CHAPTER III

THE STATE POLICY OF FOREST CONSERVATION

Myanmar's forest management has traditionally been focused upon the maintenance and enhancement of the whole forest ecosystem, and not merely to ensure a continuous supply of wood and non-wood forest products. Its objective has been to manage forests and forest estates in a way so as to maintain their biological diversity, vitality, regeneration capacity, productivity and their ability to fulfill relevant ecological, economic and social functions, now and into the future.

The main priority of the Forest Department has remained the long-term commercial development of Burma's teak forest. Forest officials have also sought to implement rationalized forest use. Scientific forestry has thus been associated with forest protection on ecological grounds, as well as with the promotion of non-teak timber production. Burma's forests were managed much more intensively in the last century, than had been the case in the late nineteenth century. The development of forest law and forest policy in light of the changing socio-economic and environmental conditions, as well as the presence of community involvement, has already been highlighted, and old and new concepts on the establishment of plantations have been elaborated upon. In the Community Forestry Instruction of 1995, local community participation and the idea of joint forest management was described and the community forestry process was linked with the private forestry sector.

3.1 History of Forest Management

3.1.1 Management of Forests during Pre-colonial Days

The Burmese kings basically designed the forest administration system in order to tax and control forest use. Teak was made royal property by the King in 1775 and its extraction controlled by girdling. Seasoned natural teak loses almost all its moisture; therefore, the trees and logs of such trees were floated in the streams during the rainy season. They were brought in rafts down to the timber depots and sawmills

along the river. Revenue from customs posts set up along principle rivers as well as roads regulation, controlled movement of all forest products.

The British annexed Burma over three periods. The territories of Tenasserim and Arakan were annexed after the first Anglo-Burmese War in 1824-26, the province of Pegu after the second Anglo-Burmese War in 1852, and the rest of the country after the third Anglo-Burmese War in 1882. One of the most important colonial legacies in Asia was the importing of new ideas, which transformed the politics, economics and ecology of the conquered territories. That transformation was particularly evident in Burma, where the country's forests bore the imprint of powerful new ideas of social practice. For three decades after the first Anglo-Burmese war, the British subjected the Tenasserim forests to unchecked exploitation according to *laissez-faire* principles. The ensuing degradation only confirmed what scientists had all along predicted, that laissez-faire forestry and long-term timber production were incompatible. However, the rapid depletion of this resource led to a new approach following the second Anglo-Burmese war (1852), an approach based on the creation of reserved forests dedicated to long term timber production. The related efforts of forest officials to persuade shifting cultivators to plant teak under the Taungya forestry system can be traced; however, cooperation was only achieved after much conflict. Moreover, growing scientific doubts about the system in a broader context of economic retrenchment, led to its demise. In 1829, the Government ended its teak monopoly. Powerful timber merchants pressured senior officials in Calcutta and London, and in 1828 they may have colluded to defraud the Government of revenue. These merchants anticipated less regulation under British rule than they had experienced under the Burmese state, and were consequently furious at the prospect of permanent state intervention (Bryant, 1997).

In 1853, the British Government declared the Pegu forests state property and prohibited unauthorized teak extraction. Burma initiated plantation forestry as early as 1856, when small-scale teak plantations were established by the Taungya method. Dr. Dietrich Brandis joined the British service in 1856 as superintendent of the teak forests of Pegu division in eastern Burma. He introduced the Taungya, in which Karen villagers provided labor for clearing, planting and weeding teak plantations. In return, they were allowed to plant crops for the first few years between the trees. As

the teak trees grew, villagers were moved to new land and the process was repeated. As a result of this process, many villagers became dependent on the state forestry service, and local resistance to the state takeover of forests became increasingly difficult. Scientific forest management started only in 1856, when Brandis was given charge of the Bago forests. Following this, early in 1857, new rules were published, bringing the Bago forests under regular conservancy and controlling the removal of teak trees. Soon after, Dr. Brandis drew up the first working plans for Bago teak forests. He started work in a climate of political, economic, and ecological uncertainty. Scientific forestry was a management system designed to promote long-term commercial timber production, as the transition from pre-industrial forests to industrial tree plantations was made. The Forest Department quest to introduce scientific forestry also brought it into conflict with shifting cultivators, who created hill clearings in the forest (Bryant, 1997).

3.1.2 Management of Forest during the Early Colonial Period

In 1827, the British Colonial Government worked the Tenasserim teak forests by government monopoly. But, under pressure from the powerful timber merchants, the Government ended its teak monopoly in 1829 in favor of the *laissez-faire* system, which permitted private farms to extract as much teak timber as they wished from any forest in the region, with the main conditions being that they must keep the government informed of their operations and that trees with a girth at breast height of less than four feet, must not be felled. These merchants had projected their sales under the Burmese state regime, and were consequently furious at the prospect of permanent British state intervention. Yet to attribute the advent of *laissez-faire* forestry in Tenasserim simply to pressure from the business lobby would be to neglect the significance of debates going on within the colonial state itself. In effect, the government was divided on the issue of the teak monopoly, between those advocating state intervention and those favoring free trade. Various scholars have shown how imperial perceptions of forests in the British colonies were conditioned by attitudes towards nature formed in the domesticated and largely tree-less British landscape. Transferred to the colonies, these attitudes that encouraged forest clearance, were synonymous with progress. Imperial attitudes towards the forest were also

conditioned by attitudes about political and economic organization, which in turn affected human-environmental interaction. Thus, it is only when the political and economic context of the time is recognized that it is possible to understand why *laissez-faire* forestry persisted in Tenasserim for so long, and despite the best efforts of a succession of opponents to have it ended.

