THE GADGIL-KASTURIRANGAN REPORTS ON WESTERN GHATS AND CONCERNS OF THE PLANTATION SECTOR

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The Western Ghats Ecology Expert Panel (WGEEP) or the Gadgil Committee **(**March 2010 - August 2011) and the High Level Working Group (HLWG) or the Kasturirangan Committee (August 2012 – April 2013), both constituted by the Union government and now the Expert Committee of Kerala government (October 2013) are mandated with the responsibility to make recommendations for protecting and rejuvenating the ecology of the Western Ghats (WG). Each committee was constituted to look into the report of the previous one. Some of the best minds in the country served on these committees, but there was no balanced representation of the various sectors and stakeholders of WG. Ecological degradation of WG is mostly due to anthropogenic activities and cultivation of spices and plantation crops constitutes the most significant such activity in the region. Yet, this important sector's concerns were not addressed in the reports submitted by these committees. WG ecology is too important to be delegated to one ministry or department or those who work on forests and ecology alone.

Reports of both WGEEP and HLWG contain sweeping and impractical recommendations that take care of only the ecological concerns of the region and not the genuine socio-economic apprehensions of the two million plus farmers who call WG their home. While WGEEP report put more than 278000 ha of rubber plantations under ecologically sensitive zones (EZS), the HLWG report put about 74000 ha in ecologically sensitive areas (ESA) in the WG. Another 213000 ha of rubber plantations exist in the 10 km buffer zone outside the ESA. The case with other crops such as coffee, tea, cardamom *etc.* must be even worse.

According to the HLWG report, as much as 76 per cent of the geographical area of Kerala falls in the WG region and nearly 44 per cent of the WG region falls into ESA. In other words, nearly 34 per cent of the geographic area of Kerala will be under ESA. Classifying one-third of the state as ESA goes against common sense and practical wisdom and this will lead to serious social unrest in a small and populous state like Kerala.

While making recommendations on ecological protection, agriculture should not be treated on par with industries or activities such as mining or quarrying. Ecological sustainability should not be an end in itself, but this should lead to social and economic security of the people living in the region. Nature and mankind have to coexist, not one at the cost of the other. Hope the latest committee constituted by the Kerala government will come up with pragmatic and realistic recommendations that are in the best interest of ecology and agriculture in the WG region of Kerala.

Keywords: Agriculture, Ecology, Gadgil Committee, Kasturirangan Committee, Natural rubbers, Spices and plantation crops, Western Ghats

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Protecting ecology of Western Ghats

There are any number of good reasons why Western Ghats (WG, traditionally known as *Sahyardi*) stretching about 1600 kms in a largely N-S direction along the Malabar coast (08° and 21° 06 N latitude and 73° and 78° E longitude, Gunnell and Radhakrishnan, 1967) covering an area of about 164280 sq. km. and home to more than 2.2 million people - not to mention the large number of flora and fauna, many of them endemic to this biodiversity hotspot and endangered - should be protected from eccological degradation of any magnitude (Kadur and Bawa, 2005). The WG eco-system has been and is still under continuous threat of degradation, mostly from anthropogenic activities. Over the years, both the Union government and the six WG state governments commissioned various committees which have come up with several measures to protect the ecology of WG. The people living in this region whose livelihood means are almost exclusively agriculture (largely, perennial species of spices and plantation crops) and hence closely dependent on the ecological wellbeing of the region are the first and foremost reason to protect the WG, and yet they are up in arms against the recent efforts made by Government of India in this direction. In this commentary, we ask the question, why?

Western Ghats Ecology Expert Panel and Ecologically Sensitive Zones

In 1999, the Ministry of Environment and Forests (MoEF), Government of India constituted a committee under the Chairmanship of Dr. Pronab Sen (member, Planning Commission) for identifying ecologically sensitive areas in the WG which require special protection under the Environment (Protection) Act, 1986. This committee submitted its report in 2000. In March 2010, MoEF constituted the 14 member Western Ghats Ecology Expert Panel (WGEEP) under the chairmanship of eminent ecologist, Professor Madhav Gadgil. This was mandated to Panel demarcate ecologically sensitive zones and suggest measures to conserve, protect and rejuvenate the ecology of the region. The Panel submitted its report in August 2011 (moe.nic.in/downloads/public-information/wg-28052012.pdfy). WGEEP adopted the Pronab Sen Committee's concept of Ecologically Sensitive Area (ESA) and designated the entire WG as an ESA. The Panel assigned three levels of sensitivity to different regions within the ESA, namely Ecologically Sensitive Zones (ESZ) – ESZ 1, ESZ 2 and ESZ 3 based on a 0-10 scoring system, with ESZ 1 being the most sensitive zone. Taluk was the unit of classification into these zones. A simple, yet elegant methodology was used to arrive at the zones (Gadgil *et al.*, 2011).

