Midland Laterite Hill Degradation in Kannur District, Kerala

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Midland laterite hills are beautiful natural gifts, giving a curvaceous shape to the entire landscape, with plenty of vegetations and a rich array of animals. The laterite hills are the most imposing but extremely threatened topographical floristic and faunistic feature of northern Kerala. Major part of Kannur district comes under midland region with numerous hills and dales. Vast stretches of laterite capped hillocks are the characteristic feature of Kannur district.

The midland lateral hills in the northern part of the state are slowly vanishing as the soil is enormously being scrapped off to meet the demand of land developers and contractors. Trucks and Tipper Lorries, carrying hundreds of loads of soil shuttling up and down the main roads across the region is a common sight in these days. Large number of excavators are being engaged every day for the demolition work. It is estimated that more than 1000 truck loads of earth from demolished hills are being transported everyday in this district.

Midland hills have become the attractive source of big business involving builders, land developers and contractors who purchase private midland laterite hills and coastal wetland plots at cheaper rates. The hills are then demolished and laterite soil is transported to fill water lands and paddy fields.
It has been estimated that more than 50 percent of the hillocks in various panchayats and municipal towns had been subjected to heavy excavations and removal of earth; among them 10 to 15 percent had suffered ultimate eradication. Nearly half a dozen laterite hillocks near Thalassery are in the process of demolition. A major portion of a hill near Iritty town has been completely demolished. Demolition also took place at Chuzhali and Chiravakku near Thaliparamba. Hill degradation is also taking place in Srikandapuram. The Achilamvayal hillock degradation at Vellur near Payyanur had been studied in detailed by a society in a Kannur district (SEEK). Hillock at Madayipara is also facing a threat.

People are often unaware of the importance of the midland laterite hills that are being demolished due to the growing commercialization of land, expanding urbanization and booming construction industry. The geological and ecological importance of these laterite hills are to be highlighted and conveyed to the local people with appropriate propaganda and orientation. Media has a significant role in educating the masses on the ecological and environmental impacts of this activity. The demolition often goes unnoticed and unopposed because of the popular perception that these hills are waste lands and absolutely useless in the new scenario of development.

The uncontrolled deterioration of the laterite hills cause irreparable damage to the ecosystem, bio diversity and nature’s water conservation strategies. Degradation of hills resulting in loss of vegetation, destruction of the animal fauna, land deterioration, ground water loss, dust pollution, change in wind pattern and its influence in traditional faiths, rituals and culture of localities are to be studied in detail.
Ecosystem and bio-diversity depletion

Rocky surfaces, grass lands and green patches of laterite hills are rich and diverse habitats accommodating vast varieties of flora and fauna. The age old biological activities have transformed these areas into bio-rich realms which are the nature’s gifts. Degradation of midland laterite hills brings about simultaneous collapse of atleast three ecosystems including hillocks, valleys and wet lands. The sacred groves which are unique to these laterite hills are the naturally existent floral centers supporting various groups of butterflies, birds and other animals, of which some are endemic to these habitats.

The floral diversity is astounding with different species of shrubs, herbs, trees and creepers growing at the surfaces and in the slopes of the hills. Midland hills are characteristic with hundreds of varieties of grasses, some of which are medicinally important. Candhium, Figs, Alstonia, Indian Coral tree, Indian Iron wood, Semicarpus, Neem, Pterocarpus etc. are invariably present in midland hills. Holorrhena, Terminalia, Ixora spp. Vinea, Gnetum, Calycopteris, Vitis and Lianas represent some of the highly important and rare plants having commercial and economic importance.

Bio-diversity of midland laterite hills varies greatly. Studies of Madayipara alone has documented 38 species of grass, 280 species of other plants, 92 species of butterflies and 68 species of birds (Jaffer, 1998). The scope of fodder for cattle and green manure is abundant.

Faunistic diversity of the midland laterite hills is amazing. Butterflies which are the bio-indicators of nature are abundantly present in these hills. As they cannot be seen in polluted lands, there presence indicates the virginity and
versatility of these hills. The water bodies found during rainy season support different species of fishes and amphibians. Out of 80 species of amphibians reported from Kerala 13 survive in midland laterite hills. Skipper frogs, Rufescent frogs, Common tree frogs, Malabar flying frogs and several varieties of toads are peculiar inhabitants of the laterite hills. Out of 100 species of snakes reported from Kerala 20 species inhabit the laterite hills. Other reptiles include Pond Terrapin, Mugger crocodiles, Mabuya, Calotes and Lizards.

Out of 480 species of birds reported from Kerala, about 50% of species have been recorded in midland hills. It is interesting to note that the Desert Wheater was first located in Kerala in Madayippara hills of this District. Many migratory birds select water bodies in the laterite hills as their favourite breeding grounds. The Skylarks, Lapwings and Stone Crews which are intimately associated with the laterite hill habitats are on the verge of extinction as they are unable to withstand the changing situations.

Out of 110 species of mammals of 15 orders reported from Kerala, 90 are terrestrial and one-third among them inhabit the midland laterite hills. Bonet monkeys, Jackals, Indian fox, Smooth coated otters, Toddy cat, Small Indian civet, Mongoose, Jungle cat, Wild boar, Pangolins, Hares, Shrews, Squirrels, Mole rats, Porcupines, Flying fox etc are some of the mammals facing the threat.

All these animals face severe threat due to their loss of habitat by the deterioration of the midland laterite hills. With regard to the fauna it should be taken into account that depletion of different groups of organisms should not be treated separately as different groups associate in diverse ways forming intricate chain or web in utilizing the biological resources and
in energy transfer. This chain relationship and energy dynamics will be irreparably affected when a particular group is disappearing and the ultimate sufferers will be we ourselves. The disappearance of plants and animals endemic to this peculiar habitats ultimately leads to severe damage in genetic diversity and gene pool.

**Midland Laterite Hills and Water Conservation**

The rough peripheral surface of the rock leads to numerous ditches and channels which are interconnected. Towards the bottom these channels are replaced by numerous globules of clay. Limestone, sand and clay form the inner layer beneath the hard upper surface. This peculiar structural frame work contribute to the water retaining capacity of the laterite rocks. The rain water is stored in the vacuities of laterite hills which form the underground reservoir of water.

This shows that the thick top layer itself is a good aquifier and the seasonal rain percolates deep into the plateau through the laterite and recharges the never-depleting water table of the plateau. Ground water is found to be depleting at a faster rate in Thalasseri, Thaliparamba, Kannur taluks as per the water table data of the Ground Water Department. Thus in a district where water problem is very acute, degradation of water repositories like laterite hills will be highly suicidal.

**Conclusion**

The authorities are helpless in checking the demolition of hillocks because there is no effective law to check the razing of hills owned by private parties. They are also having no complete data of degradation.

Environmental organizations and NGOs should seriously take up the issue by creating awareness on the
ecological role of the laterite hills. Proper orientation and education should be given to the local people. Today, there are only some discontinuous protests here and there which can bring about no results. Massive and coordinated agitation in the form of protest rallies, dharna involving the youth are the need of the hour. Agitation should be strong enough to make the authorities to frame sufficient regulations and to take stringent action against those who violate these regulations.

The interrelationship between the exploitation and degradation of environment and natural resources and development and poverty is particularly relevant in the present context. Sustainable development is the only alternative to conserve nature and natural resources to enable the forthcoming generations to live here safely and successfully. The degradation of all natural resources should be discussed with this approach in mind.