In 1829, private firms in Tenasserim were essentially free to extract teak as they wished. Forest rules were few in number and limited in scope. In any case, they were ineffectual in the absence of a forest service entrusted with their enforcement. But this state of affairs, which is here termed *laissez-faire* forestry, never went unchallenged. Throughout this period, government officials and scientists warned of the consequences of unfettered timber extraction. More importantly, in an altered imperial context, the assertion of state forest control at last became politically feasible. That *laissez-faire* forestry resulted in extensive over-harvesting is well known. Less well understood are the political and economic conditions that produced this outcome, and the reasons why an alternative system were not adopted.

The minimum harvestable girth of four feet was raised to six feet and the traders were required to plant five trees for every one extracted in 1841. However, in the absence of adequate qualified supervising staff, these rules were unrealistic and ineffective. The traders did not obey the rules; rather they maximized yields and profits. In 1853, the British government declared the Pegu forests state property and prohibited unauthorized teak extraction. One of the main points in this pronouncement was that, in the management of forests, the teak should be retained as state property and that all teak trees for harvesting should be selected, marked and girdled by the superintendent who was appointed as the superintendent of Pegu forests by Dr. Brandis. The *laissez-faire* practices continued in the Tenasserim forests until 1857. It was a bitter lesson learned in the history of timber harvesting in Myanmar (Bryant, 1996).

Towards the end of 1859, there was public pressure to allow private enterprises to exploit the teak forests, and Dr. Brandis was forced to agree to the introduction of the permit system, whereby twelve-year leases were granted to private agencies to harvest teak timber from tree selected and girdled by the government. (Blanford, 1956).

Around 1870, the Forest Department was divided over how to guarantee future teak supplies. One group, led by the conservator, promoted the establishment of teak plantations, whilst another group under Brandis's direction, favored reservation of the best tracts to be converted gradually into more or less compact teak forests (Bryant, 1996). Although the teak plantations continued to expand, reservation became the Forest Department's main method to ensure long-term teak production. Rule-breaking and over-harvesting were integral to laissez-faire. As a result, the laissez-faire practice had exhausted the best forest tracts by the late 1880s and cleared the Tenasserim forest of marketable teak in less than thirty years. The primary goal in the unreserved forests was to protect reserved species and regulate trade. The Burmese Forest Act of 1881 introduced a special administrative requirement associated with the management of teak forests. The need to tailor legislation in order to maximize efficient resource extraction was the main policy under the management of natural forests in colonial days.

The colonial state's response to the events in Tenasserim is the subject of debate; however, the transition from *laissez-faire* to scientific forestry in the mid-nineteenth century provoked much conflict. Timber traders, peasants and shifting cultivators, all resisted the imposition of state forest control. In the process, a dynamic process of control and resistance was established that was to characterize Burmese forest policies far into the twentieth century (Bryant, 1996). The state monopoly on teak, the girdling of teak before extraction, the monitoring and taxation of the flow of timber and other forest produce at revenue stations located along the main highways and river routes, was perpetuated by the British in their management of Burmese forests during the colonial days. Emphasizing regulation, enumeration and calculation, scientific forestry was ideally suited to the rationalistic outlook of the colonial state.

By the end of the nineteenth century, the need for working plans became more urgent as the Government allocated teak leases to European firms. Beginning in 1902, the Government of Burma ordered the accelerated creation of working plans according to the principle that effort be expended to increase the commercial value of its forests. In the early twentieth century, the growing complexity of forest management was reflected in the department's greater size and specialist

appointments, as well as in its growing emphasis on non-teak timber production and the protection of ecologically-sensitive areas. Bureaucratic development and scientific management were thus linked in a process which enhanced state forest control. In contrast, long term considerations led the Government to concentrate control of the teak trade in the hands of European firms at the turn of the century. This move simplified forest management and was part of a broader rationalization of forest activities. In the nineteenth century, European firms had been the bane of the Forest Department. A few indigenous contractors were also permitted extraction leases. In 1920, a special department within the Forest Department called the 'Working Plans Circle Division' was formed, in order to formulate district level working plans (Forest Department, 2002).

Forest management in Myanmar has always been founded on the concept of a sustained yield from the natural forests. In 1937, the Government revised the policy to establish 600 ha of plantation annually. The total area of plantations by 1940 was 56,130 ha. No progress was made in plantations afterwards, but rather, many were destroyed during the Second World War. After the war, scattered plantations were developed to enrich teak stocking at annual planting rates of no more than 20 ha. Plantation establishment was curtailed during the period of insurrection from 1948 to 1962. In those days, it was adequate to rely on natural forest management with compensatory planting, without taking risks on a new venture with massive plantation forestry.

