Van Panchayat and Forest Management in Uttarakhand

ABSTRACT: People in Uttarakhand depend highly on forest to draw livestock fodder, fuel-wood and leaf litter for manuring crops. About 38% green feeds come from trees and another 31% from grasses. Oak and other broad-leaf species are fed to livestock during dry season. Due to close interrelation with forest people have developed indigenous way of managing forest resources. This communication underscores the traditional system of Oak utilization and initiatives taken by Van Panchayat of Kimoli village in Uttarakhand for Oak forest management.

People of Uttarakhand have set several unique examples which are very effective from resource management and protection of environment point of views. The world famous Chipko Movement of mid 1970s, Anti-Mining Movements since 1960s, Beej Bachao Andolan of early 1990s, and Maiti movement of 1995 are some legendary examples which opened new vistas to world conservanists. The deeply rooted tradition of community forestry and close interrelation of people with forest, manifested down the generations since time immemorial and high dependency on forest have led people to such noble initiatives. Forest in Uttarakhand comprises about 65% of its geographical area and only 14% land is available for agriculture while more than 70% people draw their livelihood from agriculture and animal husbandry. In such a prevailing situation, relationship of communities with the forest resource is quite natural and has been in existence as a part of tradition. The Uttarakhand village communities consist of small land holders (generally <1 ha per household) who depend critically on community forests for their subsistence and have developed one of the largest participatory forest management institutions i.e. “Community forestry” in the world which is maintained through ‘village community forest councils’ commonly called Van Panachayats (VPs). VPs, introduced in Uttarakhand during 1920s by the colonial rulers as a mechanism to resolve agitation initiated by local communities against colonial design of controlling over the forests, now cover about 12,089 villages with community forest encompassing about 1/3 of the total forested area. These VPs have been able to take initiatives and realized sustainable forest use, mainly Non-Timber Forest Products (NTFPs), to meet the community needs of firewood, fodder and leaf litter for manuring crop fields. Due to small size of land holdings and lack of irrigation facilities fodder is, by and large, not cultivated and the animal rearers have to depend on adjoining forests, grasslands, pastures and wastelands besides agricultural and horticulture residues to meet the fodder requirements. Thus, the high forest dependency has necessitated and inculcated a sense of reverence towards forest in the belief system, tradition and socio-cultural milieus of the local communities reflected in indigenous forms of judicious utilization of natural resources and imposition of regulations to perpetually meet local needs. This communication brings yet another initiative by the people of Kimoli village under Narayanbagarh Block of Chamoli district, at local level to preserve the forest resource, mainly the Oak (Quercus species) locally known as Banjh. Located around the 30° 9' 3.34" N latitude and 79° 18' 43.38" E latitude, Kimoli is a remote village in Pindar River watershed and is about 10 km away from the road or market. People in the village predominantly practice agriculture and animal husbandry.

Methodology: In order to collect primary information, uncontrolled and complete participant observation method after Prasad and Reedy, was followed accompanied by some interviews and discussion with local inhabitants. The uncontrolled and complete participant observation allows researcher to participate in the activities as a member of group keeping the real identity and purpose in disguise so as to make group unaware of outsider’s presence and then observe usual pattern of their activities. Interview and discussion were carried out through the unstructured/informal method of Prasad which provides greater flexibility in the number of questions, method of questioning, sequence of questions, etc depending on the situation, level and condition of respondent. Emphases were always accorded to create congenial atmosphere for effective communication and elicit maximum and accurate information. The interviews and discussion were mainly conducted with old men and women as they are able to narrate more details. Besides, some secondary sources of information are also used.

Result and Discussion: According to the latest livestock census 2003, the State is having a total of 21.88 lakh cattle, 12.28 lakh buffaloes, 11.58 lakh goats, 2.96 lakh sheep, and 0.174 lakh equines excluding donkeys. Out of total livestock feeds, 70% of fodder comes from forest (42% tree leaves and 28% grasses) which directly shows dependency on forest for fodder. However,
according to Singh and Singh\(^5\) as presented in table 1, total green fodder utilization in the state constitutes about 73% and rest of the 26.56% fodder requirement is met through dry fodder. Out of the total green feeds, as high as 37.69% comes from fodder trees, another 30.63% from grasses and seasonal fodder crops from agricultural land constitutes 31.68%. The green and dry feeds are 46.74% and 29.99% less than the required production of 197.42 and 54.31 metric tons per annum respectively. As a whole the State is facing 43.13% shortage of livestock feeds from the total required rate of 251.73 mt per year.

