CHAPTER VI

CONCLUSION

Summary

The research study on utilization and management patterns of forest resources in Wokha district of Nagaland was undertaken with the main objectives to study the status of forest cover, classify the types of forest resources, to study the utilization patterns of forest resources by the people, to study the impact of human activities on the forest leading to problems of forest resources management and lastly to propose improved management strategies for sustainable use and conservation of forest resources and restoration of ecological balance. In the research study purposive sampling method was adapted for the selection of eighteen sample villages from the three different ranges in the district and based on the prepared questionnaires focused group discussions were conducted so as to obtain the datas required for the study. The importance and the role of forest and its resources in the life of the people of the study area and the various forests related concerns that have evolved because of the activities of the people have been discussed in the preceding chapters.

Despite the important role played by forest in the socio-economic and traditional life of the people in Nagaland, the discussion in chapter III clearly indicates that of late forest has become a waning resource because of the fact that the forest cover in the State has shown a reducing trend which is also the same in the case of the study area. The land is the most prized possession of the Nagas so is also with the Lothas and because of the unique land holding system in the district more than 99 percent of the forest land is privately owned and the remaining is owned by the State Government.

Forest resource is termed as multi-purpose resource as it benefits the users in
many ways. The types of forest resources utilized in the study area have been discussed in chapter IV and it is observed that modernization which has brought along development in many fields coupled with various factors such as the location and distance of the villages from the main commercial centre i.e., Wokha town, transportation and communication facilities and storage and marketing facilities have influenced the use of forest resources to a great extent leading to the variation in the patterns of utilization in the district. Nature has endowed the study area with varieties of tree species which are mostly used as timber for construction, for making furniture, household and decorative items and as firewood. Despite the use of other sources of fuel for making fire, firewood is widely used in the study area which is one important reason for the declining forest cover as discussed in the preceding chapter. It is observed that the role played by the non-timber forest products (NTFPs) such as leafy vegetables, meat of wild animals and birds, shoots, flowers, fishes, bamboos, fruits, insects, worms, snails, etc., is immense and the rural population are greatly dependent on the NTFPs for food, medicines and various other uses. Besides, the NTFPs were also in the past associated with their beliefs and rituals. The utilization of other NTFPs such as rocks, sand, mineral and petroleum resources are gradually increasing because of the potential that these resources have in generating employment and income to the people in the study area. Apart from domestic consumption, bulk of the forest resources are sold in the markets which acts as a good source of generating monetary income for the majority of the people residing in the villages.

Close proximity to the forest and the traditional faith and beliefs practiced by the Lothas indirectly helped in the conservation and management of the forest resources although conservation in its strict sense was not practiced by them. Over the years there have been a realization of the importance of forest and the role that it
plays in the socio-economic life of the people as a result of which various management plans and practices have been introduced so as to wisely and sustainably utilize the available forest resources keeping in mind the needs of the future generation. The traditional and modern management practices have been discussed in the later part of chapter IV which brings to light the management patterns in the study area.

Though majority of the people are gradually becoming aware of the need for proper management strategies and the effective implementation of the same, it is observed that management practices could not be effectively implemented in the study area because of many reasons. Since the people living in the villages constitute 78.96 percent of the total population in the district, their livelihood activities are in many ways associated with forest which contribute to management problems of forest resources.

Of late the development of infrastructures coupled with the increase in population has been a major concern for ineffective management of forest resources in the study area. The need for development and expansion of settlement areas have prevailed over the need for forest areas which ultimately imposes adverse affect on the people in the long run.

The fact that the district is dominated by agrarian society where jhum cultivation is the dominant agricultural practice which requires the clearing of large areas of forest land is another major concern which causes large scale deforestation. The decreasing trend of fallow period and the clearing of vegetated areas have also triggered various environmental problems such as soil erosion, climate change, loss of natural habitat for flora and fauna, absence of dense vegetation cover, etc.

Other factors such as ineffective implementation of forest Laws and Acts,
ineffective implementation of alternative livelihood schemes, lack of markets and storage facilities, poor transport and communication facilities and use of modern machineries which contribute to the problems of forest resources management in the study area are discussed in chapter V.

