



## CHAPTER VII

### CONCLUSION

#### 7.1 Main Findings of the Study

##### 7.1.1 Land Use Conflicts among the Forest Department, Agriculture Services and Fishery Departments

In recent years, the policy of the Government has been to develop agriculture as a base, and as a result, many dams and reservoirs have been constructed (and are to be constructed) for the supply of irrigated water for agricultural purposes in the Delta region. Invariably, many forest areas have been submerged and the responsibility for management of these reservoirs has been added to the forestry authorities' list. Encroachment into the mangrove forest areas is a result of population pressure, which in turn has resulted in the need to expand agricultural land. Agricultural encroachment and shrimp farming are current land use conflict issues in the Delta area, and due to the economic benefits that accrue, the private sector is investing capital in the construction of ponds, both big and small, inside the mangroves, for the breeding of shrimps, prawns and crabs for export. As a result, there is a need to develop a rational approach in order to resolve this conflict, so that the numerous forms of biodiversity in the mangrove area can be secured and the shoreline protected against flooding.

The Fishery Department wants to promote marine products such as freshwater and sea fish, shrimps, prawns, and other marine resources, and as a result, people have been encroached upon the forest reserves in order to obtain large prawn catches. The Agriculture Department and the Agriculture Products Trading Enterprise want to increase the amount of paddy land available, in order to provide food for the ever-increasing population, and this issue is complicated by the fact that land use management is divided between the Forest Department, which controls forests and forest reserves, and the Land Records Department, which controls other areas. This is the case in my study village, where there has been considerable confusion over land

use in recent times; for example, when the Agriculture Department expanded the area open to commercial paddy cultivation into the reserve forest areas, this created a legal conflict with the Forest Department. According to the Forest Department, any trespassing, felling or burning of trees in a reserved forest without the permission of the Forest Department is not allowed, and persons who violate this law are liable to be punished. Other examples of this kind of regulation exist, and the result of this confusion is that much of the reserved forest in the study area has lost its forest cover; however, because of the rapid development of the country under a market oriented economy, land-use patterns are changing every day.

There are two kinds of land use management in Myanmar: management by the Forest Department in the forests including reserved and other forests, plus the management of land other than forests, which is managed by the Land Record Department. In my study village, reserved forest is managed by the Forest Department, and many shrimp farms and fish ponds, covering approximately 1200 ha, exist in these areas. There is also much cultivated paddy land and this has created a big problem for the Forest Department, Fishery Department and Agriculture Services section in terms of land use. All the policies of these three sectors have to be well-defined; officially and legally documented, published and have their notification issued by the Government. The Agriculture Department has extended commercial cultivation areas for paddy into the 'reserved forest areas'. Without mentioning the difficulty in enforcing the reserved areas rules in the first place, these conflicts between the government agencies have further complicated the issue. However, on the whole land use policy is directed towards agricultural development.

There appears to be a lack of flexibility terms of using agricultural land for aquacultural purposes. Dam constructions, the establishment of shrimp ponds, the creation of salt pans and the cultivation of nearby land have all instigated erosion and sedimentation in the rivers and creeks. Villages situated along the river banks are subject to soil erosion and as waterways that connect villages change direction, villagers transportation routes for trade or other business have been destroyed. In my study area, there are several square kilometers of reserved forest that have already been encroached upon by other forms of land use, such as agriculture and fisheries. Even when the Forest Department manages the reserved forest, the land use pattern is



confused with other forms, so forest conservation policies are seen as a failure. For example, even though the Forest Department created a reserved forest area here in my study village, there has already been a loss of forest cover. The Forest Law defines the land use and activities allowed and not allowed in the reserved forest - any trespassing, felling, burning or settlement in the reserved forest, without the permission of the Forest Department, is not allowed, and any person who violates this law should be punished in accordance with it, but this has not been applied, as a result of rapid development under a market oriented economy, with land-use patterns being changed daily through the implementation of land-based development activities.

The main conflicts in my study area have arisen out of incorrect and overlapping land use patterns, as promoted by different government agencies, and land use conflicts are the main cause of local people becoming impoverished.

#### 7.1.2 Issues and Challenges for the Forest Department and NGOs

There are many challenges faced by the NGOs and Forest Department. Many of the mangrove forests have already been encroached upon by fish, prawn and crab ponds, and the threat they pose is very serious, especially, especially as they are often abandoned due to low production. Once that has happened, the whole area is polluted and sometimes toxic substances not only damage the environment, but are also harmful to the communities. The Forest Department is the custodian of the forest estate and is solely responsible for looking after it; however, its top-down approach in handling environmental problems is flawed, whereas communities as a whole are becoming more and more important as far as environmental conservation is concerned.

