CHAPTER VII
CONCLUSION AND RECOMMENDATION

This thesis focuses on changes in fruit based agroforestry practice in a Miao community in Guizhou Province of China. The changing practices of agroforestry show the Miao responses to the economic transformation and agroforestry development in rural China. Overall, my research has attempted to understand historical process of agroforestry development in the Miao community under different ecological, socioeconomic, and cultural context. Practices expresses what people do as distinct from what they say they do. Local practice is based on their understanding and related to their local environment. This study, however, is still far from the complexity of dynamism of the structure and function of market, but it will contribute to three areas of knowledge: agroforestry cultivation, forest management, and sustainable development.

This chapter attempts to draw out the objectives of the study and answer the research questions. It discusses the main findings, the theoretical underpinning of the study, and policy recommendation as well as the limitations of the study.

7.1 **The Main Findings of the Study**

The main findings of the research are:

First, in responding to market, the Miao farmers have changed the productive practice of tree cultivation. Since 1979 China has shifted from planned to market economy, the economic structure and social relations have changed in Miao society. The pace of change has quickened in recent years and Miao society in developed market economic are diversifying as a result of broader socioeconomic transformations and societal modernization. In order to meet their sustainable livelihood and make a better livelihood under the market condition, the Miao farmers in Tageba have adjusted their behavior of tree cultivation through changing and diversifying their land use, reorganizing their labor, and reconstructing their social relation as a productive practice change. In the land use practice, the Miao farmers reconsidered their land use patterns and adjusted their fir cultivation toward commercial tree cultivation. People cut down the fir and chestnut and grew pear and/or other valuable trees on their farms. The traditional land use patterns have been widely replaced by the economic incentive. This has resulted in an increase of land pressure and more dynamic land use. In the labor distribution

practice, the traditional form of labor exchange within the Miao communities has been replaced by hired labor. The out-migration for off-farm employment has increasingly been observed among the young generation. Kinship ties have felt the impact of growing individualism, and new alignments were developed in the form of associations based on economic ties, such as, pal family. In the social capital arrangement practice, social capital and human capital have become more important for farmers in the maximization of economic profit. The market economy has led to disintegration in Miao social structure. Kinship and the traditional clan network has been reorganized in some ways, but also sometimes was utilized in the creation of new units working to achieve economic goals. Kinship, and marriage ties play a new role in economic production and social control. It depends upon what farmers need.

Second, changing structure creates new meanings for resource. Since 1979 the Miao farmers have obtained more free land use rights of agricultural production. The capricious market havs regulated their agricultural activities. However, the market as a process of 'hybridization' has given rise to a pluralization of economic and cultural practices. The market economy introduced new needs and aspirations to Miao community. Nowaday, the role and value of forest changed. The cultivative values are strongly associated with market demand. The customary fir planting became a matter of no great importance. The wood houses are no longer regarded as a symbol of the rich. The fir forestry is less associated with prosperrity and Miao identity. Although timber forests were extensive in some areas, the main forest value was usually percerived to be eonomic, in the form of the production of a raw material for industry. With the growth of commodity production, earning money has became the center of social life in Miao society. For individual farmers, especially the younger generations, their practices and meanings of forest have changed. They have regard forest more like a source of cash income, and looked upon traditional forest management with economic calculation. Forest management became essentially a technical exercise, geared to clear goals and based on economic values. They are concerned more about their own interests than about the interests of their families and community.

Third, the economic structure change has resulted in differentiated agricultural practices. The fruit boom has accelerated social and economic differentiation in Tageba. Comparing the collective period, there are many potentially synergistic links between the socioeconomic factors and agricultural practices. Depending upon their different access to resources and

market, that is their ecological and socioeconomic context the farmers in five natural villages of Tageba have adapted different strategies of tree cultivation. For example, Shangten still maintains the traditional model of tree cultivation; Dade has adopted industrial fruit tree cultivation. Also, at the household level, different households have different models of tree cultivation based on their unequally access to land, labor, and capital. Some farmers have adapted large fruit tree cultivation, some farmers have adapted timber tree cultivation, and other farmers have out-migrated to urban area.