The original aim of forest conservation, even after the post-war period, was to attain up to 30 percent of the country's area under the reserved forests. The Myanmar Forest Department began to control forest access systematically in the 1870s. Reserves were created and the non-teak sector was regulated. These measures exacerbated conflict and forest administration became one of the least popular aspects of colonial rule. The confrontation between forest officials and peasants was particularly fierce in the early twentieth century, as the conversion of low-lying forests to agriculture land increased pressure on the plains reserves. Moreover, the closing of the agricultural frontier and growing peasant deprivation coincided with the emergence of a nationalist movement, resulting in restrictions on forest access which became a central component of the anti-British struggle.

3.2 Development of Forest Law and Forest Policy

Forest policy after the colonial days was used to administer and manage the state forests on sound scientific principles, in order to produce the highest, sustained annual yield of timber for export and home consumption, while trying to improve the condition and stocking of valuable tree species.

In 1885, with the annexation of the whole of Myanmar, the country became a province of India. The Forest Policy objectives described in 1894 were directly relevant to tangible benefits only. The four main classes of forest defined in the policy were (1) protection forests, essential on climatic or physical grounds, (2) commercial forests, for supply of valuable timber for domestic use and export, (3) local supply forests, to provide for the local community the essential needs of timber, fuel wood and other forest products, and (4) pasture land. The forestry sector was linked with, not only economic elements, but also environmental stability, bio-diversity and ecological balance. Consequently, sustainable management of the forests emerged as the most important concept in the development of the country's forest resources. As such, it has since become inevitable that policy intervention is called for as an instrument in maintaining a balance between utilization and conservation, to benefit both man and nature.

The original Burma Forest Act of 1881 was amended several times and finally printed as the Forest Act 1902. The rules under this Forest Act were published as the Forest Rules in 1911. The Forest Act 1902 and Forest Rules 1911 worked well under the conditions of abundance of supplies over demand. However, such a system came under steadily growing stress as a result of increasing demand for forest products and competing uses for forest land soon after independence, since the country had to be rehabilitated, or rebuilt, after World War II and the subsequence unrest. Myanmar's forest resources had been administered for over many years under the Forest Act of 1902. This Act was amended several times: in 1906, 1912, 1920, 1926, 1933, 1940, 1948 and 1962, in order to accommodate the changing political and socio-economic conditions of the times. After gaining independence from the British in 1948, the Forest Policy of 1894, with a few amendments, continued to serve as the guide for forest management and administration in Myanmar. Although the need for a new forest policy had been a recurring theme of forest officials since 1948, the issue was

not accorded a high priority by the Government. The central purpose of the Forest Department was the long-term development of Burma's teak forests. The combination of a functionally-defined department and scientific principles was a felicitous means of promoting that goal.

Finally, the Burma Forest Act 1902 was replaced in 1992 and the State Law and Order Restoration Council (SLORC) enacted the new Forest Law on November 1992. The Forest Law 1992 had a broader outlook, covering environmental, economic and social aspects such as conservation of bio-diversity, establishment of commercial forest plantations for sustainable production by both the State and private sectors, and the formation of community forests for the local peoples. The Forest Law focused on a balanced approach towards conservation and development issues implicit in the concept of sustainable forestry. Highlighting environmental and bio-diversity conservation, the law encouraged community forestry and people's participation in environmental and forest management.

This Forest Law, passed by the Government in November 1992 to replace the 1902 Forest Act, is still the basis of the Forest Department's renewed mandate. Although the new law replicates much that is in the old colonial law, it goes beyond its predecessor insofar as it links forestry management explicitly to social and environmental considerations. The national Forest Policy, prepared by the Forest Department in 1994, was designed to complement the new Forest Law. This new policy statement sounds excellent, but in terms of actual implementation and practice, the Forest Department has faced and still faces several issues and challenges. The development of forest law and forest policy in line with the changing socio-economic, environmental and community involvement is highlighted. In conformity with new forest policy and legislation and for the purpose of supporting the economic development of the country and regaining environmental stability and addressing the basic needs of local communities, active participation by the rural population is urgently needed to plant trees in barren land, and to reforest degraded areas (Myanmar Forest Policy, 1995).

However, this statement was no longer adequate in light of the Forest Department's expanded mandate under the 1992 Forest Law. Thus, the National Forest Policy, as with the Forest Law, emphasizes the need to integrate the goals of

timber production, wildlife and environmental conservation, the role of the private sector in the timber industry, the maintenance of biological diversity, and also social forestry. In order to meet the goals contained in the Forest Law and National Forest Policy, the Forest Department is planning an unparalleled expansion in the areas designated as 'reserved', a long standing goal of the Forest Department. Unfortunately, the ethnic insurgency combined with a lack of staff, has prevented any real progress in this quarter.

3.3 The Forest Management System after Independence (1948-1988)

After independence in 1948, the Burmese State sought to restore order in the forest as part of a general attempt to re-introduce a system of rationalized forest use in the country. In the process, however, it sought to modify that system in light of the political and economic goals of the post-colonial leadership, most notably, the promotion of national security in the face of widespread insurgency and the nationalization of key sectors of the economy, in keeping with socialist ideals.

A central feature of Burmese forestry policies in the post colonial era has been the clash between the politically and economically driven reality of the State Timber Board's (STB) activities, and the efforts of the Forest Department to reintroduce a system of rationalized forest use based on scientific principles in the country. Burma's socialist experiment changed the way in which the Burmese State went about managing the forests. The advent of SLORC rule on 18th September 1988 initially appeared set to alter very little in this equation. The move was widely seen at the time as merely a cosmetic change designed to facilitate the restoration of order in the wake of widespread anti-regime protests during the spring and summer of 1988. However, the Burmese political and economic situation by the mid 1990s, was quite different from that which existed prior to1988 (Forestry in Myanmar, 1995).

