

Traditional Practice of Sustainable Utilisation of Forest Resources among the Ao-Naga Tribe of Nagaland

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Abstract: *The present paper focuses on the significance of forest and its resources in the socio-economic life of the Ao-Naga tribe of Nagaland, their traditional knowledge and practices which have aided them in sustainably utilising the forest resources and have thus helped them in conserving the forest. Like most of the other tribal communities, the Ao-Nagas also have an inextricable link with their forest and considers it as one of the most valuable resource as it provides them with all their necessities starting from food, timber, firewood, raw materials for their arts and crafts, fodder for their cattle as well as shelter. Their dependence on the forest and its resources is such that they regard it as the provider, guide, healer and protector and have found ends and means to utilise the resources efficiently. This gave rise to a well structured ecological knowledge and usage that is very much linked to an engaging day- to-day experience and survival needs, thereby, ensuing in a sustainable use and management of the forest and its resources.*

Keywords: *Ao-Naga, Forest Resources, Sustainable Utilisation, Traditional Practice.*

I. Introduction

Forest and its resources form an essential part of the tribal people's subsistence strategy as it provides them with a variety of products such as food, medicine, firewood, timber, fodder and materials for all sorts of necessities and they hunt as well as fish in the forest to supplement their needs and earn their livelihood. The rationale that they are to a large extent dependent upon the resources from the forest accounts for the fact that they have an extensive knowledge about the local environment of their forest, the terrains and the waters. At the same time, the very awareness that their well-being is based on the long term availability of these resources have enthused them to use the forest resources prudently and also to conserve them for the longer term.

Besides, forest also serves as the traction for a variety of their cultural and symbolic functions. For instance, forest is considered as the sacred abode where their ancestor's spirit dwells and so embodies the connection between the spiritual world of their ancestors and the people. Thus, specific forest areas, waterways, trees and animals are protected and valued as it symbolises and serves as a link with their cultural heritage and ancestral past. They also believed in a number of spirits associated with rocks, mountains, rivers and trees. In fact, many of the tribes are followers of animistic religion where birds, trees and animals serve as the totem of the tribes and clans. They restrict the exploitation of such flora and fauna, thus claiming 'a symbiotic relationship with the environment because of their totemic roots' (Longchar 1995: 62). Such beliefs and practices hold significant implications, as upholding the forest and its resources as sacred results in it being protected, not to be interfered with, thus facilitating a sustainable upkeep of the forest and its resources.

As in other tribal societies, the nature of relationship of the Nagas with the surrounding forest encompasses an extensive spectrum of their life, where forest plays a major role in their overall social and economic life. In view of this, the present paper deals with the sustainable utilisation of the forest resources by the Ao-Nagas in particular. The focus is on the implication of the forest in the Ao-Naga life and how their reliance on the forest and its resources has resulted in their notable tradition of prudently utilising the forest and its resources. The paper discusses the subject matter by employing field data collected from Waromung village by taking in-depth interviews with the villagers, the members of the Waromung Village Council and Waromung Village Development Board and elderly people who are well versed with the history and traditions of the village. In addition, data from secondary sources such as books, journals, articles, Government Official Records, Annual Reports etc were also make use of.

II. Background of the Study

2.1 The Ao-Naga Tribe

The Ao-Naga tribe is one of the major Naga tribe residing in the Mokokchung district of Nagaland, a state in North-East India. The territory of the Ao-Nagas encompasses 92 villages and 4 towns (Mokokchung District Human Development Report 2014: 7). It comprises of long unbroken ranges that are sub-divided into six physiographical ranges, namely, the *Langpangkong* Range, the *Asetkong* Range, the *Ongpangkong* Range, the *Changkikong* Range, the *Japukong* Range and the *Tsurangkong* Range and each village is assigned to the range

on or near it. Based on their language, the Ao-Nagas are divided into the *Mongsen* group and the *Chongli* group, who differs not only in terms of the dialect they speak but also in terms of the costumes they wear and their social and political organisation. Like most of the tribal communities, the life of the Ao-Nagas are intricately woven around nature with forest as the major base as they are dependent on the land and natural environment in which they live and work. Accordingly, their folklores and myths, such as their origin myth in which they trace their origin from *Longtrok*, which literally means six stones (*lung* means stone and *terok* means six), also implies their close affinity with nature.