Ecology *vs.* agriculture

The report of the WGEEP was sweeping and lopsided, reflecting the well known ecological views of some of the members of the Panel with several suggestions that would have adversely affected the farming communities living in the ESZs. Ecology of WG deserves top priority, and the WGEEP report was mostly about the ecology of the region and did not consider the legitimate aspirations of the people living there. The latter did not come under the terms of reference of the Panel as strongly as the ecological concerns. This has been the problem all through. Agriculture is by and large the only source of income for most of the households in the WG and no member

of the Panel represented this sector. Their livelihood concerns cannot be seen differently from the ecological concerns, but people's concerns went poorly addressed in the WGEEP report.

Rubber Research Institute of India (RRII) under the Rubber Board took more than two years to identify the unique spectral signature of rubber trees and decide on the best time of the year to do satellite mapping (when the tree canopy is maximum and days are cloud-free) of the distribution of rubber plantations (Meti *et al.*, 2008; 2011; 2012). By superimposing the rubber distribution map (Fig. 1) over the EZSs (Fig. 2), it can be seen that about 278000 ha of natural rubber cultivated in Kerala, Karnataka and Tamil Nadu fall under one of the three ESZs identified by WGEEP. Almost the entire coffee, tea and cardamom lands also will be in the three zones. Recommendations of the WGEEP such as phasing out all types of agricultural chemicals, banning cultivation of high yielding varieties, cultivating only indigenous species, banning monoculture *etc.* are impractical and unscientific recommendations that go against the interest of growers of spices and plantation crops in WG. One can imagine how unscientifically conceived are the recommendations of the WGEEP viewed from the interests of the agriculture sector. The

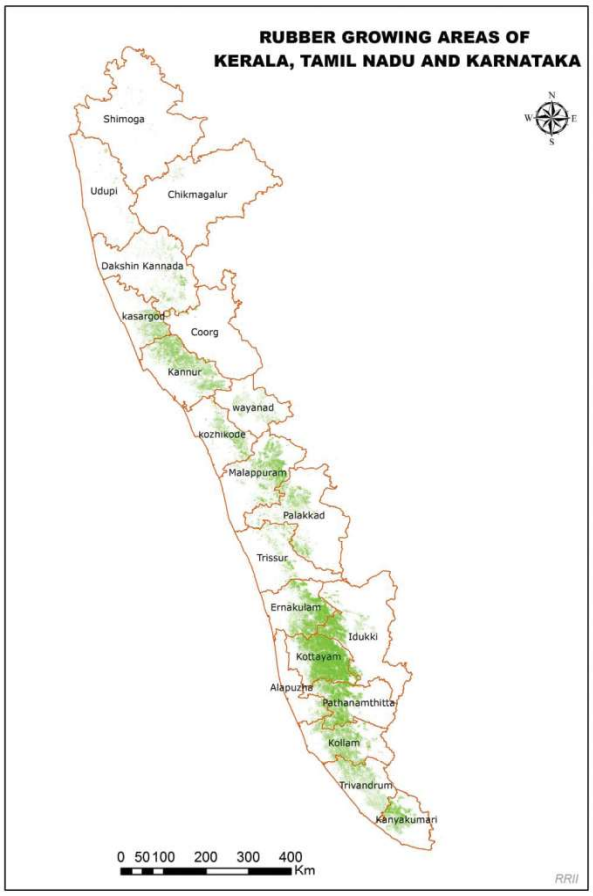

Fig.1. Distribution of natural rubber holdings in Tamil Nadu, Kerala and Karnataka as sudied from satellite-based remote sensing (Unpublished data provided by Dr. Shankar Meti)