Fourth, in responding to market and development policy the Miao farmers have rationalized their forest management. their attitudes, perceptions and motivation in forest management have changed essentially under the market-oriented development. Farmers now look to forest for more than the production of wood, and demands have increased for such cash income as recreation and nature conservation. These shifts in values have been conceptualized in the term post-industrial forest, which recognizes there are demands for other forest goods and services apart from timber production. However, it is possible that the changing role and value of forest in developed market economy have been facilitated by the exploitation of forests elsewhere. In practice, farmers have their own needs as well as ideal types in tree cultivation as Scott calls 'safety-first ethics.' The Miao farmers have mobilized forest strategies to make the best use of the minimal landholding allotted to them. They have expanded fruit-based agroforestry or have adapted other stratigies to intensify their livelihood. These included, changing land use patterns, engaging in hired labor for supplementary, utilizing available and accessible forest resources, maintaining client relations with middlemen, and reconstructing their conceptual relationships with forest. Actually, in many areas, forest is now neither the only, nor the main source of income. When Miao farmers were allocated land, they managed it so as to get the largest return in the shortest amount of time instead of investing in forest development aimed at the more optimal long-term benefits. They developed commercial fruit production and became reluctant to invest in the management traditional fir forests.

It can be concluded that the forest management changes in Tageba after market intervention has largely led to decrease value of forestland for household income, due to the diversification of income sources and the availability of substitute fuels and building materials. In addition, mostly poor households tended to simple manage their farm. They pursue maximum profits and faster return from their farm. Farmers tended to use land with a short-

term horizons, focusing on high profit crops with short-term returns. Individual management has made farmers place economic value over the ecological sustainability. After social structure changed form planned economy to market-oriented development, farmers have seemingly been in control of the production by themselves, but, in fact, many of them (especially ethnic peoples) were still somewhat unfamiliar with the market environment. Many of them still kept their ideal types from the collective period. When the market came in, they managed their resources rationalized.

Fifth, the case study on the development of fruit-based agroforestry in Tageba has raised some questions regarding the sustainability of agroforestry under market economy. Agroforestry as a system of land use and cropping is designed to provide sustainable livelihood. However, due to market incentive, the meanings of trees have changed markedly. Unlike in the old system that was strongly based on resource conservation, today agroforestry system has been mostly concerned with generating cash income. In this sense, it has been a challenging strategy, but it has also led to new conflicts in the Miao community. The commercialization of tree cultivation in Tageba has led to land use as well as tree management competition. Depending upon their individual farmers' experiences and ways of accessing resources, farmers thought about trees in different ways, such as, building materials, income generators, utility in greening the landscape, etc. Access to resource has become the main issue affecting all practices. Land use patterns, species planted, and planting site selections are all related to access. In Tageba with new forms of access to resources, such as, sharecropping, tree leasing, etc. changes in agroforestry practice have occurred. In fact, access to tree tenure has become more valuable than access to land.

In practice, industrial fruits cultivation in Tageba has simplified decision-making as well as discursive practices. Farmers have had to change their traditional fir cultivation in order to negotiate more benefits. Farmers began to believe more in exotic species and rely on heavy chemical inputs. This reliance on new industrial agroforestry practices has helped farmers to meet subsistence needs and encouraged their participation in the wider market economy. Viewed in this way, agroforestry has been a useful intervention for the transformation of mountain farming from a subsistence system to a semi-commercial system. In fact, agroforestry development in Tageba community seems to be a process of "mountain specificities,"outlined in the following terms: differentiation, simplification, fragmentation, diversification, and transformation.

Sixth, unequal access to land creates social differentiation and impacts on rural sustainable development. The emergence of numerous practices and adaptations due to distinctive land distribution has been one of most significant sociopolitical changes in rural China. In Tageba, after land was allocated to households in the 1980s, the land owned in each household has changed over time. This has become a critical issue that land affected rural developemnt. Accumulating differences in amount of land accumulated by farmers have led them to adopting of different strategies and practices. The young generations have become lesser landowners. Unequal land distribution has also made some farmers lose their interest in farming. The young generations are no longer interested in and do not know farm cultivation.

Finally, through the process of industrial agroforestry development, contradictions and conflicts have emerged between the traditional way of life of Miao people and the modern, market-oriented lifestyle. The social transformation have introduced new values, norms and ways of life into Miao society. The present situation is characterized by an increasing fragmentation of traditional communities and diversification of cultivation. There is a trend towards the pluralization of life-styles, and towards deepening conflicts between the elders and youths. With the urge to tree industry, Miao farmers have adjusted themselves to a change from a barter economy to a monetary exchange economy. The Miao farmers became unbound from their cultural restraints and forgot their traditional practices. The intense commercialization of livelihoods and agricultural production weakened the markers of Miao identity.