The Ao-Nagas territory is endowed with profuse forest resources, comprising of deciduous and evergreen forests, rich in flora and fauna. According to the Department of Forests, Ecology, Environment and Wildlife, Nagaland, in 2011 the forest cover in Mokokchung district was 1,349 sq kms which accounts for 83.53 per cent of the district's geographical area. The proportion of area under open forest was about 61 percent, moderately dense forest constituted 38 percent and very dense forest was only 0.22 percent (Annual Administrative Report 2013-14). Out of the districts total forest area, about 96 percent of forest area comes under village forest, which is either owned by village community, clans or individuals. The high percent of forest area under village ownership is due to the traditional land and forest ownership system of the Nagas where the land and forest is owned and managed by the community. And such traditional practices of the Nagas are under the protection of the special provision of the Indian Constitution Act 1962, Article 371 A, according to which, 'no Act of Parliament in respect of, a) Religious and social practices of the Nagas, b) Nagas customary laws and procedures, c) Administration of civil and criminal justice involving decision according to the Naga customary laws, d) Ownership and transfer of land and its resources, shall apply to the State of Nagaland unless the Legislative Assembly of Nagaland by a resolution so decides' (Nagaland State Human Development Report 2004: 13).

2.2 The Area of study

Waromung is an Ao-Naga village that falls under Mokokchung district of Nagaland state, India, and it is the 'first *Mongsen* village on the *Changkikong* range' (Mills 1973: 11). The name of the village 'Waromung' is derived from the Ao words 'Waro' meaning crow and 'mung' means roost, literally meaning "where the crows roost" and was so named by the first settlers after the swarms of crows found on the carcass of a boar in the area selected for their new settlement (Alemchiba 1961: 9), thus, the name itself denotes the intimate affiliation the villagers have with nature. The village is divided into four *Mephus* or local residential units, namely, *Mongsen Mephu*, *Teyong Mephu*, *Chungli Mephu* and *Waromung Compound* and has a total of 600 households with a population of 3000 (Waromung Village Development Board, 2011). The nearest town from the village is the Alongkima town, an offshoot of the village which was set up in the land donated by the Waromung and Dibuia villagers to the government of Nagaland for setting up the Changkikong Circle Administrative Headquarter as well as for various developmental purposes.

The primary occupation in Waromung is agriculture. Other forms of occupation like teaching, nursing, road labour, government employees and religious service as Pastorship have been introduced in the village. However, despite being employed in various non-agricultural vocations even these households engage in some or the other form of agricultural practice as a subordinate means of livelihood. In addition, the villagers are also engaged in forest related economic activities such as collection of Non-Timber Forest Products, basketry, wood crafts, hunting and fishing, animal husbandry, rubber plantation etc.

Similar to other Naga villages, in Waromung also, the land and forest is owned and managed by the community and it is never sold to outsiders. And this has significant bearing in relation to the utilisation and management of the forest and its resources. With reference to ownership of land and forest, there are three types of land in the village, viz., *Yim li* or Village land which is owned by the community and under the supervision of the *Samen Menchen* (Village Council of Waromung), *Kedong li* or Clan land under the ownership of the different *kedongs* (clans) of the village and *Aza li* or Individual land which is owned by the individual households. In terms of utilisation, there are land for residential area known as *kenei*, land for jhum cultivation known as *losa*, land under bamboo, betel plant, palm groves and tree plantations known as *yokya*, forest land or *aong* and other land that includes road ways, waterways etc. *Aong* (forest land) are densely covered with trees and other wild plants and animals, and such areas mostly belong to the whole village community. Waromung also have extensive tracts of virgin forest land which are locally known as *Min*, it is covered by trees as old as 100 years and has not been penetrated by humans. These are areas of rich biodiversity and are a home for different species of flora and fauna.

III. Forest in the Socio-Economic Life of the Ao-Nagas

3.1 Forest and Customs

The prominence of forest in the Ao-Naga way of life is apparent in all their practices and traditions. In the past, various forest products were employed in one way or the other in every aspect of their social and cultural life. For instance, in the past bamboo splinters were used to cut the umbilical cord during birth, bamboo mats were used to wrap the dead body for burial, plantain leaves were used during birth to wrap the placenta and during the performances of rituals to wrap the offerings and sacrifices, and certain plants, birds and animals were also used by the Ao-Nagas as sacrificial offerings and to observe divinations.

3.2 Forest and Religion

The Ao-Nagas relation with the forest also has a religious connotation, where their activities were intrinsically linked with the land and forest and have a significant bearing on the preservation of their forest. The ancestors of the Ao-Nagas were *Limapur* (animist), who believed and worshipped a number of spirits associated with rocks, mountains, rivers and trees. Forests, paddy fields, bamboo groves, streams, peaks and caves were considered to be the abodes of the spirits as such social and religious ceremonies were performed there. Consequently, such sites in the forest, rivers, trees were considered sacred and felling down of trees, collecting forest produces or cultivation were prohibited from these areas. And such beliefs and practices have helped regulate the utilisation of the forest resources and conserve the land and the surrounding forest.