While it might be possible to arrest the rate of forest degradation and ensure the supply of forest products to the village communities through a massive government funded program, the expense would be great and the administrative funding inadequate to effectively manage the forest resources and the environment at the same time. The Forest Department has resource constraints due to several other overriding developmental priorities, is overstretched and does not have the capacity to undertake such a massive program funded by the Government. As a result, a less

expensive strategy needs to be implemented, either by a small and compact forestry administration service or jointly in collaboration with environmental and social NGOs. In many cases, NGOs are already implementing small-scale development programs, through effective participation of the local communities and with funding from other organizations; they are even helping the Forest Department to establish mangrove forest plantations every year, and with the restoration of the depleted or degraded ecosystems. However, Forest Department staff feel that their roles are being encroached upon by the senior foresters who are working for the local NGOs, though these senior foresters have varying levels of experience in terms of environmental conservation. Voluntary participation cannot be achieved without the provision of these facilities; poor villagers have to catch crabs or fish for their daily survival and cannot spare the time or money to carry out reforestation activities, as it is a free labor contribution, but they have to feed themselves and survive.

Another problem with the Forest Department staff is that they are underpaid and their daily allowance for performing field operation activities is low at 25 kyats per day. The NGO staff meanwhile also have to supplement their pay, but when they work for a community participatory project it provides them with a daily allowance varying from 800 kyats to 1,000 kyats according to their rank.

The most sensitive issue is the misunderstandings that take place between the Forest Department and FRED A. Successful restoration of the degraded mangrove ecosystem and establishing new plantations requires the Forest Department's agreement and collaboration, so FRED A, when helping the Forest Department, is anxious that any gesture is not misconstrued as infringes upon their lawful domain. One example of this is starting community forestry action; whereby it is quite possible for the Forest Department, with its nurseries and professional staff, to be in a position to provide seeds and seedlings and also provide expertise on planting techniques to the local villagers; however, there is a large amount of expenditure involved when carrying out these activities, beginning with the selection of appropriate locations, the clearing and preparation of sites for plantation, collection of suitable seeds, raising seedlings, and post planting maintenance, thus the Department is sometimes constrained. With regular interaction between the individual Forest Department personnel and mutual help provided in terms of the activities involved in developing



plantations and monitoring, as well as extending incentives to field staff in the form of supplementary monthly support, FREDA has been able to overcome these constraints.

While it is theoretically possible to arrest the rate of forest degradation and ensure a supply of forest products to the village communities through a massive government funded program, in practice the many tasks exceed the Government's ability to manage them. What is needed is therefore a less expensive strategy, one which can be implemented either by a small and compact forestry administration, or jointly in collaboration with environmental and social NGOs. In actual fact, many NGOs are already implementing small-scale development projects together with the local communities in the Delta, and with funding from other organizations.

One problem is that some Forest Department staff feel that their authority is being undermined by the senior foresters who are working for the INGOs, even though those retired officials have considerable experience in environmental conservation. According to the CFI, the Forest Department has to provide seeds, seedlings and support to the local communities when cultivating these species, but they do not have the resources to provide such items as jungle boots or long knives for clearing the bush, cash or other such compensation that the INGOs believe is essential. Even though the INGOs are convinced that reforestation cannot be carried out unless such inputs are provided, or by purely voluntary labor, many Forest Department officials think that by giving this support, the INGOs are spoiling the local people.

### 7.1.3 Problems between Local Communities and Government Agencies

All the villagers in the study area have been dependant on forest products for many years; however, besides their traditional knowledge on how to manage the environment effectively, they now have to deal with officials from the Forest, Fisheries and Agriculture Departments, who are there to enforce the regulations. As well as often conflicting with one another, these regulations often constrain villagers from collecting the forest products that they need to survive.

At the same time, these department officials earn salaries which are too low to meet their own daily needs, and this results in widespread negotiations between the villagers and the government officials. To earn a living, the local people usually work out arrangements with the officials by which they can gather the items that they need,

such as fuel wood, in exchange for helping the officials with food and other items such as honey and medicinal plants. The villagers also show the officials considerable respect for their position – partly as a strategy to curry favor, and as a result, the officials find it difficult to enforce the rules. Such a situation also constrains the officials from trying to evict farmers who have expanded their paddy fields into reserved forest areas, a policy led by government officials, who are under pressure to meet national policy goals for the expansion of areas under cultivation.