7.2 Theoretical Discussion

First, one of the main findings from my study is related to farmers' behavior change in response to the transition from collectivization, planned economy to market economy. While the historical context of the peasant's behavior change which I have studied is different from the one under which Scott (1976) and Popkin (1979) studied, there are some issues which can be compared and discussed. To explain farmers' behavior change, Scott adopts the concept of moral economy as well as "safety-first" to explain peasant's responses to capitalist market. He views the peasant's behavior as a resisting to the impersonal nature and uncertainty from the market. He identifies that a farmer is firstly a social being guided by social norms and only secondly an individual. Yet, if we follow Scott's approach, we can understand why farmers resist to the changes when they are integrated into market economy. However, it cannot explain the ways in which some farmers adapt to changing of the market mechanism.

In my study of the Miao farmers in the context of economic change, the commercialized economy does not automatically supercede their moral economy, but is a force which reconstitutes, reproduces or extends the moral economy. The behavior of the Miao farmers in Tageba are far removed from the subsistence economy which is expected by Scott. In Tageba, even Miao traditional norms and values have been weakened, but under the new market incentive local norms are not fixed and farmers do adapt to new market economy and follow agro-forestry and rural development policies since they expect economic return to their investment. They have changed their traditional fir cultivation and adopt fruit tree industry, but some of them have maintained the traditional practice. On the other hand, Miao farmers have changed their land use and thus increased their dependency on the market. As Scott mentions that local norms and value guides their perception, aspiration and social action. In fact, farmers in Tageba are not stop their cash demands as needs discourse practice. They are often change their practice of tree cultivation.

Indeed, Popkin (1979) explains farmers' behavior change on the other way. He descries that farmers are willing to change their living conditions in order to achieve their aims. But, Popkin underestimates the importance of social norms and value, when he defines farmers as acting quite independently of their normative backgrounds. He points out highly individualized human beings and fails to consider the power of existing world-views and the fact of social control within a small community. If we refer to Popkin, we will find a much more dynamic description of the peasantry. Actually, in the China's context, especially in the Miao community, to assess farmers' behaviors change both Scott's and Popkin's approaches may not much successful. Sometime we should integrate these two approachs which depend on what we need. In my research site, Tagebe, Miao farmers not only changed the tree cultivation to adopt market demand, but also are guided by traditional velue and norms. Farmers cut down the invaluable tree and grew the fruit tree. Also, some of them came beck to traditional fir cultivation. The historical context also affected farmers' behavior. Those traditional practices have been redeveloped which depend upon what people needs, Economic development is only part of the story in Miao society. A more complicated and serious problem is the interrelation between the economy and culture. Addressing these challenges will test the limitations of Miao adaptation. The social norms have affected economic connotations, but are not exclusively oriented towards the search for economic security. To clearly assess farmers' behavior change, only accept the importance of social norms are we able to understand this "internal" rationality. At same time, farmers' activities cannot be all

traced to an economic origin; some may aim at participating in the distribution of all values provided by society.

Second, both the productive approach and the interpretive approach are significant for farming system research. Suryanata (1994) uses productive approach to study fruit-based agroforestry in Java. From this approach he realizes what and how people change action, but cannot understand why people change their tree cultivation. On the other way, Hefner (1990) adopts the interpretive approach to explain farmer's activity change in Indonesia. He examines the history and meanings of a people's way of life and the circumstances in their sustenance and change. Yet, to recognize the changes in human activity the interpretive approach is more helpful. Because the interpretive, hermeneutic or meaning-centered approach can make social reasons why people change their practices, rationalize their behavior and social realities more clear. The interpretive approach emphasizes that social reality is not objectively given. It is a process unfolding independently of actors' understandings of their social world. Social life is inextricably shaped by culture and meanings, since actors use their understandings to adjust to and change the world of which they are part. Thus, the best social research should pay attention to local histories and cultures and data about social change from the grassroots level more than that from empirical imagination. This study reiterates that history, social meanings, socioeconomic, and cultural context have great importance in resource management study. It also highlights the importance of recognizing the needs discourse and local meaning, because behaviour and decision-making are influenced by people's perceptions and needs.

