

Community Forestry

Text

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Ecological monitoring for sustainable forest management.

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One of the first forest produces that Keystone Foundation dealt in was honey, for which a very simple monitoring protocol was prepared. Each time the honey hunter brought his produce to the production unit, he was expected to answer a few simple questions on the ecology of the area, the bees and the quality parameters of the honey. His information was backed up by inhouse tests on the moisture content of the honey and the volume etc. Resource maps were also made marking the honey zones and nesting sites. The data thus collected over the past 15 years has helped in keeping a finger on the pulse of the bees and their ecology. Though one cannot claim to have a harvest limit, data clearly shows an average of 3-4 tons as being a constant.

If we were to define monitoring, we would describe it as the need to have a finger on the pulse of the harvested population. When the scope of the monitoring is expanded to include a perspective of the biology, economics and harvests, it becomes an ecological monitoring exercise. Often, we tend to keep track of the productivity of the system and totally ignore the population.

When we started dealing in Amla (*Embelica Officinalis*) about 5 years ago, it was easy to get records of how many tonnes of the fruit were being harvested from each area. But no one was able to keep track of the number of trees and the kind of forests that produced this volume. We took up resource assessment

using biological tools, which were in place through the ATREE manual on Amla monitoring. Plots of one hectare were prepared as a one-time monitoring effort. Through this, we looked at the dynamics of the population. How does amla behave in terms of regeneration, age classes in different habitats and under different pressures like weeds, fire, grazing etc.? All the analysis and the information were built up as GIS layers, which helped us do a spatial analysis.

While preparing the plots, we took along whoever from the village was willing to come to the forest with us. Sometimes, it was one reluctant person while at other times, it was more than 5 curious people. This was one of the most effective ways of sharing the process of monitoring with the community. Very soon, villagers were getting back to us with reports of non-availability or high density of saplings and seedlings. We were able to get the production figures of amla since all the produce in a certain area was sourced by one or the other value addition units located in the valleys.

In case of both honey and amla, resource maps prepared in consultation with the people helped in locating sites and choosing the plots. The sites chosen for assessment were the 'best sites', according to the harvesters of the region. It was interesting to see the variations in the population dynamics within the best sites. A

best site would also mean that harvesting impact there would be the highest. We also went along with harvesting groups at regular intervals to look at the effort involved in the harvest.

Many a time, we found it tough to decide the product that needed to be assessed. The decision was easy in the initial years when honey was the only produce. When we took up Amla for resource assessment, it was because of its high volumes. In our pursuit of Amla, we found resin harvests were high in terms of volume, cultural significance and damage to trees. The resin from *Canarium strictum* was much in demand locally. The other factor that influenced our decision to take it up for assessment was the fact that it was a threatened species with a special ecology. It is a secondary species, needs light for germination and seed dispersal agents like the hornbills and pigeons. We feel we have been monitoring the health of our ecosystem through our assessment of this species.

The forest resource map for each village defines the forest boundary, which villagers respect and maintain. The preparation of resource maps was an interesting exercise since it was one of the tools which helped us discover the key persons in the village, who were good at hunting, fishing, honey hunting etc.

The resource maps also brought out areas of conflict where resources overlap. Often, what they saw as a

Type of product and the resource assessment strategy adopted by Keystone Foundation:

Product	Commercial	Subsistence	Tradition	Tenure	Value	Resource Assessment strategy	Intervention strategy
Resin	High	High	Skill - Medium.IK - Medium	Traditional Councils.	High	Harvests, Biology & Markets	Quality of product.
Honey	High	Low	Skill-HighIK - High	Traditional councils.	High	Harvests, Biology & Markets	Quality of product.
Amla	High	Low	Skill-LowIK - Medium	Set by the FD.	Medium	Harvests, Biology & Markets	Timing of harvests.
Chebula	High	Low	Skill- LowIK - Medium	Set by the FD	Low	Biology & Markets	Revive the market.

resource was something we would have overlooked. For example, in the Kotagiri maps, people mentioned small pools of rainwater as a resource and called them 'pais'. To anybody walking in the forests, these would look like useless puddles of water. But these are the only sources of water for the bees, small animals and people in the dry deciduous forests during the peak summer season.

