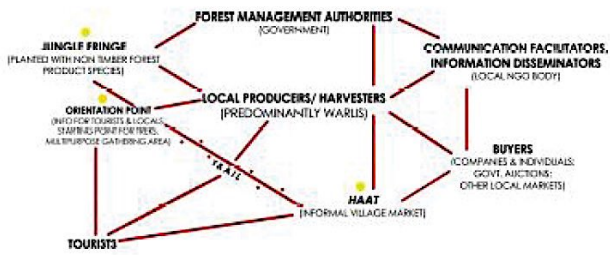


Plate 4 - Strengthening the fabric - patches and trails

Credits : Chetna Singh, Masters in Landscape Architecture and Design, CEPT University, Semester 2 (2017-19)

Strengthening the fabric: through patches, trails and centers

The landscape master plan for improving the ecological and economic state of this rural context looks at an approach which consists of a set of interventions in the form of a three point system consisting of patches, trails and centers. The restorative landscape patches, are in themselves systems for upgrading existing natural conditions such as forest fringes, scrublands and

unmaintained plantations. The trails are threads which connect points within these patches and closely knit the fabric together. The centers act as places of specific activities such as markets, training areas, art and culture orientation centers etc.

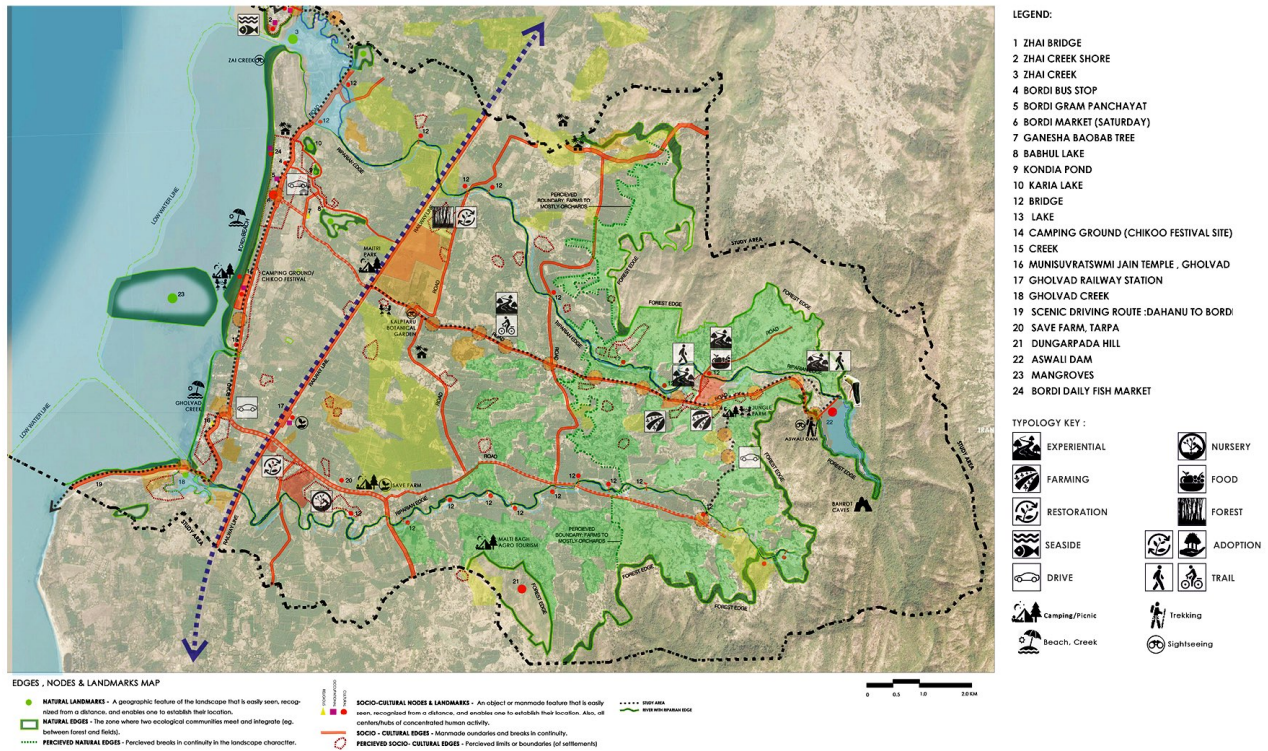


Plate 5 - Landscape Masterplan

Credits : Masters in Landscape Architecture and Design, CEPT University, Semester 2 (2017-19)