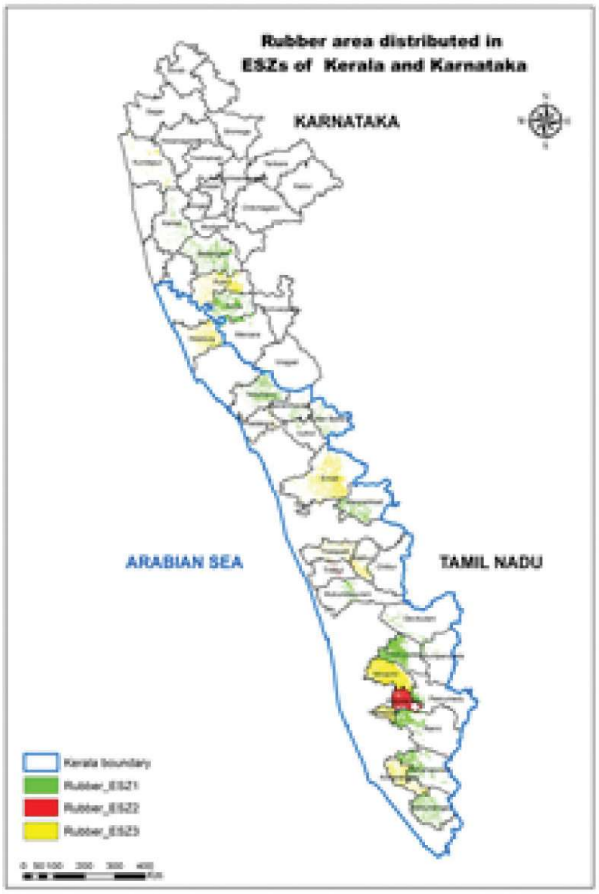

Fig. 2. Distribution of natural rubber holdings in the ESZs identified in the Gadgil report

country needs to produce spices and plantation commodities and WG are the suitable places where these can be produced.

Even banning of GM crops in the WG found a place in the Panel's recommendations. If growing GM crops in the ESZs is harmful, one wonders how good an idea it is to allow cultivation of GM plants just outside the limits of ESZs in WG. Any action that will put at stake the socio-economic wellbeing of the local communities which are by and large farming communities and the primary stakeholders of WG, is bound to adversely impact WG ecology in the long run. What is needed is to develop a balanced action plan protecting both agriculture and ecology of WG which are mutually inter-dependent. Cultivating spices and plantation crops in the WG has only helped to prevent continued degradation of the ecosystem and improve economic development of the region.

There are practically no other areas in the country where spices and plantation crops can be profitably cultivated (except certain patches in the Eastern Ghats, parts of sub-Himalayan North East *etc.*). These crops grown in WG are facing serious difficulties such as falling prices, high volatility in price, rising labor cost, labor shortage, rising cost of inputs, more areas under these crops becoming old and senile, adverse impacts of climate change *etc.* Any further externality imposed on this sector will make the spices and plantation crops cultivation in the WG unviable which will adversely affect the local economy and will also make the country deficient in the supply of these essential commodities.

To be fair, WGEEP report states that before implementing its recommendations, there is a need to define the boundaries of the ESZs since the Panel has "not been able to find time to examine and refine these with enough care".

High Level Working Group and Eco-Sensitive Areas

In the background of mounting concerns and complaints against the report of the WGEEP, the MoEF constituted a 10 member High Level Working Group (HLWG) in August 2012 under the chairmanship of eminent Astronomist and Member (Science) of Planning Commission, Dr. K. Kasturirangan to examine the WGEEP report in a holistic and multidisciplinary fashion and to come up with an action plan to implement WGEEP report in an effective manner. Clearly, the WGEEP report was not rejected by MoEF when HLWG was constituted. Economic and social growth of the people of WG and conservation of biodiversity without its any further loss were also included under the terms of reference of the HLWG, among others. All HLWG members and peer reviewers of its draft report were from forest and ecology background or from ISRO. Like in the WGEEP, none in the HLWG represented the spices and plantation crops or other agriculture in WG which constitutes the major anthropogenic activity in the WG.

While the Gadgil Panel took nearly 15 months to complete its study and submit the report, the Kasturirangan Working Group took only eight months to come up with its report in April 2013 (envfor.nic.in/sites/default/files/HLWG-Report-Part-1_0.pdfy:). The three member peer review committee of the HLWG report (experts in geo-spatial technology) while commending on the task of the HLWG, observed that the area covered (for geospatial analyses of vegetation types *etc.*) was large and the time

was limited. For undertaking a complex task of this nature, it appears that both WGEEP and the HLWG did not get adequate time and in neither committee was there any representation from the agriculture side!

This could be one reason why the identification of Eco-Sensitive Areas (ESAs) in the WG region has gone wrong in many places, despite the observation by the peer committee of the HLWG report "that the datasets used and methodology followed for geo-spatial analysis within the given timeframe and resources are adequate for identification of ESAs in the Western Ghats region". The report of the HLWG states that "the conclusions on the delineation of ESA presented in the report are based on the best of the contemporary analytical approaches and latest databases. Therefore, there is high confidence in the details used in the demarcation of ESA in WG region".