7.3 Implication of the Study

Those promoting agroforestry development are seeking new strategies whose benefits are not limited to small areas of intensive project activity. Where current and prospective economic incentives for agroforestry are positive, one would expect to see widespread experimentation with more intensive practices. On the other hand, some regions and households will find that under certain agroforestry systems they cannot "compete" economically with alternative uses of labor, land or capital, or alternative, lower costing sources of product supply, or methods of environmental protection. The research community is encouraged to undertake detailed market and household economic studies and sensitivity to social, cultural and ecological variables allow us to characterize different settings and options with greater clarity, is encouraged.

The lessons of this study concern the need to place the development of agroforestry (e.g., in Tageba) in a wider context, such as time, space, and social structures. For example, it is suggested that development cannot be interpreted properly without reference to the prior history of forestry development. The current development movement is not the first change in a 'timeless tradition' that has remained intact until confronted by contemporary forces of modernization. It has been changing constantly to readjust to new condition from the very beginning. Sometimes the reason for current trends is not related to the present but past events. For this reason is important to see the development of agroforestry within this historical context and from the point of view of local meaning for several reasons. First, some aspects of the contemporary relation between society and forest (such as the way these relations are perceived by the state) can be illuminated by comparison with historic relation. Second, contemporary relations to some extent can be derived from the historic relations: what has gone before in environmental relations determines much of what comes after. And third, this history dissuades us from viewing contemporary change as unique: it shows change is the rule rather than the exception.

This study adds another dimension to the understanding the agroforestry development is an ideological as well as a discursive practice. Examples have been presented from ancient and contemporary times of the subjective character of state perceptions of relation between society and forests. In each case, this subjectivity sustained (and thus was sustained by) the self-interest of the local government. This subjectivity must be seen as part of the context in which agroforestry has developed, which is potentially as important as any aspect of the physical environment. The lesson from this perspective on agroforestry development is that any development of a resource as important as forest is likely to be perceived subjectively, at least in official government perspectives because any such development is necessarily a political act.

As this last comment suggests, the fourth dimension of this study is political. Agroforestry development represents responses not just to local environmental condition or to socio-economic conditions of village, but also to a wider set of relationship that encompass the physical environment, rural society, and the state. The relations between farmers and trees involve much more than one individual and one plant in one place and time. They extend back in time and out in geographic, social, and political space; and they can only be correctly interpreted by taking these broader dimensions into account. The development of agroforestry

has resulted in the degradation of traditional forests: our surveys confirm that the loss of forests on local village or state land is associated with farmers' decisions to cultivate trees on their own land. The association between deforestation and afforestation is not just response to diminishing forestland, but also to diminishing control of land.

7.4 Policy Recommendation

Former studies of agroforestry practice in China have suggested that market and development policies have a significant influence on the rural development and sustainable management of forest. This study shows that forest management problems also resulted from specific and different local conditions and contexts. This is why quite different practices as well as responses are found in different villages and groups even though they are all part of Tageba. This study suggests and partially proves that industrial plantation, commercial management resources and insecurity of resource tenure are critical issues in forestry management. The case provides evidence that supports the view that for successful agroforestry practice to be achieved, attention must be paid not just to actual production methods, but also to perfecting the market mechanism.

Policy-makers need to be aware of the importance of local needs and understandings. Moreover, acknowledgement of local practices and attitudes, which are responded to local condition, should be reflected in policy and planning. On this point, it can be seen that agroforestry development in Taijiang has ignored the local communities thus resulted to some serious problems. Agroforestry project in Tageba have paid attention to economic growth and ignored the local people's own perception as well as their subsistence livelihoods. In addition, the project encouraged the use of more scientific knowledge and forgot about valuable local knowledge. It also did not notice that Miao culture has great social diversity and complexity. As Fortmann (1990) has put it, "....we must acknowledge that there are two centers of agroforestry research and design. One is represented by the formal research sector and development institutions, the other by rural communities themselves." Agroforestry innovators should learn more about the ideas and knowledge of local people. They should to know how remote or ethnic areas could be involved in sustainable development. The conclusion from this and other cases is, in short, that policy makers cannot simplify forest management in rural area. Policy-makers should be considered local complexity and differentiation. Information gatherers should join in the villager's daily life, observe their ways of making a living, notice their attitudes toward and practice of the cultivation of

various tree varieties, and scrutinize the reasoning of various persons, to find an understanding of true reality.

Policy formulation and development decision-making in China happen too often. We have focused on economics without sufficient understanding of the social and cultural aspects of society. Most of the ideal types related to "rural development" still see rural development as primarily a matter of improving 'things.' This is a hangover from the planned economy era in which people only thought about how to organize farmers to work and pursue maximization of their physical output. Actually, since the advent of market reform and decentralization in China, farmers have gained more free choice and decision-making rights for questions of what 'things' they do and what 'things' they do not to do. A sustainable paradigm of development should synthesis both traditional and modern patterns. In reality, our policy makers often maintain their 'traditional ideology'. As a result, state policies of rural development are everywhere blind to people.

