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# **THESIS**

## **WOMEN ROLE ON PARTICIPATORY APPROACHES IN FOREST RESOURCES MANAGEMENT: A CASE STUDY AT BAN THUNG SOONG COMMUNITY FOREST IN KRABI, THAILAND**

**MAHMUDAH ROKSENA SULTANA**

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The study was aimed to analyze the role of women in community forest resources management at Ban Thung Soong Community Forest in Krabi, Thailand. The data were collected through interview schedule of 155 head of households or their spouse, children and parents. Analysis of the data were processed by statistical program and expressed in frequencies, percentage, mean and correlation.

The study revealed that Ban Thung Soong Community Forest were dominated by *Dipterocarp* sp., *Hopea* sp., *Alstonia* sp., *Memecylon* sp., *Eugenia* sp., *Ficus* sp., Bamboo and Rattan etc. Now, this Community Forest is rich in plant diversity and wildlife. Based on the interview schedule it was found that the respondents were more women than men. 3.2% head of household were women. The majority (34.89%) of respondent's age range was 31- 40 years old. 76% respondent's are native to Ban Thung Soong village and except two families, all inhabitants of Ban Thung Soong village were Buddhist. Most of the respondents (92.2%) were married, 77.5% family were consists of 3-5 members. and their relationship with family members were friendly and good. Two-third of the respondent's (73.5%) has primary education and 1.3 % was illiterate where women percentage was zero. All the respondents, men and women had owned land for farming and homestead. The respondents earned their livelihood from the rubber plantation, oil palm plantation and mixed fruit plantation and their monthly income average 2,500 to 20,500 Baths. Participation in different stages of community forest management at Ban Thung Soong village men and women participation are not different. In management process, the level of women participation was high and medium. In the high level, women participation was higher than men in three participatory activities. Socio-cultural, religious and economical barrier were not serious problem to participate women in community forest program. Results of the hypothesis testing revealed that age (Sig = 0.024), origin (Sig = 0.041, relationship with family members (Sig = 0.013) and responsibility in community forest management process (Sig = 0.000) were significantly influenced women and men to participate in community forest program. Women play a distinct role in collecting, managing, utilizing and conserving of forest resources.

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Student's signature

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# **WOMEN ROLE ON PARTICIPATORY APPROACHES IN FOREST RESOURCES MANAGEMENT: A CASE STUDY AT BAN THUNG SOONG COMMUNITY FOREST IN KRABI, THAILAND**

## **INTRODUCTION**

The forests have always played the crucial roles in a resource supplying wood for energy consumption and building construction, supplying other multiple products including foods, fruits, wildlife protection, medicinal plants and fodders and contributing to conservation for essential soil and water resources. Throughout the developing world, women make a significant contribution to forestry.

Deforestation on a world-wide scale is more recent with tropical forests declining by nearly one-fifth so far in this century (World Bank, 1992). Ecologically important tropical forest is rapidly decreasing in South Asian countries. According to the World Resources Institute (1988), about 11.1 million ha of tropical forests and woodlands were destroyed annually. FAO (1990a, 1990b), suggested that 17 million ha, or approximately 1% of the total estimated tropical forest area, are being destroyed each year-half in the humid tropics. The depletion of tropical forests caused declining of biodiversity, wood and fuelwood shortage as well as environmental crisis. In this context, forest conservation, restoration and effective forest management are the issues to be involved over the world.

Thailand's economic development since 1960 has been achieved at the expense of the environment and country's natural resources. However, forest still covers roughly 30% of the land area. The growing middle class of Thai society is more environmentally aware and wants to protect Thailand's remaining forests; hence there has been nationwide ban on logging since 1988 - following devastating mudslides in the south - and there is protection of existing forest reserves from development and exploitation. In 1991, the government revised the National Forest Policy to set a 40% forest cover target - 25% conservation forest and 15% production forest. This action has caused a decline in Thailand's mining industry which seeks to exploit mineral reserves located in the parks, but no longer can. However, Thailand's remaining forests are far from safe as the country's developing industries require energy and several hydroelectric projects are ongoing.