This contention of HLWG cannot be taken on face value, because many places identified as ESAs have sizable areas under spices and plantation crops. For instance, superimposing the distribution of natural rubber cultivation in Kerala (obtained from satellite-based remote sensing data), it can be seen that about 74000 ha of rubber holdings in Kerala come under ESA. This is certainly an improvement from the Gadgil report. The larger units of Taluks were the base for delineating ESZs by the Gadgil Panel, but the Kasturirangan committee used the smaller village as the unit to delineate ESAs and to this extent the area under ESA has come down in the latter report (Figs. 3 A&B). At the same time,

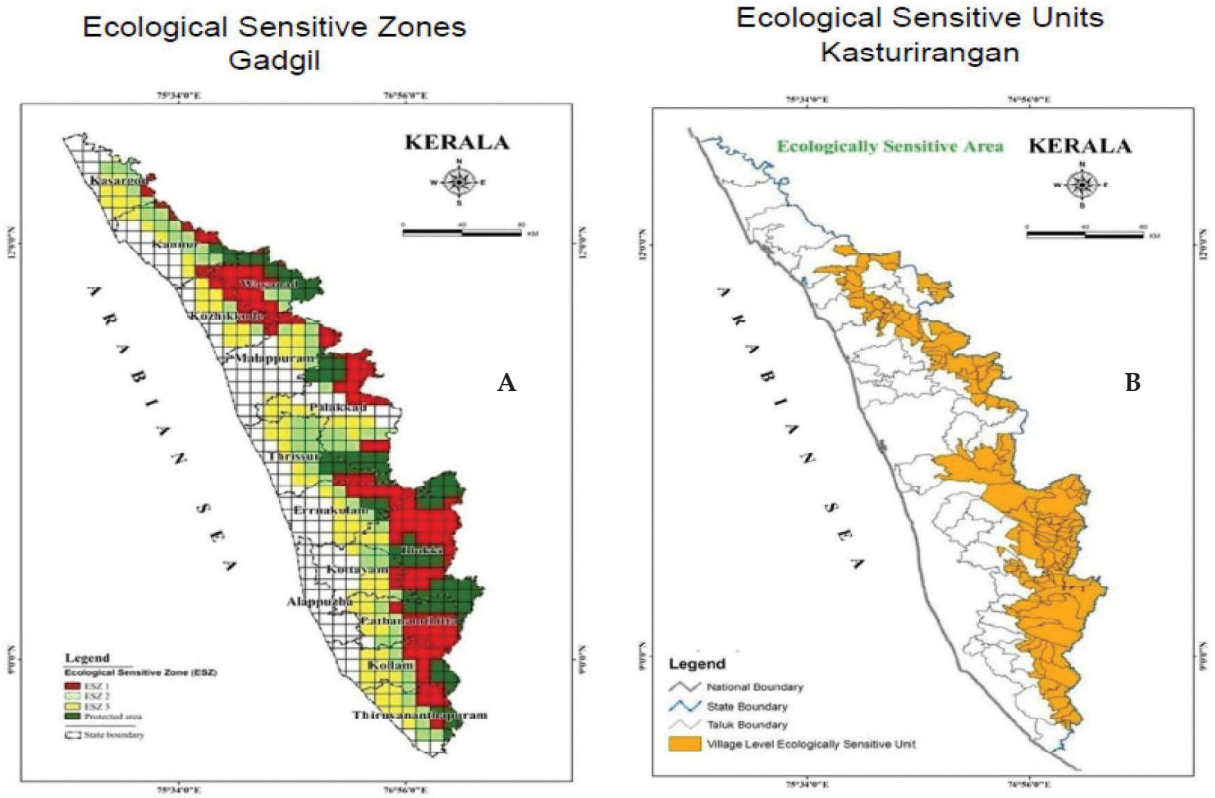

Fig. 3. (A) ESZ and (B) ESA identified in the Gadgil and Kasturirangan reports, respectively

highly sensitive ecological niches in certain places in the higher altitudes of Idukki district in Kerala do not come under the ESA delineated by the HLWG. Both Gadgil and Kasturirangan reports have serious errors of overlapping of cultural landscapes (non-forest plantations) with natural landscapes and apparent disregard for the survival and socio-economic wellbeing of the people presently inhabiting the WG. Therefore, the recommendation of the HLWG that "the ESA identified may be notified by MoEF with development restrictions proposed in (the report)" is not workable.

The HLWG report delineated eco-sensitive areas with the help of satellite-based natural vegetation classification supported by ground-truthing which had apparently more errors than just not identifying cardamom lands (understory vegetation). The Group has used the layers generated from a an earlier national project on landscape level biodiversity characterization jointly undertaken by the Department of Space and Department of Biotechnology. This study had used multiseason IRS LISS-III data (1998-2010) which provided spatial information on the vegetation types (Roy *et al.,* 2012).