In the early seventies, the Forest Department successfully convinced the higher authorities that the State had been exploiting the natural forest resources, without paying much attention to investing or to supplementing forest capital in the form of large-scale plantations. The population of Myanmar increased steadily from 28.9 million in 1970, to 36.3 million in 1983 and 44.74 million in 1996 and was expected to reach 50 million by the turn of the twenty-first century. The demand for

timber and other forest produce, especially in light of the country's reform and development policy, has therefore increased significantly. The increase in population has also asserted greater pressure on forest land, through conversion to agricultural land. At the other extreme, the closed forest cover which was 57 percent of the country's area in the early sixties, had dwindled to 47.8 percent by the year 2000. The compensatory plantation concept was challenged and commercial concepts of supplementing wood capital in the form of commercial plantations were initiated. The forest harvesting policy of Myanmar now, is to harness the full potential of the forests in a sustainable manner with the least wastage and the least adverse impact on the forest floor and the residual forest stand. The objective is to maximize economic, social and environmental benefits for the country and its people. It is implemented through the application of the Myanmar Selection System (MSS) (Ohn, 2004).

The forest harvesting policy proved to be sustainable in the past, when the population of Myanmar was comparatively low and demand for raw materials from the wood-based industries belonging to the private sector was much lower than the present day. The Forest Department has now proposed, in its forest management plan, to promote the system of harvesting wood. However, market development, the utilization of lesser used species and more efficient processing in the wood-based industries, will all be essential components in the efficient review of and establishment of plantations. This will provide a more attractive incentive system to the private sector and might be an appropriate solution for the future of forest management (Myanmar Forest Policy, 1995).

The advent of rule by SLORC in 1988, marked a new phase in this process of adapting the colonial model of forest management. Yet the underlying dynamic of attempted state control and popular resistance has endured and has continued to condition Burmese forest policies in the late twentieth century and beyond. Burmese forest policies need to be understood in relation to three notions: (1) The forests as contested resources, (2) the Forest Department as a resource manager, and (3) conflicting perceptions of forest use. Since 1988, the role of private enterprise has been emphasized by a SLORC regime seemingly bent on re-orienting the Burmese economy along market lines (Bryant, 1996). The government recognizes the importance of forestry education and training in forest sector development. Myanmar

forest management in the 1990s took place in a distinctive political and economic context that set it apart from both the colonial and the socialist era. After years of stagnation the Forest Department has assumed a more prominent role than before, in the management of the country's forests.

The Myanmar Forest School has been functioning for over 100 years. Degrees in Forestry are currently being awarded by the Institute of Forestry. The institute offers not only the degree of Bachelor of Science in Forestry, but also degrees at the Masters level. The Forest Research Institute was established in 1975 as a Division of the Forestry Department. Recognizing the pivotal role of forests and forestry product research in support of successful forest conservation and development programmes, existing research facilities should be have been developed into dynamic research institutions with sufficient manpower and facilities to carry out their functions more effectively.

3.4 The Forest Management System from 1988 to the Present

Today, the primary focus of monitoring forest resources has shifted beyond forests and trees. As development activities have intensified and increasing population has spread onto marginal lands, the problems of deforestation, soil degradation, wetlands drainage and diminished biological diversity have become paramount environmental concerns. In light of this, the government enacted forest legislation in 1992 to provide strong support for forest and watershed management, environmental conservation, reforestation and participatory forestry. The legislation liberalized the timber trade by permitting private sector involvement in establishing industrial plantations on a commercial basis, in line with the government's philosophy of moving towards a market-oriented economy. Rules and departmental procedures to implement the legislative mandates under the Acts are still being finalized.

In February 1990, the Myanmar Government created the National Commission for Environmental Affairs (NCEA). In practice, the NCEA delegates its works to four specialized sub-committees which meet three or four times a year, to discuss problems and propose solutions concerning: the conservation of natural resources, the control of pollution, research, information and educational matters, and international cooperation. Since 1990, the main task of the NCEA and its sub-

committees has been to formulate the National Environmental Policy. Although still in the planning stages in 1994, the general aim of the policy was to promote an integrated approach to environmental management in-keeping with the national goal of sustainable development and the country's international treaty commitments. It was based on state of the art environmental knowledge, as well as the support of an informed public.

The National Environmental Policy would provide a framework for the subsequent enactment of a series of environmental laws and regulations. The Government's environmental agenda also encompassed the country's active participation in international agreements and organizations concerned with environmental matters. According to the prescribed forest management policy, the Myanmar government decided to join the International Tropical Timber Organization (ITTO) in 1994, and has drawn up a national Tropical Forestry Action Plan. It is also active on a regional level with wildlife conservation, as part of its formal commitment to the protection of endangered wildlife.

