



IV The Western Ghats

THE WESTERN GHATS

The Western Ghats - also known as the Sahayadaris, is one of the world's ten hottest biodiversity hotspots. It has four major forest types and 23 floristic types as well as the unique high altitude grasslands. The WG also contain more than 30 percent of India's plant, fish, bird and mammal species.

The area has also provide the stock for domestication of animals. Amongst goats breeds endemic to the Western Ghats ecoregion include *Marwari* (Kerala), *Chigu and Beetal* (both from Maharashtra). Sheep breeds native to the ecoregion are in Mandya (Karnataka), Coimbatore, Nilgiri and Vembur (Tamilnadu). Hill cattle are locally preserved in Uttara Kannada (*Malnad Gidda*), Kerala (*Vechuri*) and in Tamilnadu (*Malaimaddu*).⁽¹⁾

The Western Ghats have also provided several cultivars of rice (*Oryza sativa*), including Sannakki a localized basmati variety in the remote hills of Uttara Kannada.

Finally, the Ghats support a population of over 4.5 million, most of them either forest dwelling or forest dependent communities like the tribal communities of Kerala, Tamil Nadu and Karnataka, who are exclusively dependent on these forests for survival.

Notings quiet on the Western Ghats

Traditionally, shifting cultivation (known as Kumri, Hhakkal, supported partially or entirely endogamous caste groups of farmers such as *Kumri Marattas, Kunbis, Kari vokkals, Halakki vokkals* and *Mukris*. Although shifting cultivation was prevalent, a sizeable portion of the forest in



every village ranging from a few hectares to several hundred hectares was conserved as a sacred grove. These sacred groves have been refuges for rare plant species.

The British then began large scale teak logging. Natural regeneration did not take place and foresters initiated vegetational changes as they went in for teak monoculture. Later these were transformed into commercial plantation for coffee, rubber, spices and Eucalyptus. This had serious consequences for the indigenous people who were engaged in hunting-gathering, shifting cultivation and pastoralism.

Post independence, also saw major deforestation, due to mining, tourism, infrastructure, and power and hydro and now nuclear energy projects. Annual deforestation of .57% over 70 years between 1920s and 90s, result in the loss of 40% of natural vegetation. The loss of 25.6% of the forest cover was during the period 1973 to 1995, during which time the dense forest was reduced by 19.5% and open forest decreased by 33.2%. As a consequence, degraded forest increased by 26.64%, grasslands by 28.73%, plantations by 6.78%, and agriculture by 11.15%

In Karnataka, nearly 12% of the forests have been completely lost in the past two decades. During the same period, in a region like Kodagu (Coorg), coffee cultivation has increased by nearly 100%, with a concomitant loss of 18% of forest area.

Besides the loss of forest to plantations, development activities have posed a serious threat in the fragile Western Ghats, which supplying water to the rivers of Southern India and acting as natural carbon sinks and climate controllers”.

Mining:

Government data tabled during the monsoon session of the Goa assembly(2010) reveals that 182 of Goa’s 300-odd mining leases in the state are located in close proximity of water bodies. (2) The Prevalent open cast mines endup removing whole mountains and excavation of deep pits. The quarries located on hilltops, are left denuded after the extraction. In 2006, mining generated 1.84 billion tonnes of waste – most of which has not been disposed off properly. (3) An estimate during 2005-06 says that Iron-ore mining used up 77 million tonnes of water.

In Kudremuch in the state of Karnataka, the debris left behind after mining ceased following court intervention, is causing major problems in this rare 'Shola' forest ecosystem. Every monsoon nearly 20 million tonnes of withered iron ore that has lain untouched begins to seep down the hillsides polluting the river Bhadra which is the main source of water for this region. Experts observe that 60 percent of the total siltation in the river is due to mining activities.

In 2004, massive mining operations were underway at the Kodachadri hills, recognised as one of the hyper-sensitive forest areas of the Western Ghats. According to leader of Vriksha Laksha Andolana, Ananth Hegde Ashisara, an AP-based mining company had quietly begun a massive mining at Ambaragudda near Marati in Nagodi Ghat of the Western Ghats. The thick forest area of the Kargal forest range would be destroyed if the mining continued. Road work had been taken up in Ikkibeelu, Kasagodu, Muralli and a labour housing complex had come up at Nagodu.