The HLWG had access to excellent expertise available with the NRSC to delineate the vegetation types of WG, but delineation of the ESAs has not been without problems, even as the HLWG report states that "the demarcation of Eco-Sensitive Area has taken care to exclude the cultural landscape – agricultural and plantation areas". The report rightly points out that "it is in the interests of agriculturists and plantation owners to protect and safeguard biodiversity in and around the forests" but keeping a 10 km buffer zone from the ESAs with restrictions in human activities is impractical in a highly populous and small state like Kerala. Apart from the 74000 ha of rubber area that fall directly under the ESA, this buffer zone of 10 km will have another 213000 ha more rubber plantations, not to mention other crops.

According to the HLWG report, as much as 76 per cent of the geographical area of Kerala falls in the WG region and nearly 44 per cent of the WG region falls into ESA. In other words, nearly 34 per cent of the geographic area of Kerala will be under ESA. Classifying one-third of the state as ESA with restricted human activity goes against common sense and practical wisdom and this will lead to serious social unrest in a small and populous state like Kerala.

Agriculture and industry

Agriculture in WG is dominated by spices and plantation crops which are perennial crop species. This activity should not be treated on par with mining for minerals and sand, quarrying, polluting industries, hydro or thermal power plants, large windmills or major infra-structural developments. Agricultural development in the WG region is central to the socio-economic well-being of the people living there, but no more forests (flora and fauna) should be lost. Every bit of forest should be protected and preserved at any cost, for which can anyone say that the existing laws and legislations are in any way inadequate?

No developmental work, including agricultural development is possible without some collateral damage to the ecology. Agricultural practices should be developed and implemented keeping these

damages to the ecosystem as minimal as possible. There is no way cultivated land in the WG, be them in ESA or ESZ can ever go back to the original forest ecosystems.

In view of the above, a balanced approach has to be adopted to evolve Good Agricultural Practices (GAPs) in Western Ghats and mechanisms to implement them, which can conserve the ecosystems without straining existing agriculture in the region. Central government agencies such as the Coffee Board, Spices Board, Tea Board and Rubber Board along with the agricultural departments of the respective WG states, should evolve a set of GAPs for the crops of WG region giving top priority for ecology. A list of agricultural (chemical) inputs that should never be used in the region may be prepared and their use may be totally prohibited. The above government agencies should have the authority to ensure strict implementation of the GAPs in the WG region in their respective crops. HLWG recommends incentives for green and sustainable agriculture as well as payment for ecosystem services provided by the ESA and non-ESA in WG and these funds should be made available directly to local communities who live in and around ESA in WG.

Expert Committee of Kerala Government

Kerala government constituted a three member Expert Committee in October 2013 to study what stand it should take on the Kasturirangan report. This committee is the latest entry in the fray, after the Expert Panel and Working Group of the Union government, even as the Union government decided to implement the recommendations of the Kasturirangan report. This Committee has been conducting public hearings in different parts of the ESAs. It is generally expected that this Committee will come up with suggestions for protecting the interests of the farmers of WG and the ecology of this region. This Committee is actively pursuing the issue as this article goes to press.

No committees and peers appointed by the Union government had a balanced representation of various sectors and stakeholders. WG protection is not and cannot be the concern of just one ministry or department or those who research on forests and ecology alone. All stakeholders should be involved for developing a balanced action plan. Spices and plantation crops growers are the largest stakeholders and there is concern that their views and aspirations were not fully taken on board by the two committees constituted by the Union government.

Today we may say that it was wrong to convert large extents of pristine forests in WG to spices and plantation crops, but this happened one to two centuries ago. Today, there is no conversion of forests into other vegetation types in the WG that the existing forests laws and legislations cannot prevent. While we cannot sit in judgement over what has happened in the past when environmental awareness was not as strong as it is today, we cannot turn a blind eye towards the two million plus peasants who call WG their home. We have to accept that there is no going back for them and that their present status should be honoured while every effort should be made not to damage the existing forests and biodiversity. Implementing unscientific recommendations such as banning chemical fertilisers, fungicides, high yielding varieties *etc.* from their fields can amount to violating the human rights of the farmers living in WG. Instead, what is needed is to ensure their proper use of agricultural chemicals.

Ecological sustainability should not be an end in itself, but this should lead to social and economic security of the people living in the region. Nature and mankind have to coexist, not one at the cost of the other. Hope the latest Committee constituted by the Kerala government will come up with pragmatic and realistic recommendations that are in the best interest of ecology and agriculture in WG region of Kerala.

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