The old Myanmar Forest Policy was formulated as a new policy in 1995, to approach conservation and development issues implicit in the concept of sustainable forestry and highlighting environmental and bio-diversity conservation. The bio-diversity and ecosystem services, being the natural heritage of the country, deserve to be safeguarded for the benefit of both present and future generations. The Myanmar Forest Policy explicitly outlines the political communities, goal and objectives for national development. The policy focuses on six imperatives which are: the protection of soil, water catchments, ecosystems, bio-diversity, genetic resources and national heritage sites; as well as sustainable forest management to ensure in-perpetuity the level of benefits both tangible and intangible for the present and future generations; basic needs such as, fuel, water, fodder, shelter, food and recreation; efficiency in harnessing the full economic potential of the forest through increased productivity, while controlling the socio-economically and environmentally unacceptable side-effects; the peoples participation in forestry, wildlife and nature conservation activities and establishing plantations and increasing non-farm incomes by applying community and agro-forestry systems, and finally; raising the awareness of the community in general and more particularly decision makers and politicians, with

regard to national socio-economic development, soil and water conservation and environmental stability essential for sustainable life. The policy is structured on a needs-based approach. It underlines sustainable forest management without impairing the production capacity, while meeting the social and community needs, and conserving the biological diversity and environmental stability. Issues which require further attention are protection and conservation of the forest resource base, reservation of production and protected areas, forest management, participatory forestry and extension activities, sustainable utilization of resources, harvesting and utilization, and, capacity building at all levels.

This new Forest Policy provides opportunities to the private investor in the form of the establishment of forest plantations and also to the rural communities with the formation of village woodlots. It enlists people's participation in forestry so that communities can become actively involved in forest conservation and development, and in growing trees for meeting their needs and increasing off-farm incomes through adoption of community forestry and agro-forestry practices. The Community Forestry Instruction (1995), focused on the management of forest nurseries and forest plantations, so as to enable them (the villagers) to fulfill their own basic needs for fire wood, farm implements and small timber. Thus, the new Forest Law and Forest Policy create a way for the rural communities and private investors to cooperate and participate in the conservation and utilization of forests.

Foresters have to change their attitude and strategy in managing forest resources; they should not think only about revenue, or attaining targeted production quotas but at the same time, should pay equal attention to the social, environmental and bio-diversity conservation of degraded ecosystems. These tasks are made even more difficult without active and voluntary participation of the local communities. Through community participation, local people should be given responsibility for sustained forest management and in turn preserve precious resources.

3.5 Shifting Cultivation as a Resource Management

3.5.1 Forest Management in Shifting Cultivation (*Taungya*)

As developed in the nineteenth and early twentieth centuries, the shifting cultivation (*taungya*) system of plantation forestry represented a far-sighted attempt to

establish teak production on a long term basis. Indeed, its adaptation of what many colonial officials reviewed as a destructive and primitive form of agriculture guaranteed its popularity in a broader imperial context. Even today, the use of shifting cultivation for commercial tree planting remains an acknowledged agro-forestry technique and is promoted as a cure for various social and ecological problems. In the process, the *taungya* forestry system has entered the international foresters' lexicon, taking its name from the Burmese word for shifting cultivation, taung (*hill*), and ya (*cultivation*). Practiced more extensively in the hills of Burma than anywhere else in the Third World, *taungya* is a type of dry agriculture that consists of a variety of seasonal agricultural crops and trees (Bryant, 1997).

Shifting cultivation in Myanmar can be classified into two major types. The first is shifting cultivation in the forested area, that is *Taungya*, and the second type is shifting agriculture in the plain lands, where no forested area exists in and around the vicinity of *Ya*. Due to demographic pressure, shifting cultivation that used to be sustainable has become no longer sustainable, requiring shorter rotations. Many environmental conservationists believe that shifting cultivation is one of the major causes of forest degradation and depletion in Myanmar, as in other tropical countries, thus threatening the sustainability of the forest estate and the forest resources. However, shifting cultivation is not merely an economic practice for the landless poor living in and around the forests. It is both a cultural practice and a way of life evolved in consonance with the physiographic set up. This method of cultivation has thrived for thousands of years, especially for the ethnic groups residing in the hilly and frontier regions. An estimated two million families or ten million people are involved in shifting cultivation in Myanmar, especially in the hilly regions. In the Bago mountain range of Myanmar, "taungya teak plantations"[1] have been in successful operation for more than one century and have been considered a rare success story among tropical plantations.

However, soil fertility may decrease after the first cycle under the *taungya* system, because a large volume of biomass is removed from the forest ecosystem through the harvesting of teak. In addition, it has been pointed out that monoculture

---

[1] Departmental *taungya* - where the farmer carries out jobs for the Forestry Department related to plantation establishment and agricultural crop production in return for a wage.

teak plantations can cause various ecological problems such as severe insect damage or soil erosion. Though the *taungya* system in Myanmar has a long history, little research has dealt quantitatively with these issues. Consequently, the future sustainability of the system needs to be examined more closely. The traditional *taungya*[2] cropping system was upgraded and applied scientifically, integrating traditional processes in order to enable and sustain increased production, and at the same time assist in environmental conservation and forestry development (Tint, 2002).

The Forest Department has used various means to restrict shifting cultivation in teak tracts. In pre-colonial times, cultivators paid annual imposts to specially appointed Burma Governors. The British continued these imposts in the form of capitation and *taungya* taxes, but collected them with greater efficiency. The Karen also faced prosecution for breach of forest rules. Since teak was scattered throughout areas that they cleared, forest officials assumed that wherever there were *taungya*, there would be evidence of teak destruction. Further, when caught, the Karen had no legal recourse since, as already noted, shifting cultivation was not recognized as conferring a right to the land under colonial law.