1. Patches

- To regenerate productive and recreational scrublands, the intervention looks at a systemic approach where these scrublands could act as anchor points to re-establish and strengthen the ecological fabric of the hitherto forest lands and initiate a process of ecological succession using the principles of social forestry. The Warli tribe and their dependency to the forest in terms of minor forest produce were studied and analyzed in detail to come up with a comprehensive development framework for the scrublands. This dependency in terms of domestic consumption and export of the minor forest produce is fulfilled through community participated minor forest produce centers and can in turn reduce the encroachment of communities on the forest.

- b. Forest Fringe: Fringe areas of the forest is proposed to be productive by planting with Non Timber Forest Products (NTFP's – medicinal, bamboos, gums, resins, saps, flavors and fragrances, flowers, fruit, nuts, honey, etc.). Income from highly productive NTFPs and related value added products can reverse the trend of illicit felling of trees to sustain livelihood.
- c. The minor forest produce and NTFPs would be managed, harvested and sold by the Warlis & the Forest Department. The threshold of this forest fringe and upgraded scrublands are proposed to be developed as Orientation Points designed to introduce visitors to the joint forest management program, and to serve as an information disseminating point for the locals. It can be understood as a meeting ground for the locals, the forest department, supporting NGO's and visitors.

By setting such a system in place, a prototype for sustaining joint forest management can be established. This could become the precedent/ learning ground for future initiatives for inclusive development in this region. The intervention will act as an investment in natural layers, involving and benefiting the locals and creating interests for tourists. It will be community managed with the help of the forest department. Initial provisions will be made available by the forest department and the process will be carried out through people's participation.

2. Trails

Tourists are attracted to this region for its natural beauty, a getaway from busy city life and to enjoy the Chikoo festival in the month of January. There is a state highway and railway passing through the region which makes it accessible easily. Taking advantage of its location and landscape values, the above stated proposals for patches could be interlinked through nature-culture trails to act as a closed loop promoting tourism. This shall benefit the local population.

The following possibilities can be looked at:

- a. Trails can be developed in the scrublands upgraded to forest. This would allow tourists to explore a forested area and also engage in seasonal activities such as harvesting fruit etc.
- b. The route of Border-Aswali Road that connects the Aswali Dam and the productive forest fringe to the haat would act as a nature trail for tourists. Once initiated these gateways can then act as physical connections to the jungle orientation center. The route map for this trail will be carefully laid out after mapping the experiential character and identifying potential pause points in landscape. Minimal interventions along this route would attempt to make visible to the visitors the values embedded in this landscape and its people that are both on the cusp of change, which could lead to meaningful reflection on the part of the observer. By setting such a system in place in the given setting, a prototype for sustaining joint forest management can be established. This could become the precedent/ learning ground for future initiatives/improvements for inclusive development in this region.

3. Centers

Centers provided along the trails which look at site specific landscape projects such as a nursery to promote horticultural resources, food gardens, community farming initiatives etc.

A. Community farming initiatives to improvise on agriculture:

Much of population has been marginalized and has to seek job opportunities beyond their domain in this region. Due to practicing paddy farming once in a year, the land is left uncultivated for rest of the time. Even though this region shows good diversity in growing crops, vegetable, flower, fruit trees etc. they are not using their land throughout the year. Because most of the fields are rain fed, they need investment for startup in agriculture and people believe agriculture requires more effort to get benefits than other work they are doing at present.

Farming initiatives that might be undertaken include:

- a. Making villagers self-sustain by using productive land throughout the year.
- b. Minimizing efforts to produce income from farming.
- c. Conservation of biodiversity of the region in terms of growing vegetation.
- d. Utilizing every part of barren / fallow land to increase output.
- e. Reducing migration with respect to employment opportunities.
- f. Introducing new methods of agriculture and other methods to optimize use of land resources such as introducing organic farming.
- g. Combining Agriculture and Agro forestry in the rural development to strengthen the values of economical sustainability and ecological conservation through smart farming practices.
- h. Maximizing utilization of resources without harming environment.
- i. Cultivating vegetables along with paddy farming which will bring the local economy to farmers.
- j. Promoting rural innovation as a key aspect of the demonstration program.