For instance, in Waromung village, *Jangjanglung* a majestic boulder which is located at the south of the village was worshipped as a deity by the villagers in the past. According to legend, *Jangjanglung* was the guardian and protector of Waromung and used to warn the villagers about impending pestilence or danger to the village, about the success or failure of harvest or whether a head-hunting expedition would succeed or fail. There are also many beliefs associated with *Jangjanglung*. It is said that none would spit near the stone or thrust the spears on the ground as it was feared that otherwise the person concerned would be affected with facial paralysis. Persons going for collection of bamboo shoots in the vicinity of the stone were required to leave at least one uncut sprout in every cluster, otherwise they could never expect to complete the load even though they went on collecting the shoots throughout the day. While clearing the jungle for shifting cultivation, if one felt thirsty he/she was not to say so, instead they have to say that he/she was hungry or else rain would pour down the whole day. Now, with their conversion to Christianity, the practice of worshipping the stone has ceased but the villagers still held the beliefs and reveres the sacred boulder. And till date, the land and forest surrounding the *Jangjanglung* is still maintained and preserved by the villagers.

3.3 Forest and Everyday life

In their daily life also, forest resources are used by the Ao-Nagas as well as by the other Naga tribes for various purposes. Their diets consist mainly of wild leaves and vegetables, bamboo shoots, wild meat, fish, wild mushrooms, tubers and wild fruits collected from the forest. Also, different parts of plants and animals are used as a part of their traditional therapeutic remedies to treat various diseases, injuries and infections etc. Moreover, the rivers, streams and ponds of the forest forms the main source of water for the whole village, and forest is the source from where the people collect timbers, boulders, sands, coals, timbers for constructing their house and furniture and for other basic necessities. Their household items also consist of wooden furniture, wooden plates and cups, hallow bamboo containers for fetching and storing water, mats and baskets woven from bamboo strips and canes, all of which is made from raw materials collected from the forest. And even their tools and implements, their dress and ornaments, musical instruments, decorative and recreational items are made using natural products.

3.4 Forest and Economy

Forest based activities forms an integral part of the Ao-Naga economy. It ranges from collection of food, firewood, medicinal plants, building materials and fodder to hunting, fishing and cultivation. Agriculture which is their major occupation is intimately linked to the forest. They practiced both *Tekong lu* (Jhum cultivation) for which they have to clear the forest areas and *Tsü lu* (Wet Rice cultivation). And forest products like wood, bamboo, timbers and wild games are a good source of income for the villagers; especially the womenfolk collect Minor Forest Products like wild mushrooms, green leafy vegetables, fruits, broom grass, honey, herbs etc. from the forest and sell it to supplement their household income.

IV. Traditional Ecological Knowledge of the Ao-Nagas

The fact that they are largely dependent on the forest and its resources has led them to acquire and have an intimate understanding of the forest environment and its habitation. They are quite adept with the flora and fauna, their local distribution and habitat preferences, life histories and their seasonal manifestations, behaviours and usages. Such Traditional Ecological Knowledge of the Ao-Nagas is deeply linked to their day- to-day

experience and survival needs and has helped them to utilise and sustain the natural resources. Through generations, such knowledge is passed on orally through their folktales, folksongs, proverbs, cultural values, beliefs, rituals and community laws. Some of the Traditional Ecological Knowledge of the Ao-Nagas related to their socio-economic practices are-

- (a) They ascertain the fertility of the soil based on the colour of the soil, dryness and wetness of the soil, cycle of years and yield, soil digging and refilling method, types of weeds present, presence of water source nearby etc.
- (b) When plenty of earthworm droppings are present, it is taken for granted that the plot is fertile and good harvest is anticipated. The bigger the size of droppings the land is considered to be more fertile.
- (c) Presence of ferns and wild cardamom are taken as signs of infertility. Thus, the soils of such areas are considered infertile even if the soil appears to be matured soil.
- (d) They believe that on 21st June the sun sets in its seat and consider this day as the best day for transplanting paddy as they believe that the paddy crops transplanted on the longest day of the year bears more grain.
- (e) According to the waxing and waning of the moon, they observe 'good' or 'bad' days to sow and harvest their crops as well as to extract forest products like bamboo, timber, palm leaves, wild vegetables, honey bee etc. They believe that the seeds sown on the 3rd, 5th, 7th and 9th day after the appearance of young moon during the sowing season gives luxuriant growth (Jamir and Lanunungsang 2005: 164). They also believe that the products extracted on the 'bad' days get attacked by insects and decay faster whereas those extracted on 'good' days do not. Such practices regulate the extraction and the unnecessary wastage of the forest produce (Aier and Changkija 2003: 359).