There have also been cases of farmers expanding their paddy fields into the reserved forests in order to meet their own daily food needs and the requirements of the State. According to the Myanmar Government system, all land is owned by the State, and for paddy growers, this means that at the end of the growing season, they have to sell a prescribed amount of paddy to the agricultural products trading enterprises, at a low price – the amount sold being fixed according to the amount of land the individual cultivates. This policy takes no account of floods, droughts or attacks by rodents and insects, so whatever happens, the same quota prevails. This is one reason why the farmers cultivate within the reserved forest areas – to ensure they meet the quotas. However, working at odds with this, at the same time the Forestry Department officials are trying to prevent all forms of encroachment. One example is the efforts made by the Forest Department and local authorities to reforest areas destroyed by abandoned shrimp farms and salt pans, where the Forestry Department planned to establish community forests and commercial forests. Without listening to the suggestions of local people, the officials engaged the local villagers as laborers, but at a very low rate of compensation. Most of the laborers were recently graduated young foresters assigned to the area, and were not responsible actors, but simply those carrying out orders in order to implement those policies agreed upon at the top, so they obviously just wanted to finish their job in line with the prescribed plans. The Department, without providing them with supplies, rations, or equipment, then had the villagers carry out the work, and not surprisingly, the local people were not willing to do this, as they had their own work to do.

This was an unfortunate situation, because the top-down management process precludes inputs from villagers, inputs which could be highly useful in terms of addressing the basic issues. In addition, the top-down political system compounds the



problems posed by unclear government policy, insufficient government funds and political isolation.

## **7.2 Theoretical Discussion on the Research Findings**

Conservation is defined as the management of natural resource use, so that it may yield the greatest sustainable benefits to the present generation, while at the same time maintaining its potential to meet the needs and aspirations of future generations, and some scholars emphasize the usefulness of particular species when studying how humans can subsist in particular ecosystems.

The Myanmar Forest Department has implemented many reforestation projects in the Delta region, following an approach which is descended from the tradition of 'scientific' forestry and also based upon instructions from the Department in the capital. The knowledge that the Forest Department has amassed in such areas is important; however, also important is the effect that this scientific forestry has had on peasants, shifting cultivators and timber traders.

The fact that the Forest Department has not considered such impacts has contributed to the problems they often face in their efforts at managing the forests. The fact that they have chosen to follow a universal top-down approach and have not taken the time to learn about the diverse complexities of local practice, means they are working without taking into account the benefits to be gained from the local people's long-term experience. Instead of allowing this local knowledge to enhance their scientific approach and make it more comprehensive and effective, they have implemented a kind of 'non-scientific' forestry, but in the name of science.

Community forestry is defined as forestry operations which are carried out by the local community itself, for the establishment of woodlots, planting of trees and exploitation of forest products to obtain food supplies, consumer products and income at the farm level. Community forestry is neither regional nor large-scale in scope; it is considered to be "afforestation of areas insufficient in fuel wood and other forest products for community use" and "the planting of trees and extraction and utilization of forest products to obtain food supplies, consumer products and income", with local community participation. This system should involve the sharing of forest

management with the rural community through user group activities and with technical assistance from the Forest Department and NGOs.

Community forestry focuses on a flow of benefits to those communities participating in forest management, and the Government can facilitate community forestry through its forest management policies and regulations. In Myanmar, there are community forestry plantations that have been established with the benefit of community participation, in areas of degraded forest and fallow land, and these efforts have represented a way for the State to assert its authority over the people and the environmental resources, as well as to strengthen its position in relation to other actors (Peluso 1992).

Community based natural resource management - which depends on indigenous knowledge, beliefs, customs and institutions, can provide equitable access to natural resources, but in the context of my study village, the government authorities need to better understand the dynamics of local forest management. Anan (1998) points out that the concept of conservation has become a political issue in which the logic of conservation has increased the control over forest settlers, while also making it more likely that local people will be resettled, even though this contradicts the traditional practices of usufruct. In the coastal areas of the Delta in Myanmar, the role of the local people is crucial to forest management and one which has not yet been properly addressed.

As noted above, there are State systems which have exacerbated the poverty of villages in the study area, and among the most important of these is the degradation of natural resources. Contributing to this have been the differing and sometimes conflicting policies of the Forestry, Agriculture and Fisheries Departments, which have contributed to ecosystem changes that have further impoverished the local residents.

This poverty has led to shortfalls in household purchasing power; many households in the study area are now below the poverty line - defined as the amount of income needed to purchase enough to meet their average daily recommended calorie requirements.

To overcome this increasing poverty, environmental stability must be ensured, and this cannot be addressed if the conventional top-down approach used by the



Forest Department, as the custodian of the forest estate, is maintained. This approach has many drawbacks which handicap the handling of environmental problems, and as a result of this mismanagement, which is caused by many factors such as a lack of resources, not listening to the local people and conflicting policies, many local people find that their only alternative is to leave the forest environment entirely (Sunderlin, *et al.* 2005). Despite their own sound environmental practices, the villagers feel that the law enforcers often themselves violate common sense, endanger local ecological stability and abuse the villagers' own rights, and in finding a solution to this situation, the definition of forestry has to be expanded, plus steps need to be taken to overcome the conflicting policies of the different departments.