Illegal logging is rapidly eliminating Thailand's remaining forests, despite the nationwide ban on Rainforest cutting. In some cases logs are routinely felled in Thailand and smuggled into Burma to be imported as Burmese logs or processed logs. The latest FAO figures reported that just 22.8% of Thailand is forested, down from 25.62% at the end of 1993.

After the declaration of total logging ban in Thailand, the country emphasizes to the development of community forest. Because, the community forest must serve people within the community by balancing environment, economic and social goals.

Its aim are to manage and conserve of forest resources with the active participation of local people both men and women. Community forestry also plays an important role to eradicate poverty of rural community by providing different sources of income.

Rural women are major caretakers and users of forest resource. Each day women walk long distances to gather foods and fuel woods. They seek fruits, vegetables, bamboo shoots, snails and small edible animals for food for their family members. They use barks, roots and herbs for medicines. Trees provide shade, beauty and environmental protection for their homes. Thus trees and forests play a major role in their daily lives. With few exceptions, women are at the centre of the environment and development nexus. In most communities, women have pivotal role in economic development and in challenging poverty. They generate substantial income for the family budget from sale of handicrafts, a variety of grown and wild foods, fire-woods and other products.

Most of the area in Thailand, women played only a marginal role in the process of establishing the community forest. But in Ban Thung Soong village all women eager to hard work like men. In forestry activities women participated in restoration works, prevent illegal cutting, help in cleaning the community forest in special occasion, planting and maintaining, prevent illegal hunting and control the forest fire.

Thus women must be integrated into conservation and development efforts to meet the dual objectives of better management of the resource bases and improved community welfare. But, unfortunately most forestry program are organized by men who may be not truly understand women's relationship to forest. The study was conducted to determine the effective role of women in community forest resources management at Ban Thung Soong community forest.

The objectives of this study were

1. To describe the present forest resources uses and forest management practices in Ban Thung Soong village.
2. To analyze the role of women in community forest resources management.
3. To identify the problems of women participation in community forest resources management.
4. To provide recommendations on how to promote active participation of women in the forest resources management.

## **LITERATURE REVIEWS**

### **Women and Forest Resources**

In “Restoring the balance” a report produced by FAO (1988), it has been depicted that “as forest and tree resources become scarce, the balance between what people need what they can obtain shifts. For rural families, the struggle to survive becomes even harder. The effect on women is particularly severe because women are more dependent than men on tree and forest products, and because they are taking on an ever increasing share of family work as men seek cash incomes further afield. Furthermore, in failing to recognize the importance of forestry resources to women, development experts often introduce technologies and activities that cut women off from critical resources. If development plans are to succeed in reducing rural poverty, the balance between women and their forest resources must be restored”.

### **Gender**

#### **Concept of Gender**

“Gender” refers to the differentiated social roles, behaviors, capacities and intellectual, emotional and social characteristics attributed by a given culture to women and men- in short, all differences besides the strictly biological (Santos and Landicho, 2000)

There are two genders: masculine, ascribed to the male sex; and feminine, ascribed to the female one. The way of society is organized according to sex is referred to by some social scientist as the sex gender system.

Almost all cultures see gender as a natural phenomenon, deriving from the biological differences men and women. However, definitions vary from one race and culture to another.

Gender based on the roles that are socially accepted for men and women. Gender analysis is not just about women’s needs, preferences, and constraints, but about the differences between men and women in these regards. Gender analysis is the word given to the set of tools which have been helped to help planners consciously and systematically take these gender differences into account. In a broader context, gender analysis makes one look not only at differences among the sexes, but also other differences, such as among age groups –children, adult, and the elderly, Gender analysis looks at differences both at the family (household) level and the village (society) level.