V. Practices In Relation To Forest Resource Utilisation among the Ao-Nagas

Reiterating the foregoing discussions it can be stated that forest is intricately interlinked with the life of the Ao-Nagas. Being aware of the significance of land and forest in their lives, they have adapted practices which have helped them to utilise the resources sustainably and conserve it for the future as well. Some of these traditional practices in relation to forest resource use and management practiced in Waromung Village are-

5.1 Restriction against Misuse of Forest Land and Products

Destruction of the forest and the environment by exploiting the forest resources, starting forest fire, and misusing the forest premises for carrying out any illegal activities like drinking, gambling etc., are strictly prohibited and if anyone is caught indulging in such activities, they are penalised by the Village Council.

5.2 Felling of trees from the forest

- (a) Everyone can collect dry leaves or twigs and branches for fuel from anywhere in the village. But for cutting down of trees, they have to take permission from the Village Council or the clan elders or the individual owner depending on the area of the forest from where they need the trees.
- (b) The trees are never cut and uprooted completely, two or three feet of the tree trunk are usually left, as branches grows again on the trunk and the growth of these branches is fast because of the strong trunk with its deep root and such practices have helped in maintaining the tree cover in the surroundings.
- (c) When they cut down the trees for timber and firewood or clear the forest for cultivation, they do not clear the forest completely. The normal practice is to cut those trees that have grown sufficiently big and leave the smaller ones to grow. This can be said to be a method of harvesting the forests, so that the forest itself is not destroyed.

5.3 Restrictions on Logging Activities

Logging is a very profitable business and many of the villagers were engaged in it. But as the extensive logging was destroying their forest and its rich resources, the villagers started restraining extensive logging within the village. However, trading of timber and firewood is still practiced under certain given regulations such as -

- (a) Individuals are allowed to sell timber, firewood from their own individual land but no one is allowed to sell it on their own will from the village forest.
- (b) Selling of timber and firewood from the village forest is managed by the Village Council. The Village Council inspects the forest for areas with matured trees and puts out a tender for selling timbers from these areas.
- (a) Logging or cutting down of trees is allowed only from those areas with matured trees.

5.4 Firewood and Bamboo Reserves

The villagers also maintain *yokya* or firewood and bamboo reserves in the immediate surroundings of the village boundary, where naturally grown and useful species are preserved and trees and bamboos for

domestic needs are maintained. Such practice reduces the pressure on the forest since they get their daily requirement of firewood, poles and bamboos for house construction, firewood and other basic necessities from the *yokya*.

5.5 Agricultural practices and conservation of forest

The villagers are aware of the crucial role of land, forest and water in relation to their agricultural system, thus they have adapted practices and methods which have helped them in maintaining their land, forest and water sources sustainably. Some of these methods based on their traditional agricultural practices and their indigenous knowledge are-

- (a) The villagers practice jhum cultivation also known as shifting cultivation or *Tekong luyim*, a system where they cultivate the jhum field for two years and keep it fallow for 10-15 years. The practice of keeping the land fallow for 10-15 years gives enough time to restore the fertility of the soil, regenerate the vegetation and the forest and maintain the stability of the land.
- (b) The villagers practice the *pok* system in which the distribution of field for cultivation is followed systematically according to the cycle of years. Accordingly, all the villagers cultivate in the same block of land and no individual cultivator is allowed to cultivate even in his own land except on the selected plot unless the Village Council gives consent for that purpose. Such practice sustains the land and forest, and maintains the forest and ecology of the village.
- (c) While slashing/ clearing the forest for cultivation, they do not cut down or uproot the trees completely. If the trees are very big, they lobbed off the branches only and the rest of the trees are cut 8 cm above the ground and the coppices are allowed to grow again. These tree stumps and poles helps in controlling soil erosion and its re-growth helps in the regeneration of forest in the surrounding areas.
- (d) They burn the jhum field to clear the area for cultivation, *alu merokba* or burning of the jhum field is done as it adds nutrients like potassium and phosphorous, directly to the soil in the form of ashes. The burned soils are spread uniformly throughout the field so that the nutrients are evenly distributed. Burning of jungle also control potential weed re-growth, fungus and insect infestations and the high temperature during burning also enhances the release of other native soil nutrient elements. According to an Ao legend, this knowledge was not known among the people until Lutaba of Imchenchar clan burnt his field and got magnificent harvest thereafter, men followed his examples.
- (e) They plant trees along with the crops in their jhum field and during the fallow period the forest are regenerated by allowing these trees to grow. Later, in the next cultivation cycle after the fallow years, these trees are harvested for use as timber and firewood.