In the Kimoli village cattle and buffalos are, by and large, stack-fed with occasional free browsing in the wastelands, degraded pastures, alpine meadows and harvested fields. Evergreen Oak is an important source of fodder to livestock during the dry season. Much of the biomass extracted is in the form of lopped branches of twigs and collection of herbs and ground litter. For centuries together people have been using Oak biomass as an important source of green feeds to livestock as well as field manure. Despite its continuous use, Oak along with other fodder species have been sustaining in the nearby community forest and other forests due to the fact that people with long time interaction have evolved suitable and sustainable indigenous lopping techniques and time to time deliberately administered regulation for its judicious use. Traditionally, each forest stretch of the village is opened for fodder collection in a phased manner with 3 years of cycle. The evergreen Oak leaves are collected only during dry season from November to April until the tender leaves starts appearing with the onset of spring. During rest of the periods leave extraction for fodder is strictly prohibited, however the ground litter can be collected throughout the year. The oak leaves are lopped along with small branches or twigs and fed to the livestock (Figure 1). Lopping is done in an indigenous way through traditional sharp and curved knife, called dathul, with utmost care. The trees are seldom clean-lopped; rather some branches are kept for the sustenance of tree. Generally, twigs above one foot lengths are lopped and smaller twigs are left behind. It is also believed, as reported by one of the village elder, that the indigenous way of lopping helps ameliorating vigorous branching while those never lopped Oak trees develop fewer branches and thereby yields low fodder quantity. The twigs with remaining leaves, after feeding livestock, are spread outside for drying and beaten up with stick to separate the leaves. The separated leaves along with leaf litter collected from forest are again used as livestock bedding. After coupled of days the leaf-bedding along with the livestock excreta is dumped outside the cattle-shed and eventually the compost is applied into agricultural fields for manuring crops. Manure derived from leaf litter of oak forests supports higher crop yields and labour productivity compared to that from pine forests\(^9\). Manuring, as presented in Figure 1, is done during land preparation or before sowing seeds as well as after the germination.

On the other hand, the branches after separation of leaves are heaped, dried up and subsequently used as a substitute of fuel-wood locally called Jhed or Jheda. Thus, as illustrated in Figure 1, Oak biomass colleted from forest repeatedly serves various local purposes and helps in nutrient re-cycling through different pathways – through

---

**TABLE 1: Sources of fodder, required fodder and fodder shortages in Uttarakhand (Modified after Singh and Singh, 2009)**\(^5\)

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Fodder</th>
<th>Source</th>
<th>Utilization (lakh mt y(^{-1}))</th>
<th>Utilization (%)</th>
<th>Required (lakh mt y(^{-1}))</th>
<th>Shortage (lakh mt y(^{-1}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Green Fodder</td>
<td>Fodder Tree leaves (Fodder trees, bushes &amp; perennial herbs)</td>
<td>39.61</td>
<td>27.67</td>
<td>197.42</td>
<td>92.28(46.74)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grasses (forests, orchards, pastures, agricultural lands, grazing lands, wastelands, alpine grasslands)</td>
<td>32.2</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Seasonal fodder crops (Sugarcane tops and Potato leaves)</td>
<td>33.31</td>
<td>23.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td>105.12</td>
<td>73.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Dry Fodder</td>
<td>Agricultural land (Straws, Stalks, Stovers)</td>
<td>33.26</td>
<td>23.24</td>
<td>54.31</td>
<td>16.29(29.99)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grasses (grass hay and dry grasses)</td>
<td>4.76</td>
<td>3.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td>38.02</td>
<td>26.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Grand Total (I+II)</strong></td>
<td>143.14</td>
<td>100.00</td>
<td>251.73</td>
<td>108.57(43.13)</td>
</tr>
</tbody>
</table>

Note: mt y\(^{-1}\) stands for metric ton per year and figures in parenthesis shows percentages.
animal feeds and crop nutrient – and also serves as cooking fuel. In addition, Oak forests are valuable from the point of view of other tangible and intangible benefits to people. The importance of its use, thereby the associated reverence and perceived fragility together have imbibed within people a sense of responsibility towards its sustainable use. Only evergreen oaks rated as high as pines with early human societies who worshiped pines as other wonders of nature. This invites evolution of an indigenous system of knowledge and practice which ensure sustainability and a culture of conserving nature and all its resources. The traditional decision making bodies such as VPs occasionally imposes restrictions or regulates the pattern of forest resource utilization. Since time immemorial people lived in forest, sustainably utilized it and nurtured the forest that is how the forests thrive with remarkable biodiversity and ecosystem services. The study of Vaishno Devi and Chandika Devi sacred groves in Pithoragarh district shows high floristic diversity with Quercus sp., Cedrus deodara, Aesculus indica, Bauhinia variegata and Rhododendron arboreum considered as sacred species and folk music, dance and poetry associated with these plants. As a cumulative result of which today Uttarakhand is dotted with hundreds of such community conserved forests. In many cashes the cultural landscapes provides a mosaic interwoven by fodder trees and variety of fruit plants. However, with the increasing population and thereby growing demand of agricultural land as well as Oak leaves, its forest is gradually disappearing near the villages. The ongoing changes in agricultural land use are such that fuel-wood and fodder production from cropland is declining while rate of manure (livestock excreta mixed with forest leaf litter) input is increasing implying increasing pressure on forests and meadows. Similarly, the livestock population is increasing or is stagnant, while the availability of fodder and grasses is dwindling (both in quantity and quality) thus resource bases in this context are getting shrunk. Especially in the vicinity of village, Oak trees are subjected to more rapid and recurrent exploitation.