In Maharashtra stretch of the WG which is rich in iron ore and bauxite, the government has granted 32 mining leases. Of the 56 villages with deposits, mining is on in four and the effects are proving to be disastrous.

Mining of bauxite and iron ore, according to Leo Saldhana of the Environment Support Group, "has destroyed vast areas of highly sensitive tropical evergreen forests, polluted rivers causing losses to local farming communities, wiping out aquatic species and threatening the health of the people and wildlife in the area". (HT)

Power projects:

Uttara Kannada – a major source of Power, and yet very little development:

Almost all the power that is generated from the district is exported to other regions. **Uttara Kannada uses only 17 MW of the electricity produced.** Many parts of the region languish in darkness. A brief overview of major power generating sources in Uttara Kannada and the installed capacity is provided below.

Dam	Installed capacity
Supa dam power house	100 MW
Nagjari power house	855 MW
Kadra dam power house	150 MW
Kodsalli dam power house	120 MW
Nuclear	
Kaiga Nuclear Station	440 MW
Total	1665 MW

Source: 6 Major Dams, A Nuclear Power Plant, A Paper Now Another Dam? Memorandum To Chief Minister of Karnataka, by Kali Bachao Andolan, June 5th, 2003 <http://www.esgindia.org/>

Heavy precipitation, coupled with the steep westward slopes of the Ghats has rendered this as an ideal location for the generation of hydroelectric power. There are about major 50 dams along the length of the Western Ghats with the earliest project up in 1900 near Khopoli in Maharashtra. Most notable of these projects are the Koyna Dam in Maharashtra, the Parambikulam Dam in Kerala, and the Linganmakki Dam in Karnataka.

In Karnataka alone, most of the hydroelectric projects of the state (about 3,000 MW out of the installed hydel capacity of about 3,500 MW) are in Western Ghats. The destruction, submersion and fragmentation of the Western Ghats due to hydel projects alone have been so massive so far that its sensitive ecology has been irreversibly damaged. Recently, the Minister of Environment and Forests announced a moratorium to the proposed Gundia Hydro-electric project.

Other power related projects that need to be looked at closely for its impact of deforestation are: Thermal projects based on fossil fuels like coal, diesel and gas, nuclear power projects and large size windmills.

The Konkan belt of the Western Ghats (in Maharashtra) is set to emerge as the energy hub for western India. The 720 kms stretch from the northeastern corner of Mumbai down to Goa is the site for some big-ticket energy projects. The centerpiece of this ambitious plan is the 9,900 MW Jaitapur Nuclear Power plant that will come up in a 983 hectares plot of land in Ratnagiri district of Maharashtra.

The Nuclear Power Corporation of India (NPCI) has entered into an agreement with French giant AVRO for Jaitapur nuclear plant- the largest nuclear power plant based on the European-pressurised water reactors (EPRs) technology in the world. It is the first practical outcome of the civilian nuclear deal that India concluded with nuclear suppliers in 2009. The NPCI-AVRO deal signed during the recent visit of President Nicolai Sarkozy to India.

Local people are also up in arms are protesting against the project. Vaishali Patil of the Konkan Bachao Samithi believes that. "This is the death knell for Konkan, our lives will be nighmarish".

The government of Maharashtra meanwhile also proposes to set up new power projects for a total capacity of 19,240 megawatts (MW) along the narrow Konkan coastal strip in the next five years. A total of eight imported coal-based projects with a total capacity of 15,200 MW are planned. These include, amongst others, two 4,000 MW ultra mega power projects (UMPP), one of which has been awarded to Reliance Energy Limited (REL) and a 1,600 MW plant to Tata Power Company (TPC). The proposal also includes a 3,000 MW nuclear project and a 1,040 MW gas based project.