## **Gender Relations**

Gender relations can be simply understood as the relationship between women and men in their society (Stolen and Vaa, 1991). Feminist researches have largely showed that gender relations are constituted in terms of the relations of power and dominance that structure the life changes of women and men.

It has been proven that gender relations are constantly being transformed and recreated as socio-economic and cultural changes take place. Changes may be brought about by new economic circumstances such as the establishment of foreign enterprises (Lie and Lund, 1991). Transformation of gender relations may also be initiated through legal reforms promoting gender equality (Berg and Gunderson, 1991) or through policy reforms (Lotherington and Flemmen, 1991).

## **The Role of Gender**

Since the early days of the human history, women's role was looked down upon and women were considered to play only the subordinate role to that of men (ESCAP, 1987). But in the last few decades, sustained efforts have been made to promote the role and status of women and to integrate them into the development process. Presently, women are playing an important role in rural development efforts.

Gender like a lens that various key factors that determine how men and women participate in economic, social, political and environment activities. But too often in development planning, it is women who are seen as the problem rather than the gender relations in which they are amassed.

Gender has become common to describe women as invisible to depict a situation in which planners of development strategies have failed to pay serious attention to the different roles and functions of women. The differentiations between men and women's role and work may be classified as follows (ESCAP, 1986).

In agricultural process: A sexual division of labour assigns to women specific tasks. For instance, in rice cultivation, women are involved to a greater extent than men in transplanting, weeding, harvesting and some post harvest activities.

In industry: Women have provided the bulk of the labour force in light industries which many developing countries have spearheaded industrialization programmes. Within these industries, there is an uneven distribution of sexes with employment hierarchies, women dominating the lower wage, unskilled and semi skilled production processes. This means that women are vulnerable to particular occupational hazards in the operation in which they are concentrated;

In domestic sphere; In addition to the unsubstitutable functions of childbearing, women are the main providers of basic family needs: food, clothing, and domestic energy maintenance of family shelters. They bear the major responsibility of child-care thus functioning as the principle transmitters to future generation of

attitudes and values. In their hands is the burden of the health and well being of the present, past and future generations of the labour force.

During the past decade rural development planners have “discovered” both women and the environment and have addressed each separately as special issues within development theories and practices. Yet, the realities of daily life in rural landscapes throughout the world suggested that both are central to the current and future livelihoods of the poor and to the “common future” of us all. Gender, ecology and development are part of a single fabric of rural life and livelihoods. Subsistence and commercial production activities as well as maintenance of communities and larger landscape, are often in the hands of women.

Any program that hopes to confront the realities of rural life with viable alternatives must recognize and work with women as the daily managers of the living environment (Dankelman and Davison, 1988; Stayter, *et al.*, 1991). Yet this seemingly simple fact is obscured by the invisibility of women and women’s work in the currency of bureaucratic accounting, employment, income and land ownership.

### **Forest Degradation**

Forest is the most important component of natural resources; it is home of wildlife, resources and materials for human uses and other living organisms. Other important functions include absorbing carbon dioxide (CO<sub>2</sub>), storing water and preventing soil erosion as well (Laarman *et al.*, 1992).

In Africa, 1.3 million hectares of closed broad leaved forest have been cleared annually during the past ten years, and 2.3 million hectares of opened woodland are being lost each year. More than half of the losses takes place in West African countries such as Ghana, Guinea, Ivory Coast, Liberia and Nigeria. Madagascar alone accounts for the greatest East African loss of forest: 200,000 hectares each year from tree felling and bush fires (Ramanankasina, 1985).

From 1976 to 1980, 1.8 million hectares of closed forests were degraded in Asia, especially in Burma, India, Indonesia, Laos, Malaysia and Philippines. But the highest deforestation rates are those of Nepal (3.9% per year) and Thailand (2.4% per year). Over the past thirty years, Himalayan watershed forests have declined by 40%.