Conflict between the Forest Department and shifting cultivators followed a different course. In the teak-bearing Pegu Range (*Yoma*), forest officials sought to win over the hill Karen through introduction of the shifting cultivation (*taungya)* forestry system. However, this system represented at best an uneasy compromise between two essentially incompatible land uses and failed to resolve conflict in non-teak areas. Although independence in 1948 marked the advent of indigenous rule in Burma, it did not lead to a reduction in conflict over forest access. Rather, such conflict became caught up in the broader civil unrest associated with armed insurrection, as divergent political and ethnic groups fought for power in the wake of the British' departure.

On the one hand, it has meant that for much of the post-colonial era the traditional struggle between the Forest Department and the peasantry has been largely absent, quite simply because the former has not been in a sufficiently powerful position to enforce systematically the access restrictions that were the source of so

---

[2] Where the farmer grows agricultural crops using traditional methods in return for use of the land for a limited period of time

much conflict during the colonial era. Forest officials have been keen to re-impose the access rules that are the integral part of scientific forestry, but a lack of resources and secure forest access has hindered their ability to do so, outside of selected central areas.

The attempt to regulate shifting cultivators has been similarly handicapped, even though a succession of programs has illustrated the Forest Department's commitment to addressing the problem of shifting cultivation. On the other hand, conflict over forest access has been embedded in the context of a wider armed struggle, as various groups have struggled for control over forest access and revenue. In the 1990s, the Burmese state looked set to restore order soon in most of the country's forests; as a result, the Forest Department may soon be in a position to re-impose systematically, access restrictions in reserved forests. The Forest Department is necessarily confronting once more the problem of shifting cultivators. At the height of the insurgency, forest officials had neither the time nor the opportunity to regulate *taungya* systematically. As a result, shifting cultivators were able to cut their clearings, more or less as they saw fit. However, as the Burmese army restored order in the central area, the Forest Department resumed its campaign to reform shifting cultivation practices.

Cultivators in and around the Pegu Range (*Yoma*); for example, were persuaded to undertake commercial plantation work according to the *taungya* forestry scheme in the late 1970s. In the upland areas meanwhile, watershed management schemes were devised in order to stabilize shifting cultivators through incentives, demonstrations and technical assistance. As forest management is extended gradually to border areas, this goal is being pursued by forest officials with regard to the estimated 2.6 million shifting cultivators living in these areas. However, it is difficult to foresee how the pacification of the shifting cultivators in remote areas will be achieved without extensive conflict, especially given the Forest Department's ambitious reservation campaign.

Such cultivation is a type of dry agriculture combining various techniques with partial forest clearance, shallow cultivation, multiple cropping and field rotation, with which to produce food and cash crops. With an extensive network of hills, Burma is home to groups who traditionally practice diverse forms of shifting

cultivation. In the formulation of colonial policy, the tendency was to simplify complexity by classifying all such practices as *taungya*. Forest officials were not especially concerned about the social and ecological nuances of shifting cultivation. Their main concern was to protect the Pegu-Yoma teak forests for long term commercial exploitation, from a small and predominantly Karen population which cleared fields annually there (Ohn, 1995).

Table 3.1: Current Status of Forest Cover in Myanmar

Sr. No.	Forest Cover	Area(sq-km)	Percentage of Total Land Area
1.	Closed Forest	293,269	43.3
2.	Degraded Forest	50,963	7.5
3.	Forest affective by Shifting Cultivation	154,389	22.8
	Total	**498,621**	**73.6**

During the early 1960s, the campaign was all but abandoned as diverse ethnic groups joined the Karen in their struggle against the Burmese central state, and much of the country's hill areas fell under insurgent control. Burma's forests were witness to some of the most severe fighting since the Second World War. However, those forests were often not only the site of conflict between government and insurgent forces, but also the subject of conflict as rival armies fought for control over commercially valuable forests. In a general context of spiraling military expenditure, timber revenue was a coveted prize for all of Burma's combatants. The flow of the conflict was such that the scope and nature of Burmese forest management tended to fluctuate in keeping with the fortunes of war.

The Burmese State controlled the country's most valuable commercial forests. Faithful to the colonial model, the Forest Department sought to re-introduce the system of rationalized forest use first elaborated in the region by the British in the late nineteenth century.