B. Market: A local *haat* (market) that would serve as a marketplace for the forest produce and related cottage industry products from the nearby villages to be sold. *Haats* are the most democratic markets since they provide a place for even the smallest of producers. Organized markets can benefit local fishermen and farmers as well.

C. Warli culture centers: Small spaces are to be carved out within hamlets to have outdoor workshop areas for Warli Paintings. These areas can be connected through the trails.

D. A food garden: A place where people are encouraged to explore the culture of a wide range of ethnic cuisines both as edible and spatial sensations. It provides an opportunity to connect culture and community at the same time to urban visitors who may have only

been exposed to store bought food and to immediately engage them in the entire journey of plants to food process. Food gardens allow you to experience productive gardening in very different ways and provide space tallow you both enjoy the taste and experience the taste. Food can be seen as a representation and manifestation of human identity that is reflected in the character of the landscape. The plantings in the food garden will be worked in a sustainable manner with organic gardening techniques and professional gardening staff from the local community who will also bring in their traditional skill sets. It shall have other amenities like a restaurant, exploratory deck and harvesting etc. The spatial construct will try to reflect the many qualities of taste. The character of the landscape will be derived from the textures, color and feel of many predominant ethnic cuisines. Harvesting food, one of the earliest of human activities, will act as a major functional factor. Diversity of plant and spaces within the garden will represent the rich variation the region offers in term of its food culture.

4. *Other interventions*

- a. Agro tourism
- b. Water harvesting and recharging by adopting soil and water conservation measures
- c. Nursery for selling plants, especially the grafted chikoo saplings
- d. Identification of the various spaces in the village landscape connected to farming and cultural nodes.

Key insights

1. Economical instability leads to the fragmentation of community.
2. Modernization brings in unnecessary changes through industrialized goods that do not benefit the major community.
3. Quality of life of the local people can be improved by understanding, enhancing and integrating social, culture and natural resources of the region.

4. Warli art is on a decline. Proper steps need to be taken to conserve it. Unless the basic needs of people are fulfilled by providing them with alternate income generation sources, one cannot keep such arts alive. Our approach looks at innovative ways of re-establishing the symbiotic and robust relationship of the warli tribal to the forest through a three component system.
5. This region is known for Chikoo orchards. It is unique to have the fruits almost throughout the year and of a very good quality. At present the soil and the ground water table is good. But our research has shown that the ground water is depleting and salinity in the soil is increasing. If the present trend continues, it will irreversibly harm the chikoo production. Thus water conservation and recharging is also important for the sustenance of chikoo orchards.

Conclusion

The landscape approach looks at a three system based intervention which has large areas of natural conditions reconceived as patches for ecological restoration by means of community participation and economic regeneration, including a prominent nature/culture tourist circuit connecting points such as markets, food stalls, artist villages, schools etc. within these patches that will promote tourism related awareness and income generation; and centers along the trails that look at site specific landscape projects such as a nursery to promote horticultural resources, food gardens, community farming centers etc. In a nutshell, it proposes series of landscape inserts connected by a circuit of nature/culture trails as part of a proposed zoning at the regional scale. The paper has outlined landscape strategies with strong empathy towards ecology, culture and community to generate innovative and sustainable methods of development that are both economically and ecologically viable.

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Biographical Notes

Deepa Maheshwari is a Professor and Program Chair for the Master Programs in Landscape, CEPT University. She has a PhD, Masters in Landscape Architecture from SPA Delhi and M.Sc. in Botany from Delhi University. She has been associated with this program since its inception in 1993. Her areas of expertise are Ecology and Environment, Botany and Planting Design and Regional Landscape Planning. She is a founder member of Indian Society of Landscape Architects (ISOLA), established in 2003, Chairperson of Education Board, ISOLA (2010-16) and Chairperson of ISOLA Gujarat Chapter (2015-18).

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