The causes of tropical deforestation is often said to be rural poverty and agricultural productivity, inequalities in land tenure, population pressure, the general ineffectiveness of forestry agencies, and the lack of integrating planning of forestry, agriculture, energy and other sectors (Repetto, 1985). Westoby (1987) stated that “the main instruments of forest destruction are the disinherited of tropical forested countries: peasant farmers, shifting cultivators, rural landless. But these are the agent not the cause.” For example, Laitalainent (1991) described that a private company or a state enterprise under logging concession harvests forests in large areas with capital and technology intensive skills. Harvested trees are only commercial species. Others are usually left ignored by them, but after their logging, local people come into the

forest and convert it to farms. They are normally those who have no other means of livelihood but agriculture (Laitalainen, 1991). The pressure on the forests stems from the unwillingness of those holding power to pursue policies with accord to greater access to land and other resources (Westoby, 1989).

The circumstances of forestry in Thailand may not be the exception of the above. According to Chuntanaparb and Wood (1986), the main emphasis in forestry of Thailand prior to the logging ban has remained firmly on the exploitation of a natural resources. The role of the Royal Forest Department (RFD) was mainly to find suitable logging sites and supervise the concessionaires. Political climate in remote areas began to stabilize by 1988 and domestic policies gave increased emphasis to the plight of the rapidly growing poor rural population, nevertheless, the number of young households looking for land was still growing (Pragtong and Thomas, 1990). Very shadowy efforts by 'influential persons' to profit from illicit logging and upland cropping operations within forests areas became and increasingly significant problem in several areas (Pragtong and Thomas, 1990).

### **Impact of Forest Degradation on Women**

When forest resources become scarce, soil erosion, deforestation and environment degradation occurs, which have adversely affected the lives of individual villagers especially women. The effect on women is severe with increasing labour and time in collection of fuel wood and non- timber forest products (NTFPs). Women are the ones who are working closely with nature. They are responsible for food procurement in the families. Not being able to collect NTFPs has adverse effect on family well being. Forest resources use is not only a source of family nutrition, but also a source off income that women have control over.

In household activities, women are often responsible for gathering fuel woods and they do the cooking. In addition, women are the ones who are involved in forest resources use and trade in the rural area. Thus the current environment degradation, there are adverse effects on people dependent on forest especially women and girls. Because of forest deforestation, women spend more time in traveling to collect fuel and foods. They will be affected in form of nutrition as well as on diverse in income.

An interrelated and often worsening cycle of growing poverty, environmental degradation resource depletion limits women's employment and subsistence opportunities, increases their workloads and undermines their health and productivity (Jacobson 1992). In many countries, large areas of communal forestland are being cleared for agriculture or for commercial forestry. In addition, to its negative ecological effects, this widespread deforestation reduces access to the forest products that are required on a daily basis, there by adding to the drudgery of women who are forced to cover long distances and spend more time in search of much needed fuel wood and other forest products. Fuel-wood scarcity in West Africa, by Raising processing cost, has affected food processing and fish smoking, both important income-generating activities for women. with growing fuel wood shortages, women's workloads increase; in some Indian villages, women spend up to five hour's a day in

fuel wood collection and cooking in a total working day of 13.6 hours (ILO, 1987). Ten years ago, in Bara, the Sudan, women were able to gather fuelwood within a walking distance of 15 to 30 minutes of their homes. Today women must walk one or two hours in order to find fuel wood. Male migration adds to women's burden by inevitably increase the work and responsibilities that fall on women, leaving less time for the demanding tasks of collecting and processing forest products situation. Women's responsibility includes not collection of fuel-wood, but also collection of non timber forest products for household nutrition and grazing animal elsewhere. For example in India, girls were placed in charge of grazing goats and cattle at a very early age (Arya and Samra, 1995).