Local knowledge is based on experience, adapted to the local culture and environment, and is continuously developing. It is used to sustain a community and its culture, and to maintain the genetic resources necessary for its continued survival, and may include experimentation with respect to the integration of new plant or tree species into existing farming systems. Local communities can regulate their traditional forest use, including how to keep a balance between human consumption and forest resources and how to harmonize the relationship between humans and nature; therefore, local people can be used to manage forests in a sustainable way.

The conflict over access to fishery resources between different outsiders can be understood by not only analyzing discourse over access but also an understanding of everyday practices. Everyday practice is also seen as the result of a historical process of development, unequal power relations between different outsiders and local villagers, as well as cultural values, religion and economic aspects. Local people, based on knowledge, customary laws, religion, beliefs and values, produce their own discourse over access to fishery resources, in order to legitimize their fishing activities and react to internal and external domination. They translate these factors into everyday practice such as resistance, negotiation and cooperation, in order to adapt themselves. Local knowledge is the information people in a given community have developed over time; it is based on experience, adapted to the local culture and environment, and is continuously developing to sustain the community, its culture and to maintain the genetic resources necessary for the continued survival of a community.

### 7.3 Comments and Suggestions

During my field studies, I observed that local community livelihoods and the people's socio-economic status were suffering because of mangrove forest degradation. The fact that the people of Oakpo-Kwin-Chaung are poor shows the impact of ecosystem change. Although they could survive easily into the early-1990s, after that they began to lose access to resources such as the forest and fisheries; resources needed for their daily life. Protecting the remaining forest areas and encouraging reforestation will go a long way towards overcoming poverty as well minimizing the effects of inter-agency conflicts.

First, advice should be given to the local Southwest Commander regarding proper land use patterns, advice that should take into account the plans of the Forest Department, the Fisheries Department and the Agriculture Ministry, plus its various units. This should start to reverse the situation in which there are paddy fields, salt pans and shrimp farms all in the same area. As the most important person in the area, the Commander can designate the roles and responsibilities of each agency. In addition, the INGOs and local NGOs should be encouraged to support the plan once devised; because, if the gap between local NGOs and the Commander can be bridged, this will go a long way towards alleviating poverty. Since FREDAs has several former high-ranking forestry officials working as volunteers, they might have the relevant and required connections and authority to begin this process, in a way acceptable to the Commander and to the other agencies.

Second, Myanmar needs to establish biosphere reserves to preserve the remaining forests. Biosphere reserves have two components. There is a core area for protecting flora and fauna and a buffer area which surrounds it, and there are two kinds of buffer area: the first supplies forest produce to local communities under the control of the Forestry Department, while the second protects the core zone. To become official, the biosphere reserve must be proposed to the Cabinet through the Commander and the Minister of Forestry.



Each biosphere reserve should contain three elements, as follows:

- 1) One or more core area securely protected for: the conservation of biological diversity, for monitoring minimally disturbed ecosystems, and for carrying out non-destructive research and allowing for education
- 2) A clearly identified buffer-zone, which usually surrounds or adjoins the core areas, and is used for cooperative activities, and
- 3) A flexible transition area, or area of cooperation, which may contain a variety of agricultural activities, settlements and other uses, in which local community management agencies, scientists, non-government organizations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

Third, more Community Forestry Plantations need to be established in rural areas and also in the buffer zones. The people of the study area are interested in and willing to have such plantations, for they will have the legal right to tend them for 30 years. Through this approach, they will gain benefits such as wood for posts and poles, timber for house-building and boatbuilding, and charcoal for fuel.

By submitting such an approach for resolving land use conflicts to the Commander, and then involving him in a dialogue leading to the settlement of the conflict, many problems for the local people and the environment will be overcome. Success must be carried through three stages, the first being to raise awareness among the authorities, such as the Commander, the second to enlist the support of the rural community in developing the area and utilizing the forest produce, as well as finding alternative energy bases, and the third to enhance the efficiency of all the departments and institutions, so that they can better work with the grassroots communities and transfer new technologies to them, while also learning from the accumulated indigenous knowledge in the area.

All of this will help to reduce the pressure on the forests. Assuming cooperation between local people and officials can be enhanced (as noted above, it does already exist in various guises), sustainable forest management will be promoted and this will contribute to appropriate land use planning. To do this will also require

the pooling of spatial information scattered across the Forestry, Agriculture and Fisheries Ministries to be used to develop the land capability maps and land suitability classifications needed for land use planning. In so doing, this will contribute to the harmonization of the differing policies of the various (and sometimes conflicting) departments, which will then contribute towards improving the regional standard of living. All of this will require a multi-disciplinary approach, with the help of marine and terrestrial scientists, regional and environmental planners, local and national policy makers, as well as educators from many fields.