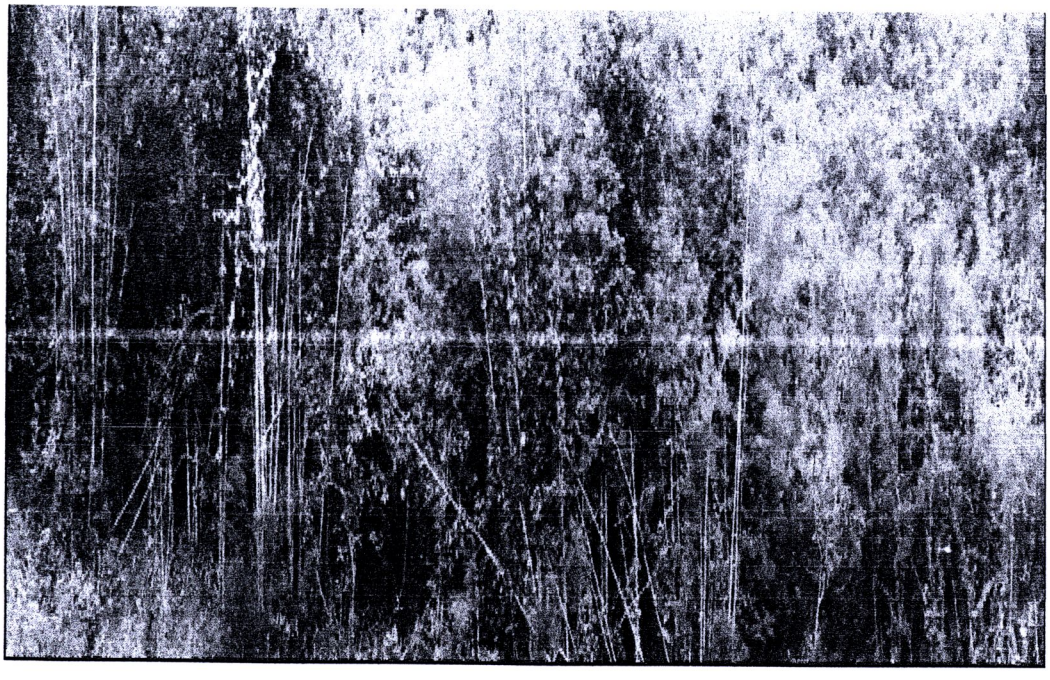

Figure 3.1: Teak Plantations Established using the Taungya Method

A counter-insurgency campaign known as the Four Cuts (Phyat Lay Phyat)[3] was developed by the Burmese army in order to deprive insurgents of the local food, funds, intelligence and recruits that were essential to their operations. First applied systematically in the Irrawaddy Delta against Karen and Communists insurgents in the late 1960s, the Four Cuts campaign was subsequently focused on the strategically and economically important Pegu-Yoma area. An operation named *Aung Soe Moe* began in late 1973 and ended in April 1975, when the Burmese army cleared these hills of the last insurgent forces. The importance of the Burmese army's victory in the Pagu-Yoma with regard to Burmese forest management, cannot be overestimated.

3.5.2 Shifting Cultivation (*Taungya*) as a Method used for Reforestation

During the ninteenth century, teak plantations based on the *taungya* system were established in reserved forests in the Bago Mountains by the colonial

---

3 'Four kinds of cutting' (government policy to suppress insurgents)

government, and Karen areas were demarcated where the Karen people could freely practice shifting cultivation. After the First World War in 1918, the *taungya* system became standard practice in Myanmar plantation forestry. Traditionally, the poor rural people have a great attachment to their native place and are unwilling to move themselves to new surroundings. But in order to reduce the degradation of forest and to raise the living standard of rural farmers near the forest, the controlled agro-forestry type shifting cultivation or taungya method, was used by the forest department. With the increasing population among the hill Karen, their families and community, more land was needed for the increased production of staple food. As with efforts to introduce *taungya* forestry elsewhere in the colonial world, the Burmese experience highlighted the short term possibilities, but long term difficulties, associated with any attempt to reconcile two essentially incompatible types of forest use. There was certainly cooperation under this system, but it was a cooperation which occurred against a backdrop of coercive forest management in aid of scientific forestry and commercial timber extraction (Bryant, 1997).