Indian women in the Uttarkhand hills said; "when we were young, we used to go to the forest early in the morning without eating anything. There we would eat plenty of berries and wild fruit ...drink the cold sweet (water) of the Banj (oak) roots. In a short while we gather all the fodder and firewood needed, rest under the shade of some huge tree and then go home. Now, with the going of the trees, everything else has gone too!" (Bahguna, 1984).

On the whole, equalization of access to resources is an indispensable condition for forest conservation. For peasant farmers and rural landless people, more equal access to the resources (Westoby, 1987), feasibility of intensive agriculture by rural farmers (Huguet, 1983; Spears, 1983) are the issues to be practiced as soon as possible. Needless to say, forest management should also be more improved (Myers, 1985; Repetto, 1985; Spears and Ayensu, 1985) in social, economic and technical aspects. Active forest management will be an important precondition of forest conservation, if the research on tropical forest ecology would made more progress and there would be control or regulation that forest utilization had been restricted within proper range (Whitmore, 1992).

### **Forest Management**

Management means "the organization and control of an enterprise or undertaking" (FAO, 1993). The term of forest management should integrate conservation and development. Makombe *et al.* (1993) argued that management could be for the purposes of conserving or preserving natural resources. They maintain that conservation has become a generic term meaning all efforts to save the environment and resources. They also point out that the present debate over the implication of the meaning of conservation dates back to 1864 when G.P Marsh's "Man" and "Nature" challenged the myth of unlimited resources.

Management concerns are not only for the present but also for the future. Sustainable forest management requires not only knowledge of the existing stocks of the forest but also expected yield in the future.

Forest management has changed dramatically over time and across the country. Pests, undergrowth and fire were tightly controlled. In the developed world such as in most of the temperate Northern Hemisphere country, forest management is

slowly adopting in approach that tries to maximize a range of values, including timber production, wildlife habitat, biodiversity and scenic beauty. Increase the productivity of the forest requires special consideration, because it includes direct intervention in the development

Since the 8th National Economic and Social Development Plan of Thailand (1997-2001), the country places a strong emphasis on sustainable development through strengthening the capacity of human resources. Sustainable forest management also is an important element in the National Plan. The principal objectives of the NESDP include: (i) to preserve and rehabilitate protected forests to cover at least 25 percent of land area, and to maintain mangrove forests to be not less than 160,000 hectares; and, (ii) to promote and expand total forest cover to 40 percent of land area.

The strategies proposed for sustainable management of the forestry sector include:

1. Preserve and enrich forest resources.
2. Protect ecological balance.
3. Protect the environment to maintain the quality of life and a solid foundation for development.
4. Establish forest management systems for the efficient utilization and protection of forest resources and forest ecology for the benefit of society and local communities. and
5. Protect against and provide relief from natural disasters.

### **Community Forestry as a Forest Management System**

Local people's participation in forest management is not something new. It has been practiced for a long time. As the forest regulations change overtime, the involvement of the people also changes, though the basic relationship between human being and forest is still there. The currently developed forest management system is called Social forestry or community forestry. The objective is to improve the land use system and capability, so the farmers can gain better benefit from it without destroying the natural resources.

Community forestry is the control and management of forest resources by the rural people who use them especially for domestic purposes and as an integral part of their farming systems (Fisher and Gilmour, 1997).

Noronha and Spears (1985) explained that social or community has emerged as one of the principal response to the problems caused by the wide spread loss or trees and forest cover in the developing world. Social or community program are found under a variety of names: Social, rural village, communal and community forestry project. Its aim is to help people, solve their own wood supply problems, meet their own needs and preserve the environment in which they live by planting trees on their farms or around the villages.

## **Concept of Community Forestry**

All the terms of community forestry indicate the inter-linkage between forest tree management and local involvement in it. The broadened concept was evaluated in its ten years reviews; “community forestry is most accurately and usefully understood as an umbrella term denoting a wide range of activities which link rural people with forests and trees, and the products and benefits to be derived from them. If there is one dimension to be stressed above others it is the range and diversity of these linkages and span of different disciplines which are engaged in aspects of community forestry. Community forestry is therefore not separate discipline, of even program, but one dimension of forestry, agriculture, rural energy and other components of rural development”(Arnold, 1992).