A common impact of all these categories of power projects is the diversion of sizeable chunks of forest lands for transmission lines. Transmission lines are needed to evacuate power from large size power plants to be transmitted /over large areas. As compared to micro-power plants, which will cater to the local electricity needs, large size power plants have huge transmission network destroying the forest cover, fragmenting the forests, and opening up the thick forest cover leading to accelerated deterioration.

In addition to the forest lands needed for the 'Right of Way', such transmission lines lead to deterioration of forest ecology due to dust and noise pollution during the construction activities such as forest clearing, excavation, debris dumping, temporary shelters for workers, chopping trees for firewood etc. Frequent movements of vehicles add to the problems.

Tourism & Waste

Tourism is changing from adventure and nature seeking activity to a luxury consumption exercise generating a lot of waste and consuming critical natural resources like water and land. Construction boom physically alter the appearance and ambience of the forests as well its peripheral neighbourhoods. Ooty, Kodaikanal, Lonavala-khandala, Munnar are some of the more popular hill stations along the western ghats, which have become concrete jungles over the last decade.

Infrastructure projects

Infrastructure projects, seen as engines of progress, have been responsible for large scale deforestation. The Konkan railway, even

though resisted by locals calling for re-alignment, saw the Courts supporting development at the cost of what it called a few acres of Khazan lands. Since then, every year has seen major landslides causing further deforestation. Similar is the fate of mangrove forests which are to be destroyed by the second airport to Mumbai at New Mumbai.

After the advent of privatization, the land grab in one name or the other has continued unabated. The entire Konkan belt, which is an ecologically sensitive coastal region, has plans for 33 SEZs, including multi-product, port-based captive power generation and real estate projects. There is wide spread opposition to SEZs by coastal communities in Raigad district in the western ghats, which is probably one of the few districts in India that is literally being swamped by companies wishing to set up SEZs.

Normally such resistance is dismissed as peripheral or promoted by fringe groups. One Collector dared hold a referendum which led to the cancellation of plans for the SEZ concerned.

A similar attempt to label opposition as anti-development or fringe groups, is the case of the Lavasa Lake City, which has sought to develop over 12,500 acres of verdant forests around the Varasgaon dam, into what it calls a planned Hill Station. Scores of full page advertisement in newspapers set out to convince people that the area is more green now, than it was a few years ago, through comparing picture taken in pre-monsoon summer with post monsoon greenery. The environment ministry has raised objections, but most observers feel that ultimately the project will continue to destroy forest, as it will be asked to make a few changes, much like the case of the New Airport in New Mumbai.

Impact of Climate Change on Western Ghats

Climate change over the next 30-40 years will take its toll on at least one-fifths of the Western Ghats. Studies from the Indian Institute of Science have shown that the mountain regions of the Western Ghats featuring a mixture of stunted evergreen forest and grasslands with sharp ecotones are a sensitive indicator of past climate change. With an increase in temperature and reduction in incidence of frost, the montane forests

dominated by Lauraceae and Rubiaceae could potentially expand into the grasslands.

The Indian Network for Climate Change Assessment (INCCA), forecasts the temperature to rise by up to 1.8 degrees Celsius in the Western Ghats by 2030s (when compared to the 1970s), and rainfall to increase by 6 to 8 per cent and also incidences of “extreme rainfall.” An increase in the temperature-humidity index in the Western Ghats by the 2030s could also lead to severe thermal discomfort of livestock and... have a negative impact on livestock productivity” INCCA also predicts a reduction in the productivity of cash crops, including a 24 per cent drop in coconut productivity.

In two decades from now a staggering 18 per cent of the Western Ghats could be in the throes of transformation brought on by climate change. As a result of this change a “sizeable” population that depends upon forest resources stands to lose out on income.

Socio-economic impacts of climate change

Scientists at IISc have also studied the impact on the livelihoods. According to Prof. Ravindranath et al., in Uttar Kannada, under the most likely scenario, the aggregate quantity of non-timber forest products (NTFPs), potentially available for extraction is likely to increase in the evergreen and semi evergreen forest areas with projected increase in area under these forest types. However, there is uncertainty regarding the transient response of vegetation to climate change and this could lead to forest dieback and loss of vegetation.