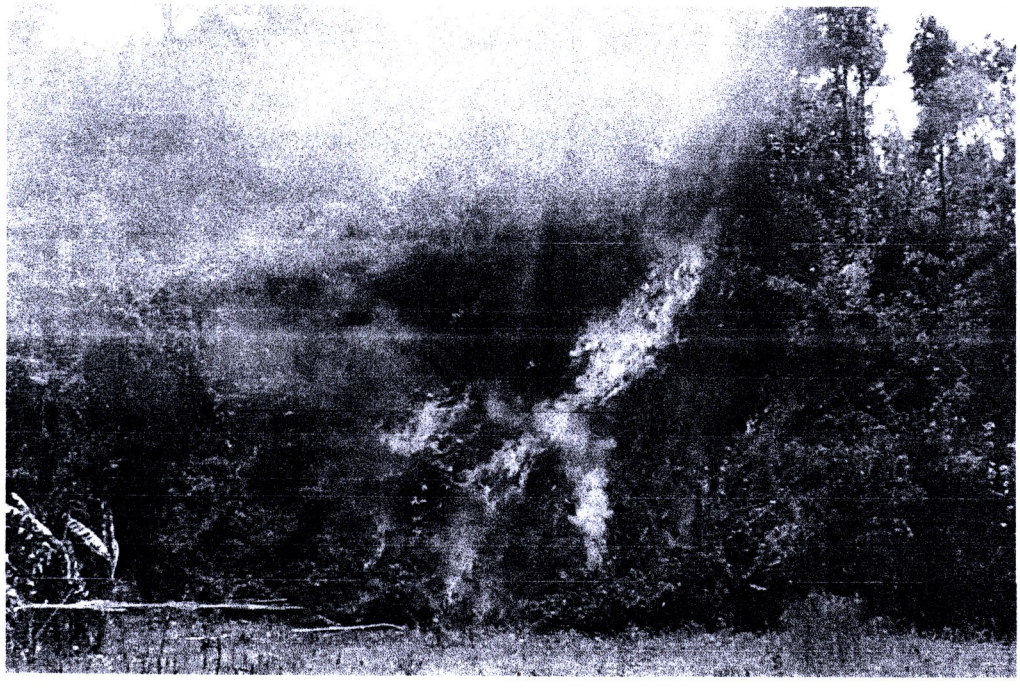

Figure 3.2: Taungya (Shifting Cultivation) Burning in a Hill Region

Myanmar forest resources were administered by the Forest Department in 1978 by using the *Taungya* method. In this method, local people and shifting cultivators from other communities could grow their agricultural crops in allotted lands. Simultaneously, they took part in forest plantations. Through this method, not only could the Forest Department implement the forest plantations program at a low cost, but also the cultivators could use the agricultural land and norms provided by the department. These silvi-agricultural practices helped solve the national land-use problems and the development of the national economy, by raising the living standards and socio-economic conditions of shifting cultivators in the rural areas. In every step of the plantation establishment, both concerned Forest Officer and *taungya* cultivators took part in this method, which was very profitable or symbiotic for them and could provide for the national economy (Bryant, 1997).

Taungya cultivators grew the groundnut and paddy (rice) as major crops. If the profitability of the cultivated crops were compared, the profit of the rice production had a negative value by unit area. The net profit of paddy and groundnut in the lowlands was not different and that of sesame gave them an incentive to grow. The prevailing mood of forest officials was thus one of paternalistic cooperation with shifting cultivators. Under the *taungya* system local shifting cultivators were considered as temporary labor and did not have a chance to participate in the planning and management process of plantations. They also did not have land-use rights and did not receive benefit sharing opportunities from plantations. Moreover, the Forest Department failed to adapt to the local people's desires and did not contact the people to see what they really needed. Participatory plantation management was initiated in Myanmar in 1996, but needed a truly democratic society in which to work. Under this framework, all the steps of the management process, such as decision-making, problem identification, data collection, analysis, alternative formulation and final choice must be open to participation. During the summer time, the *taungya* cultivators cut down the trees and bushes, burning and re-burning (*kyun-khwe*) to get the agricultural land prepared. Ploughing and planting of paddy starts with the help of the monsoon. The majority of cultivators plant paddy (*Le*) or paddy (*ya*), or both varieties for their daily consumption.

Unclear government policy still exists as the greatest barrier for practicing citizen participation in forest management, and as a consequence, plantations in inaccessible sites are usually congested and overstocked (Ministry of Forestry, 1999). Another important barrier is bureaucratic professional foresters, who have traditionally held the power on forest resource management.

3.6 Summary

In Myanmar, not only the State economy, but also social system, employment and the economy of rural communities depend mainly upon forest products. Consequently, dense natural forests have been lost and continue to be lost up to the present day. Although a systematic extraction plan for timber harvesting under the Myanmar Selection System (MSS) was formulated, the Forest Department is now facing some problems and difficulties in implementing the plan as scheduled. All foresters and observers know very well about the significant goods and services provided and rendered by natural forests in terms of bio-diversity richness, amelioration of weather conditions, soil and water conservation, and successful cultivation.

Broader political and economic considerations have affected the prospects of shifting cultivators under the *taungya* forestry system. By the early twentieth century, improved transport and communications links, combined with a much more elaborate colonial administrative system, served to enhance imperial control and so the need for Karen political support through schemes such as *taungya* forestry, was accordingly reduced.

The growing power of the colonial state was reflected in the growing efforts of forest officials to control shifting cultivation in reserves in the early twentieth century. The Forest Department began to regulate *taungya* in Karen areas more strictly. The fate of *taungya* forestry was conditioned by broader changes in the colonial economy and related state finances. Indeed, it was with the onset of the great depression in the early 1930s and the context of general and massive government retrenchment, that the government of Burma in 1935 declared that *taungya* forestry was too speculative an endeavor to be justifiable on economic, or any other grounds, and ordered its gradual

termination. The demise of this system heightened the financial insecurity of cultivators, who then depended on emoluments from the Forest Department. For many hill Karen, *taungya* forestry had become a way of life.

Additionally, unoccupied land existed outside the Karen areas and the manpower of the government was limited, so they could migrate according to their custom if they had any complaint. The present government still applies this policy. Consequently, the Karen have maintained their own life-style, which is identical to that in the surrounding Burmese villages. Plantation work has increased, but its impact is still small. However, an increasing population and a rising demand for land might change the balance between the government and the people in the future. The predominant shifting cultivation practices signify a gradual but chronic degradation of the landscape, in line with the nature of land transformation. As shifting cultivation continues to play a dominant role in forest type conversion, the typical transformation from one type of vegetation to another is apparent, especially for the increasing proportion of open woodlands and dry deciduous groups from the original evergreen or semi-evergreen type. Yet, the expansion of originally recognized scrubland that denotes mostly the presence of crop cultivation is the main feature of land degradation.

As such, these natural forests should not be lost and in fact they should be developed and maintained on a sustainable basis. It is necessary to reduce the pressures falling on the natural forests, in order to protect their perpetual existence and dynamism. One way to fulfill this objective is the establishment of adequate forest plantations. On the one hand, gap planting, enrichment planting and natural regeneration should be implemented to return degraded natural forests and promote their value, while on the other hand teak plantations should be established in denuded areas.