The research study is based on extensive field survey and first hand interaction with the people at the grass root level as well as review of related literatures and since no research study of this kind have been conducted in the study area as well as in Nagaland before the outcome of the study can be a base for the research scholars, academicians, students, NGO s, Administrators and policy makers. The present study can also be a good source of information about the study area such as the location, area, people, physiography, drainage, soil, geology, vegetation, etc.

6.1. Findings

a) All along forest has been playing a very important role in the socio-economic and traditional life of the people. Though forest was associated with the traditional beliefs of the people but with the coming of Christianity the traditional beliefs are no longer practiced. Despite the setting in of modernization in the study area majority of the people especially the rural population are still dependent on forest for their livelihood.

b) The utilization of forest resources in the sample villages differed with the location from the proximity of the commercial centre i.e. Wokha town. The villages located near the commercial centre sold most of the forest products in the markets for generating monetary income which were facilitated by the presence of markets and accessibility. On the other hand the villages located far from the commercial centre utilized the forest resources mostly for
domestic consumption and very little was sold due to the absence of markets and poor transport and communication facilities.

c) The types of minor forest resources utilized for and domestic consumption and small scale commercial purposes included leafy vegetables, meat of wild animals and birds, shoots and flowers, aquatic life forms, bamboos, fruits, etc. The most used minor forest product is leafy vegetables. For large scale commercial purposes the types of forest resources that are utilized includes logging, firewood extraction, extraction of rocks and boulders and coal mining. Extraction of rocks and boulders is concentrated in the Wokha range while coal mining is carried out mostly in the Sanis range and in some parts of Bhandari range. Firewood is the most utilized forest product in this category.

d) Disparity in development has also led to the variation in the patterns of utilization of forest resources. For instance, the villages located in the Wokha range have better access to markets and transport facilities because of which they are able to sell the products without much difficulty whereas in the case of the villages located in the Sanis and Bhandari range most of the forest products are utilized for domestic consumption due to the absence of markets and good transport and communication facilities.

e) Besides the utilization of forest resources, there is ample scope for eco-tourism in the study area. The mesmerizing natural landscape, the traditional lifestyles in the villages, places associated with myths and legends and the presence of varieties of wild life especially wild elephants and the migratory amur falcons can be an attraction for many tourists.

f) Except for the ‘oli epha’ which is widely practiced even in the recent times, the other traditional management practices are gradually declining with time. It was observed that factors such as loss of ethical values, the increasing need
for livelihood income and the introduction of new management methods are responsible for the declination of the traditional management practices.

g) In order to reduce the pressure on forest and its resources various projects and schemes aimed at providing alternative source of income and livelihood are being implemented by different State Governments departments which have to some extent contributed to the management of forest resources in the study area.

h) Variation in the management practices were also seen in the study area and it was observed that there were maximum involvement of NGOs and the Village Councils in the villages located within the proximity of the main commercial centre i.e., Wokha town as compared to those that were located far from the town. This is so because of the fact that more forest resources are extracted so as to meet the growing demand of the people settled in the urban centre which has led to the need for better management plans and more participation by the people. Some positive development that are taking place in order to protect and conserve the forest and its resources are the formation of Network for protection and conservation of Mount Tiyi reserve forest involving four villages which are located within the proximity of the reserve forest, formation of NGOs such as Natural Nagas, Green foundation Nagaland, etc.

i) Sanis and Bhandari ranges that are known for the presence of wild elephants contribute to the conservation of wild life to some extent. Because of the presence of elephants except for the expert hunters the other hunters fear to venture in the elephant infested areas which help in the management of wildlife.

j) The process of modernization has brought development in many fields as a result of which effective forest resources management cannot be achieved in
the study area. Factors such as increase in population, infrastructural development, use of modern machineries and implements and the commercialization of forest products for generating monetary income have contributed to the problems of forest resources management in the district.

k) Various alternative livelihood schemes and projects introduced by the different departments are not being implemented effectively. Most of the projects and schemes require time, energy and land for implementation but it was observed that due to the absence of research and survey at the grass root level and lack of co-ordination between the different departments two or more projects are introduced at a time which the beneficiaries are unable to manage and thus leads to the failure of the projects and clearance of more forest lands resulting in the decrease of dense forest cover.