5.6 Hunting

Hunting is a part of their tradition and constitutes as one of the important activity of their economic life. However, the community are conscious of the importance of the life of the wild creatures, so to check uncontrolled hunting they maintain strict practices such as-

- (a) They do not hunt during the breeding season. Especially hunting of female species during the breeding season is strictly prohibited.
- (b) Hunting or bringing of the young animals and birds to home from the forest to keep as pet is usually discouraged as they cannot survive long once they are displaced from their natural habitat.

5.7 Fishing

Use of chemicals and explosives during fishing is prohibited and the Village Council imposes fine on anyone caught using it. Instead they make use of natural products like leaves, seeds and roots of plants and creepers to trap the fishes. For instance, in Waromung, a local fruit known as *retsa*, the leaves of *akha* (walnut) tree and creepers like *suli* and traps made of bamboo are used while fishing. Such traditional methods of fishing are still being followed nowadays and it has helped in maintaining the water source, the aquatic flora and fauna and prevents it from the hazardous effects of explosives and chemicals.

5.8 Prevention of Forest Fire

Forest fire is one of the main causes which destroy the forest. Some of the preventive measures adopted to prevent such incidents are mentioned below:

- (a) Before burning their fields, proper fire lines are made by clearing the surrounding areas so that the fire won't spread to the nearby forests.
- (b) During the jhuming operation, a specific day is fixed for the whole community to burn their field so that even if the fire spreads beyond the marked area, it can be easily controlled with the help of people in the adjacent area.

- (c) If someone caused fire in the forest due to their carelessness like not putting off the fire properly, smoking, throwing burning match sticks etc., penalties is imposed on them.

5.9 Afforestation

The villagers also plant trees in their fields, barren areas of land and in and around the village surroundings. Here, actually planting of native species of trees and those which are adaptable to the local conditions is encouraged as they are prone to grow faster and survive longer without hampering the fertility of the soil. They also keep in mind the utility of the trees, and prefer to plant those trees which are economically viable as well as ecologically suitable to the climate and soil of their land.

5.10 Collection of Minor Forest Products

Medicinal plants, edible fruits and leaves, tubers and roots for human consumption and to feed the pigs and other animals, can be collected by anyone from anywhere. But the general principle is that they should not be wasted. Any destructive method invites censure or even punishment in the form of fines.

5.11 Domestication of Wild Plants

The villager's plant wild edible plants, vegetables, fruits and flowers in their jhum fields and homesteads for the nutritional supplements and medicinal values they get from these produces and such practices have helped in preserving the wild products.

VI. Conclusion

From the foregoing discussion, it is evident that forest forms a major base in the social as well as in the economic life of the Ao-Nagas. As they rely on the forest to a great extent, they have established an intimate relation with the forest and this has given rise to their ecological wisdom and through ages they have adopted practices where the forest and its resources are sustainably used and its unnecessary destruction or wastage is kept in check. And such practices have contributed to the existence of extensive tracts of forest with rich biodiversity in their region. Besides, the growing awareness about the importance of forest and its impact on the environment and climate has led them to take up further initiatives to conserve their land and forest.

However, though the Ao-Nagas are conscious of the fact that the forest and its resources should not be squandered but should be safeguarded as a resource base for the present as well as the future generations, what remains uncertain is how long can they resist the influence of commercialisation of timber, firewood and other forest products? Because even at present, they are encountering difficulties due to various factors such as transformation of their traditional subsistence tribal economy to a cash oriented modern economy, population growth, government policies, high commercialisation of economically potential timbers and Non-Timber Forest Products etc.

Thus, it is essential to introduce community and environment friendly policies which are suitable to the local environment and from which people will get better benefit, better marketing facilities for the forest products so that they can earn a decent livelihood without excessively exploiting the forest and its resources and documenting their traditional ecological knowledge as well as educating the people about it, creating more awareness of the advantages of forest and its resources and a strong support from the government can aid the Ao-Nagas as well as the other Naga communities to uphold their practice of sustainable utilisation of forest and its resources, thereby helping them to conserve the forest, which in turn will assist them in enhancing their social, economic and cultural life.

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