

## CONCLUSION

Through the present work it was tried to evaluate the status of biodiversity in the plantations and Natural forest and the influences of the exotic and highly invasive weeds in the Terai-Duars region of West Bengal, located at the feet of the Eastern Himalaya.

All the experiments like Phytosociological analysis, Soil status, Allelopathy, etc. and the analysis of the results are indicating the highly degradable status of biodiversity status in the plantations.

The allelopathic investigation was also revealed that the effects of all species used in plantations are not equally virulent. So, the allelopathic evaluation of all the species selected for plantation may go through stringent allelopathic tests, small lab based experiments to wider field tests.

The status of biodiversity is much better in all senses in natural forests. Even the forest-floor biomass production is also significantly high and all these are the indications of a healthy ecosystem formation in natural vegetation. On the other hand trees in plantations are fast growing and are economically much attractive.

Experiments on the invasion of troublesome exotic weeds proved their too much dominance and destructive effects on the native vegetation endangering the existence of local species, including important ones.

The effects of vegetation changes on the climate and the biological diversity has attracted not only the scientists but the common people with sensible understanding with the future of the biosphere are expressing their serious concern over the man-induced artificial changes in the vegetation structure. It is now realized that the vegetation changes and degradations will not only lead to the extinction of species at much faster rate but will also make the earth un-inhabitable in near future.

However, the eastern part of the great Himalayas (i.e. the Eastern Himalaya) and its adjoining regions, including Terai and Duars are well known for the pristine vegetation with extremely rich status of biodiversity. But, the region is not escaped from the general trend of population explosion in Asiatic countries. Increase in human population is directly linked to the destruction in the form of developing new and new settlement areas, road and rail links, industrialization, etc. and that is always in an accelerating state.

So, it is now the utmost urgent situation that needs to be addressed just now. We need to take some important decisions if we are really serious to mitigate the effects of highly degraded vegetation, round the world, so that the biosphere may be saved:

1. It is needed to ensure that there should have absolute protection to save the existing vegetation
2. Establishment of new industries in locations far away from the natural forests
3. Strict vigilance over the nature and method of release of industrial effluents
4. All steps need to be taken to improve the environmental conditions
5. At this moment the extraction of natural resources, including the vegetative ones, is far beyond the sustainable limit and such extraction is now much above the desirable limit
6. Timber and innumerable other NTFPs are unavoidable resources for the sustenance of human life and their amount of extraction is proportional to the increase of human population
7. The plantation of selected species, mainly the timber yielding ones, affects natural vegetation so there is plenty of scope to redesign the plantations and the selection of species
8. As far as possible exotics, and also the conifers, may be avoided. Better to select the local broad-leaved species with minimum or no allelopathic effects
9. Spacing between two plants and two rows in plantations must be increased to accommodate the species of other habit groups, i.e. herbs, shrubs, climbers, etc.
10. Species supports local animals as habitat and/or food-providers are to be selected for plantation
11. Forest floor weed clearing should be minimum or may be avoided if possible
12. Plantations will gradually decrease the fertility of the soil and that, in turn, will decrease also the yield of the plantations
13. Protected Areas may be treated as truly protected and their commercialization needs to be avoided or at least minimized. This may affect the treasury turn-over but any such loss is much less than the survival of the biosphere that can't be priced
14. Rules and regulations related to the protection of all types of vegetation must be stricter and need to be seriously implemented with 'no exception'
15. Researches related to biodiversity conservation *in situ*, their evaluation and better conservation strategies need to be given more stress than the almost fully equipment and chemical based investigation proposals
16. With all possibilities we need to reduce our dependence from both, the natural vegetation and from the industries
17. All developmental programs should consider the conservation as their first priority.