1. In spite of the successful implementation of the some of the projects and schemes and the vast scope for production of agricultural and horticultural crops, the lack of cold storage and marketing facilities in the district especially in the Sanis and Bhandari range for have become a major bottleneck in tapping the potential and the people of the region are unable to fully obtain the benefit from them. The poor transport and communication facilities are also causing hindrances for effectively managing the forest and its resources as most of the products derived from the alternative sources of livelihood cannot be transported to other places for sale.

m) Though there are various forest Laws and Acts for protection and management of forest and its resources there is evidence of random exploitation of forest resources in the district resulting in the scarcity and disappearance of some
wild animals and birds. In the villages located far from the commercial centre most of the forest products are sold openly without any restrictions.

n) Jhum cultivation is the dominant agricultural method practiced in the district, and it engages about 84 percent of the total households in the sample villages practiced jhum cultivation. The amount of trees cut in one jhum year is calculated at about 4806 truckloads. These figures support the fact that jhum cultivation is the main driver of deforestation in the district leading to decrease in forest cover.

o) Lack of small and big industries in the district for processing and preserving the agricultural and horticultural products is also a very important drawback which needs to be looked into so as to help in the proper management of forest resources.

6.2. Suggestions

For proper utilization and effective management of forest resources the following are the suggestions that are based on the present study.

a) Though the people are gradually becoming aware of the importance of forest yet they are unable to effectively conserve and manage them due to lack of scientific management skills and knowledge and absence of reliable alternative source of livelihood. Thus, imparting scientific management skills and knowledge by organizing workshops and seminars at administrative circle levels can help in the proper utilization and management of forest resources in the region.

b) Emphasis can be given on the development of eco-tourism in the region as it has the potential to provide alternative source of livelihood to the people without destroying the forest ecosystem. Once eco-tourism is developed the
people will automatically take care of the forest by themselves because of the income that they receive through eco-tourism.

c) There is a clear linkage between forest resources and livelihood dependence, thus, Conducting proper research in order to study the ground truths at the grass root level is the need of the hour which will not only contribute towards effective implementation of the alternate livelihood practices but this will also help in proper and effective management of forest resources in the region.

d) For the effective implementation of providing alternate sources of livelihood co-ordination among the different departments should be encouraged so as to provide only what the farmers can handle and not over burden them with many projects. Micro level research studies can be conducted in order to study the problems, the needs and the feasibility of the projects at the grass root level before the implementation of the projects. After the implementation of the projects they should be reviewed from time to time so as to identify the loopholes or problems and rectify them for effective implementation. This can be facilitated by development of storage and marketing facilities and construction of good roads.

e) For protecting and conserving the forest and its resources strict enforcement of the various forest Acts and Laws should be carried out by the concerned department in collaboration with the district administration, police and the village councils which can help in checking random exploitation of forest resources.

f) Since firewood is widely used in the study area which contributes to decrease in the forest cover, other sources of fuel such as bio-gas which is environmental friendly and efficient can be introduced phase wise as substitute
of firewood. The dependence on firewood may not stop fully but this can reduce the use of firewood to some extent.

g) The reserve forests in the villages under consideration can, in collaboration with the State Government or Government agencies, be converted into botanical gardens which will not only help in the conservation of flora and fauna but this can be a source of knowledge for the upcoming younger generations.

h) Establishment of forest resources monitoring cell equipped with the latest scientific technology such as GIS and Remote Sensing and experts in the field can be initiated. This cell can help in monitoring the utilization of forest resources and subsequent forest cover change and forest related problems and identify the most affected areas which can be verified through field surveys. Necessary steps can thus be taken so as to effectively manage the forest resources.

i) Because of the unique land holding system most of the forest land in the district belongs to private owners and it was observed that the forest and its resources are being exploited randomly. For proper utilization of the resources the people in the study area can be encouraged to demarcate selected areas for different purposes such as area reserved for firewood, area reserved for timber, area reserved for agriculture purposes, etc.

j) Unlike the other States in India where more than 90% of the forest land are owned by the Government, the forest land of more than 90% in Nagaland and Wokha are privately owned, thus, practical approach should be adapted for effective implementation of forest related programmes and projects.