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Hubballi-Ankola rail line: a climatic catastrophe



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The proposal to divert 727 hectares of forest land for the Hubballi-Ankola rail line in Dharwad, Yellapur and Karwar forest divisions has been dropped and revived many times during the last 12 years. Despite the proposal having been recently negated by the Railway minister and the National Tiger Conservation Authority, it was taken up for consideration at the first meeting of the State Board for Wildlife under the Kumaraswamy government. As the board was divided, the proposal was deferred.

This forest land is among the best of the ecologically fragile steep area of the Western Ghats and its destruction would disturb the natural and perennial flow of numerous water courses contributing to the tributaries of several rivers. When there is cloud burst in the region, the hilly areas are affected by landslides, landslips and soil piping. When the trees are cleared in any area, the roots underneath decompose over time and hollow pipes develop beneath the earth. The earth sinks up to 20 meters and the phenomenon is called soil piping.

When the forest land diversion proposal was put up for the first time in 2008, then Principal Secretary Abhijit Dasgupta examined all aspects in detail and rejected it. Of course, the Yeddyurappa government immediately transferred him to an insignificant post.

The Infrastructure Development Department of Karnataka engaged the Indian Institute of Science (IISc) for the impact assessment of environment and biodiversity in February 2011, with terms of reference to document the existing flora, medicinal and endemic species, corridors for wild animals, flow pattern for rivulets and rivers. The IISc was also to suggest engineering solutions for laying the rail track as well as the environmental management plan.

The IISc engaged a multidisciplinary team of ecologists, environmental engineers, GIS and remote sensing experts, wildlife experts, botanists, zoologists, geologists, soil and water experts, etc. The team gathered data on flora, fauna and land use in the pre-project scenario.

The proposed rail line from Kirwatti to Y junction near Ankola goes through ecologically very valuable forests. Between Kirwatti and Yellapur, it is moist deciduous forests with annual rainfall varying from 1,200 to 1,800 mm. The proposed alignment from Yellapur to Sunksal is through steep rising hills and valleys with altitude ranging from 150 to 450 metres above sea level and rainfall varying from 1,800 to 2,500 mm. The track comprises of wonderful evergreen and semi-evergreen forests of endemic tree species such as *Myristica malabarica*, *Polyalthia fragrans*, *Cinnamomum macrocarpum*, *Holigarna graham* and *Hopea ponga*, etc. The last 30-km stretch between Sunksal and Ankola is in the foothills of the Western Ghats and is also hilly, with altitude varying from 18 to 150 metres above sea level, and is dominated by secondary moist deciduous forests and semi-evergreen forests.

Land cover analysis was carried out using satellite imagery and 98.78% forest cover in 1973 had reduced to 83.14% in 2010 due to anthropogenic pressure. Predictions based on temporal changes further revealed that there would be a further 11.8% decline in forest cover by 2020. The simulation consequent to land-use changes with implementation of rail project indicated a decline of 16.23% of forest cover.

It was also identified that elephants moving out of Dandeli Sanctuary pass through Bhagwati, Kalghatgi, Kirwatti, Mundgod, Katur and go up to Hangal. The proposed rail line would pass through the region and fragment the corridor and pose a threat of train hits and loss of property and lives of humans and livestock.

In the environmental management plan, the IISc recommended the implementation of the project with a number of mitigation measures. It was observed that the forests in this linear project are relatively inferior as compared to the adjoining areas. With tree enumeration data, the proposed area had 265 trees per hectare and it was accordingly recommended to provide rigid protection to similar degraded areas to regenerate 350-400 trees per hectare and compensate for the loss in the region.

The IISc plan had recommended compensatory afforestation in 796 hectares of degraded area available in the region, with diverse species and not the monoculture of one or two species, duly involving local communities. The forest department has never succeeded in growing large-scale plantations of so many divergent species. The plan recommended creating fodder reserves for wild animals. This is highly theoretical and is not implementable. Vegetative check dams, gully plugs, etc as soil and water conservation measures were also recommended. Such works at large scale have generally not been implemented successfully.

All the plantations done by the forest department in the past are termed poor grade plantations in the report. I wish the multidisciplinary team of the IISc had one or two forest officers to make practical suggestions.

To strengthen the natural drainage system, the restoration of natural riparian species such as *Carallia brachiata*, *Ficus racemosa*, *Hopea ponga*, *Pongamia pinnata*, etc, would be useful to prevent soil erosion, landslides and flooding. However, these species do not respond favourably. Mitigation measures are also suggested for construction phase and labour management.

Contrary to the management plan for the proposed rail line between Hubballi and Ankola, the IISc scientists cautioned against deforestation and linked it to declining water availability in natural streams. They have written a paper "Eco-hydrological footprints of river basin in Western Ghats" based on observations in Kali river basin in central Western Ghats. The paper was published in the *Yale Journal of Biology and Medicine* last year. It was concluded that unplanned developmental activities have altered the catchment integrity, threatening the regional water security and converting perennial streams into seasonal ones.

Recent climatic catastrophes in Kerala and Kodagu and the 2009 flood in Karwar have sent us enough warnings and we should take lesson from it.