Farmers' tree cultivation is influenced by their access to all categories of assets not just to tree assets. For the further development of forest farms, access to assets, such as, land, livestock, financial resources and non-farm income have become more important. We suggest that improving the functioning of the market of these factors to remove constraints from individual farming should be a priority for the government. Further, investment in human capital (through appropriate education and training) is important not only for agriculture, but also for the overall (rural) development. In the context of China recently, caution is needed to redistribute land to individual households. In terms of impact, unequal access to land has become the main problem for rural sustainable development.

The agroforestry system must be designed for these "women's spaces" and not just for the more familiar crop fields. Women are the major producers of agroforestry farms whereas men's production is predominantly carried out from the homesteads. For example, in Shibanqiao, women intercrop cabbage on men's pear farms. In addition, the gender divisions in labor has had important implication for agroforestry practices, with much of the actual application of development in the form planting and looking after new crops coming form women. However, most extension workers are males. Because, as I have mentioned above, Miao women do not speak much to men outside their village, if extension services remain primarily male-staffed much advice and many services cannot be passed on to the people to who they will be most useful. Thus, careful attention to the gender composition of the staff

and clientele of agricultural and forest bureaus is an essential component of the successful advocacy of agroforestry.

Effective agroforestry programs should respect farmers' need to reduce the livelihood risks associated with agroforestry. Investment in forestland is often a long-term process while individual households are often seeking short-term tangible profits. However, with tenure security farmers showed a great willingness to plant trees in forestland. For instance, in my research, some farmers transformed parts of their timber forests into orchards. This market-oriented action has generated more income for those households. However, in reality many farmers are still accustomed to think in ways of the planned economy and are not familiar with market economy strategies. When the price of fruit collapses, farmers will give up fruit tree management. Forest development needs reflect the needs of the community. Each society, often indeed each village, has its own complex of customs, laws, norms, and social relationships and is affected in particular ways by its links with the agroforestry system. As Schroeder and Suryanata (1998) described, with social and technical dynamics embedded in combinations of tree and undestroyed crops, the design and implementation of agroforestry systems, and especially the actions of tree holders, must be carefully analyzed.

7.5 Limitation of the Study and Recommendation for Further Study

The limitations of this study mostly brought about by time and resource availability are as follows:

1) Information limitations. Complete in formation to fully understand the Miao community practice changes cannot be collected from the short-term fieldwork and limited number of sample households included in this study. During the fieldwork, multiple methods and tools were selected to collect information based on the topic and the situation in the study area. However, the rural society is complex and varies from place to place and over time and it is difficult to properly apply these methods and tools to extract truly useful information a real situation.

2) Limitation of focus to particular practices. This research focuses on the agroforestry practices that are managed by the farmer households and groups. It pays more attention to market intervention and local practice changes than to other changes. A central challenge of future research will be to link this with the analysis of structures of state power, such as, why local government development policies have changed, and why the adopted fruit-

tree based paradigms have not been changes. Additionally, other challenges of future research will be to analyze changing relations between different genders and generations with emerging processes of differentiation and class formation. Traditional practices such as local knowledge on agroforestry cultivation, Miao customary law, ethnic identity are also not presented in very much detail in this study,

3) Narrow spatial focus. The investigation and research in this study are conducted only in five selected villages located at different distances around the national highway. The findings of this research therefore have limitations, in that they do not necessarily compare with other villages, especially remote villages in which different forest conditions are existent. Also the roots of the commodity economy spread wider than just the local area and therefore extension of analysis to supra-local, national, or global levels is required.

The agroforestry cultivation as a land-use practice is a complex system. Land-use change is a dynamic process and is caused by a number of factors. The market and policy are only two of those. To better understand the process of land use change and be able to predict future change, further study should be carried out by taking more variables into consideration such as the market chains for agroforestry produce, governance, local knowledge, etc. In reality, this study is just a realization of farmers' practices on agroforestry. Therefore, further study on new problems and how the government practices development projects and comparative studies among different ethnic groups and region is a possible area for further research. Indeed, another viewpoint, from the angle of natural science, and the biophysical interactions underlying fruit productivity also need understanding.