Since 1978, FAO defined the concept of community forestry as “any situation which intimately involves local people in a forestry activity. It embraces a spectrum of situation ranging from woodlots in areas which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide the cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities. (Arnold, 1992).

FAO (1978) stated that the objectives of the community forestry were:

1. To provide the means so rural families can supply of have better access to certain basic needs in the form of essential forestry and trees products.
2. To increase the participation of the rural people (both men and women) in managing forest and trees resources as a means of increasing their self-reliance.
3. To use human resources to better manage degraded and marginal there by counter acting the process of deforestation and environmental degradation.
4. Contribute to the general socio-economic development of rural people through employment generation institution building and promotion of economic growth.
5. To help meet the needs and aspiration of human being specify underprivileged group within rural population.
6. To increase the over all production wood of other tree products.

The benefits of community forest may be in the forms of firewood, charcoal, water for agriculture, food medical herbs, wood for conservation, protection against hazard arising from the degraded environment and recreation (Pragtong, 1991).

## **Community Organization**

Strong community organizations are essential for community forestry to succeed. Such organizations help facilitate planning, decision making, implementation and compliance with established forest management rules. Support can be given to establish and strengthen such organizations, but their real power and

effectiveness come from the devolution of authority and the recognition of local leadership (Durst, 1992).

Fisher (1992) mentioned that “most of disabilities can be overcome if the poor are to understand their situation, recognize their potential for improvement even with the present constraints and organize themselves into small informal homogeneous functional self-help groups and other appropriate associations which enable them to pool their resources for positive development actions, and embark on a process of self development and empowerment”.

In both community development and community forestry, the approach to local organization depends on an ideal of community cohesion and joint action (Durst, 1992).

Women frequently lack political power to ensure continuing services and access to land, credit, decision-making process and the benefits of development. Frequently, this power can be obtained only through organization. In India, a group of landless women belonging to the Self-Employed Women’s Organization formed milk cooperative and sought permission to grow fodder trees on “waste land”. Because it was supported by a well organized group, the cooperative was able to win access to the land and resisted attempts to expropriate the trees once they began to grow.

In central Nepal a village forest committee formed by women, successfully modified legislation that sought to delegate forest management to the “panchayat,” an administrative unit that includes many villages. The organized women argued that management should have been in the hands of a sub unit of the “panchayat” as had been the tradition. This smaller unit was closer to the women and would allow women to participate more fully (Yin, 1999)

### **Community Forest in Thailand**

Community forests have existed throughout the history of village settlement on Thailand. New settlers normally agreed to set aside some existing forestlands or grazing lands for communal uses. While in the past of community was entitled to make its own rules and regulations regarding the use of communal property, especially community forests, the introduction of a Western legal system to Thailand in 1892 removed such communal right in favor of private and state ownership. Since the tambon was formally created in 1914, it has been normally acknowledged by the Royal Forest Department, and documented by the Lands Department. However, the land still remains under the ownership of the state and the tambon is located in reserved forest. Otherwise, any confiscation by the state must receive approval by the related Tambon Council (TC) (Pantasen, 1996).

Traditionally, village in the northeastern region have allocated communal land as burial grounds, and as areas for the village guardian. In the Northeast some communities gave also allocated forestland as communal woodlots. However the South and Central Plains have not had such a tradition. In the South trees have been

parts of livelihood of communities and central to their lives, and thus certain forest areas were not specifically demarcated as community forests (Pantasen, 1996).