The resource maps were our baseline document to plan in advance the plots and sites for assessment. The process of grounding truth with the help of the resource maps was an event for the village. Many people would join us in what we now call our 'reki surveys'. The routes were chosen by the villagers, usually with the intention of taking us to some of the most scenic views or waterfalls etc. For us, the route was the pursuit. These trails gave us an opportunity to document the biodiversity of the area and gauge the conditions of the ecosystem. They served as excellent opportunities to understand from the people the use of many species and their inter linkages. The GIS-based analysis was further enriched by the qualitative data that the reki surveys brought in. In our efforts to make the monitoring process a community-based one, we

sometimes leave the people out of the process. The community is involved in the mapping, inventories and as assistants in the fieldwork. The idea is to make them a part so that they share the processes and analyze the findings. The active involvement of the people in our work has ensured that they have then taken the initiative to show us many of the rare and endangered species in their areas and have internalized how we are trying not only to improve the quality of their NTFPs but also to make them part of a larger conservation process where communities are involved as caretakers of their ecosystems.

Taking the Nilgiri Ecological Monitoring Process to Orissa...

Armed with our little experience in ecological monitoring, we visited Orissa on an invitation from RCDC, which is working towards building an inventory of forest produce in Koraput and Rayagada districts. We shared our experiences with the team and did some of the preliminary work together.

Adivasi communities have a crucial dependence on natural resources, especially the forests, which provide much more than just cash to them. During a discussion with

the people of the village Bandhugaon of Koraput district, the villagers told us about all the resources that the forest provides, they came out with a host of benefits like food, fibre, medicine, religious articles, small timber, poison, tools, etc. The forest also provided differently for different user groups in the village: the medicine man, women, midwives, poojaris, children, men, cattle herders. When we asked for some youth volunteers, 14 of them came forward. Together, we made a simple questionnaire relating to the produce, the season, the volume and the area. In groups of 2-3, the youth addressed their questions to specific user groups in the village. Within 24 hours, we had a total list of over 200 produces they get from the forests. The next morning, we asked some villagers of Bandhugaon to accompany us to show us the village perimeter, which we then tracked on our GPS. This was then overlaid on the SOI maps to geo register the village



boundaries. We also met with a group from the village to draw a forest resource map highlighting their forest boundaries with the location of major harvested NTFPs.

Each forest area and every crossing of the stream was called by name. There was strict adherence to boundaries and harvest areas. Conflicts came up with neighbours with regard to hunting areas; these were the same areas that were mentioned earlier as being fire prone. Only a visit to this forest zone revealed the intensity of the pressure. By the end of the day, we had an idea of their forest boundaries, forest resources, forest users and the areas of conflict within these boundaries.

In Karanje village of Rayagada district, we met women who were involved in value addition of forest produces. We completed the village perimeter with a group from the village. We also made a forest resource map with the participation of the whole village. The map showed very clearly forest boundaries and some of the sacred areas inside their forest. In the afternoon, we took a group of women with us on a small reki to show us the food plants available in the nearby forests. It has been our experience that on walks like this, people recall easily and are able to express themselves better. The forest use list had increased by 30 more plants due to the fungi that they had forgotten to mention while doing



the resource maps. On the second day, 2 men and 5 women from the village came along to show us their amla collection area. Once they located what they called a best site for us, we quickly did a 20X20m plot together, counting and measuring the GBH of the trees. All the people then took up the work of counting the amla seedlings. Many of the women could not count but picked a leaf or a stone for every seedling they saw.

Back in the village later in the day, we showed them a species area curve of their amla population and explained what we termed a healthy population. We also graphed the plot we had measured earlier in the day and found that there was a sizeable dip in the sub-adult size classes. The explanation given by the villagers was that these trees were unable to recoup after the lopping of the branches during amla harvests. We felt that these could also be the best sizes for firewood collection. The day ended for us with a very pertinent question from the community: "We are ready to do all these and we think this is important. But what is the direct benefit for us?"

If we had ventured long vision statements of how this would help ensure that there will be plenty of amla for succeeding generation., I doubt if we could have convinced the people of the need for ecological monitoring. Hence, we explained them that if they could put a label

on their produce that said "This produce has been harvested from an ecologically monitored zone", it would fetch better prices for them and an appreciation for their efforts.

The people cannot just be beneficiaries of a new ecological monitoring scheme. They have to become custodians of biodiversity, which doesn't come only with knowing plant names and their uses. It comes with the effort to be part of a process to monitor, evaluate and intervene aimed at conservation.

We have some very fond memories of Orissa - of warm Gond hospitality and natural areas that seemed to be endless. We heard much of the apathy of the state and the pressures of the mining lobby. We saw huge roads being built into forests and adivasi habitations in the name of development. We also saw village forests that were quite



small when compared to the population.

We were concerned that there was a feeling that the forest was an inexhaustible resource. We saw healthy people and clean villages. We also saw a lot of Eupatorium eating into forestland. But we heard no birds and saw no animals in the people's forests.



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