Mapping out the resource utilization pattern of human-wildlife for sustainable management practice In Manas National Park

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Manas National Park ($91^0$51'-$90^0$0'E and $26^0$300'-27^0N) with its inimitable ecosystems and assorted habitat types wrap the foothills of Bhutan-Himalayas in the western most part of Assam along the north bank of the mighty Brahmaputra. Mana has a hefty precedent in the conservation history. Commencing from the Proposed Reserved Forest of 1905 to the World Heritage Site and Biosphere Reserve status of nineties Manas had weathered a stretched of up and downs. Ethnic violence had pushed back this Heritage almost to return. Fortunately after an elongated epoch Manas seems to getting back to its original track. Now it's the instant when Manas ought to attract efforts from every concerned community. To promote the park into the sustainable conservation scenario a new protocol of management tool in traditional biophysical angle seems to be needed. The geographical area of the park is enclosed by trance boundary issues with human habitation from entire bends i.e. why it is impossible to practice any management tool excluding the stack holders concerned towards the ecosystem of Manas. This is one of the major causes behind the partial letdown of conservation and management tools in the protected areas around the country. Such an acquit analysis of ecosystem structure and functioning is important to design a decentralized ecosystem management plan. Adaptive management strategy demands research analysis at the inter phase of natural and social sciences. It is important to look these issues in a socio-ecological system, where humans are integrated into ecosystem functioning.

The concept of resource utilization pattern in terms of both people and wildlife can be used in the confluence area of Manas for mapping the vicinity where the human needs overlaps with wildlife habitats. It is reported that the southern most part of Manas is thickly covered with human settlements. Manas is covered with 79 fringe villages with a population of 45,175 dominated by Bodo tribes (46%) and other ethnic peoples (54%). It had been estimated that each house hold of these traditional societies necessitate 214kg of fuel wood per year and 95% had been collected from Manas. Besides this 2, 04,195Cft. wood is also collected from the park per year for daily requirements. Apart from these staticts there are much more examples such as NTFPs of human dependency on the forest ecosystem of Manas. But due to the lake of suitable data it can't be incorporated. With this we can assume that there should be some new protocols to cover the major ecological relation of human and wildlife, degree of human dependency on wildlife and ethnic view point of the particular traditional society towards the forest ecosystem. Instigation of mapping the niche overlapping of human and wildlife, we have

to consider Manas as a larger ecological landscape unit where both human and wildlife enjoys the status of key factor.

Once we get the desired witness of resource utilization pattern an effective management tool can be developed towards the conservation of Manas ecosystem. Previous data shows that the fringe villagers had an average income of 257/- per month, for which peoples had to look towards commercial sector of forest resources. A socioeconomic survey can contribute much in this regard; through which we can manage the lively hood of these peoples and play down the anthropogenic pressure from the forest. Various exercises can be use to formulate a sustainable margin between the human and wildlife in terms of utilization of forest resources, such as Participatory Forest Management where local groups will be equally responsible for jointly managing the forest area. This phase can answer to all the questions, then the preliminary problem analysis is complete and we can begin with the enumeration such as habitat analysis, restoration of damaged forest ecosystem and fragmented wildlife corridors. For this we should have to make an inventory of wildlife in the periphery of human habitations with respect to some major species like Elephants, Leopards etc.

Monitoring activities should be included in the operational plan, and should be agreed during the preparation of the plan in the same way that objectives and activities are agreed. Monitoring is needed as a check that the operational plan is being implemented as planned and that it is having the desired results. The information from carrying out monitoring can then be used to make modifications to the operational plan if necessary. The participatory principles which are being applied in operational planning must also apply to monitoring - in other words, monitoring should involve all forest users or representatives of all stakeholder groups, because the only true aspects of conservation in a human and wildlife intenerated ecosystem are proper management and Monitoring.

Selective readings:

1. Biodiversity & Intellectual Property Rights: Reviewing Intellectual Property Rights in Light of the Objectives of the Convention on Biological Diversity Joint Discussion Paper March, 2001 published by WWF, India

2. Miller, J. R., 2005. Biodiversity conservation and the extinction of experience TRENDS in Ecology and Evolution Vol.20 No.8

3. Bennett, G. 2004 Integrating Biodiversity Conservation and Sustainable Use Lessons Learned From Ecological Networks published by The World Conservation Union (IUCN)

Acknowledgement:

The authors are grateful to Prof. A. Gupta of Assam (Central) University, Mr. N.K.Dey of Biodiversity Conservation Socitey, Ultapani and Dr. H.J.Singha of Birjhora Mahavidyalaya for their continuous encouragement.

(The authors are member of Nature's Foster, a wildlife conservation activist organization of Assam and presently engaged in wildlife research and various community base conservation activities in Manas National Park and other fragmented forest patches of western as well as southern Assam.)