In order to address rapid degradation of community forest specially Oak forests in the vicinity of village, known as compartment area, Kimoli VP organized a meeting on 12th January 2011, attended by village VP members, household heads, women, village youths, etc. After the long deliberations, arguments and counter arguments, Van Sarpanch (head of the forest council), Shri Darshan Singh announced the followings: collection of fodder in the compartment is strictly prohibited; no body shall clear-fell or selectively-fell Oak tree in the compartment forest as well as other community forest; in a day not more than two member of a household shall go for Oak leave; in a month one day shall be observed as off-day for leave collection; those households who have repaired houses or cattle-sheds, etc in the year shall pay Rs. 200/- and those who have constructed new one shall pay Rs. 500/- to Van Panchayat. In order to ensure strict adherence and endurance to these rules a worship of Bhairav devta was solemnized. Bhairav devta is highly revered benevolent forest deity. The priest prepared panchgar from the tools of Bhairav devta and administered it in the form of oath to all members, especially to women as because oak leave collection is the women’s share of activity in the village. However, the women folk staged a protest in the meeting demanding that men should first take the panchgar-oath
to abstain from liquor which was subsequently overruled and all dissidents are forcefully administered panchgar-oath. Although, this new system is sure to further worsen the already drudgery condition of women in the village, as women in the Himalayas spend 8-10 hours in drudgery walking long distances to collect fuel wood and fodder from forest which is mostly (95%) carried out by women besides the household chores\(^1\), at the same time it is very effective practice of conserving forest resource. Besides, a resolution was also adopted in the meeting to imitate labels or numbers on all Oak trees in the compartment and take regular stock so as to prevent clandestine clear-felling. Anybody found cutting down the Oak tree is liable to pay Rs. 25000 to village VP. Customarily, those families having insufficient cultivated land are allowed to lease in and cultivate land in compartment forest. However, the Oak trees in such area are treated as common property resource (CPR). The community forests, pasture land and water resources have been considered as major CPRs based on utilization patterns and traditional management practices\(^14\).

VPs, although has legal status in Uttarakhand, are not provided with any financial and other logistic supports. The revenue collected from the forest is used for different village developmental activities. Since last many years the VP revenue in Kimoli village is being used to supplement the village donation in paying off monthly remuneration of the secondary school teachers in the village. Surprisingly, in clear contrast of government’s tall claims for Uttarakhand being an ‘education hub’ teacher’s payment in secondary section of government secondary school of the village is being met by household donation since last 10 years. Similarly, the senior secondary and secondary school in far-flung Boang and Jhijundi villages respectively are also run by household donations – a gift of statehood to the remote villages. However, the community forests maintained by villagers through the VPs are perennially serving regionally as well as globally important life supporting ecosystem services. The two-year data on carbon sequestration collected from 3 VPs in Uttarakhand having eight forest strata clearly indicate that the community managed forests sequester carbon with mean rate of 3.9 ton carbon ha\(^{-1}\) year\(^{-1}\) across different strata and Oak forest shows 4.4 ton carbon ha\(^{-1}\) year\(^{-1}\) of average sequestration rate\(^3\). According to an estimate the ecosystem services emanating from the different types of forests in Uttarakhand approximately worth 2.4 billion dollars per year\(^4\) and the community forests sequester close to 2.7 mt carbon a year valuing close to 35.1 million dollars\(^2\). Besides, the green cover of Uttarakhand also facilitates perennial south-east flowing river which played major role in shaping rise of culture in the Great Gangetic plains, inhabited by above 500 million people. Arguably, these community forests are not considered eligible for carbon credits in Kyoto protocol which could have otherwise provided an economic incentive to the local communities for carbon service. In fact, involvement of people with their traditional knowledge and techniques in implementation and monitoring forest not only benefit carbon sequestration but also enable restoration and conservation of forests, meadows and biodiversity together with local socio-economic upliftment\(^15\,-\,17\).

J.S. RAWAT\(^1\), R.C. JOSHI\(^2\), D.K. SINGH\(^1\), MANISHA TEWARI\(^1\), DIPTI JOSHI\(^1\) AND R.C. GAIOULA\(^3\)

Received : 4 April, 2011

1Government Degree College, Chaukhutia, District Almora (Uttarakhand),
2Department of Geography, Kumaun University, Nainital (Uttarakhand),
3Government Inter College Karanparyag, Chamoli (Uttarakhand),
4Anon, Baif-Naip Integrated livestock development program