Community forests are clearly not solely for the purpose of conservation of natural resources. More importantly, their purpose is for forest resources to be used fairly and efficiently by conservation. Otherwise incentive the community to conserve these forest resources will not be sufficiently strong or attractive in economic term, communal property with clear rules and equitable benefit if the most appropriate way in which to manage public resources where the usual price mechanism would fall to function efficiently. This is because one normally cannot attach an appropriate price for the utilization of public property, because by definition this property belongs to everyone and its not owned by any specific individual. The most effective way to manage this form of property is to allow all a form use of property, with agreed rules for sustainable usage being strictly observed. Moreover, in the case of community forests the general public also benefits from what are known as 'external economics'. As larger areas of forests are protected, the public will gain from the more balanced environment as well as from the potentially larger supply of forest products (Pantasen, 1996).

Community forestry in Thailand is a highly politicized issue. It involves contesting discourses between centralized, professionally-oriented forest management, and a social movement of marginalized forest communities who advocate social justice and decentralization of resource management (Gilmour and Fisher, 1997; Hirsch, 1997). These two discourses have been contesting for over a decade in the lobbying process for a community forest law. In July 2000, the parliament passed the first reading of the draft community forestry bill, and is currently in the process of deliberating different approaches of resource management. The first approach is the state-initiated community forestry, which is targeted for well-established communities and is based on reforestation and commercial tree plantation on cropland and degraded national forest reserves. Another approach, based on the concept of community rights and common property systems supported by grassroots organizations, NGOs, and academics, involves conservation-oriented, community-based forest management by forest communities in peripheral areas with poorly-defined resource regimes.

### **Concept of People Participation**

Cohen and Uphoff (1979) acknowledged that of all ways in which local involvement can be increased, the greatest uncertainties and confusions surround the participatory approach. Especially there is little agreement on what participation is or on its theoretical and applied relationships to process of development in different environmental or societal contexts.

From the United Nations, popular (people) participation refers to three distinct but closely related aspects of the development process: 1) mass sharing of the benefits of development; 2) mass contribution to development; and 3) mass involvement in the decision making process for development. Popular participation is seen both as a goal

of development involving equitable distribution of national income and equality of opportunity, and means for development effort or as broad-based popular involvement in the decision making process. The relationship is a two way venture: People contributing to the developmental effort increases the benefits for them and this then acts as an incentive for increased popular contribution to development. Popular participation is also seen as a categorical term for citizen or people power (Unson, 1978).

Participation of the people involved in development programs is often seen as a way to make these programs more successful, especially for solving problems of poor (Ban and Hawkins, 1996). The term of “participation” is used in many ways, meaning and different things to different people and agencies.

### **Stages of Participation**

Phonyieam (1992) identified the major stages of people participation: (1) Incipient stage where problems are recognized by the community, articulated and considered for solution, (2) convergent stage where a common framework of beliefs, sentiments and values are shared by the whole community to form a network of relationship necessary to define the general objectives of the group and (3) actual implementing stages which requires concerned section of the community.

Hollnsteiner (1976) saw community participation as involving four stages (1) conceptualizing the problems or defining the issues (2) deciding what should be done, (3) implementing the plans and programs and (4) evaluating the results. She pointed out that the only stage over which government and people agree on the need for people participation.

Uphoff *et al.* (1979) identified the four forms of people participation (1) participation in decision making (2) participation in implementation (3) participation in benefits and participation in evaluation. They explained that participation in decision making and implementation is related to the ‘inputs’ for rural development projects, providing authorization and resources as well as organization and design of activities, while people’s involvement in the benefits and evaluation of development activity concerns, on the other hand, the ‘output’ of activity considering its effort in the local population.

Another way of categorizing forms of participation is outlined by Lassen (1979): (1) participation in the implementation of a service or a project (2) participation in decision-making on what the service or project should be; (3) participation in evaluation of the performance of projects administrators or quality of service; and (4) participation in control over how the project or service and finally (5) participation in control over how the project or service in the long run.

## **People Participation in Resources Management**

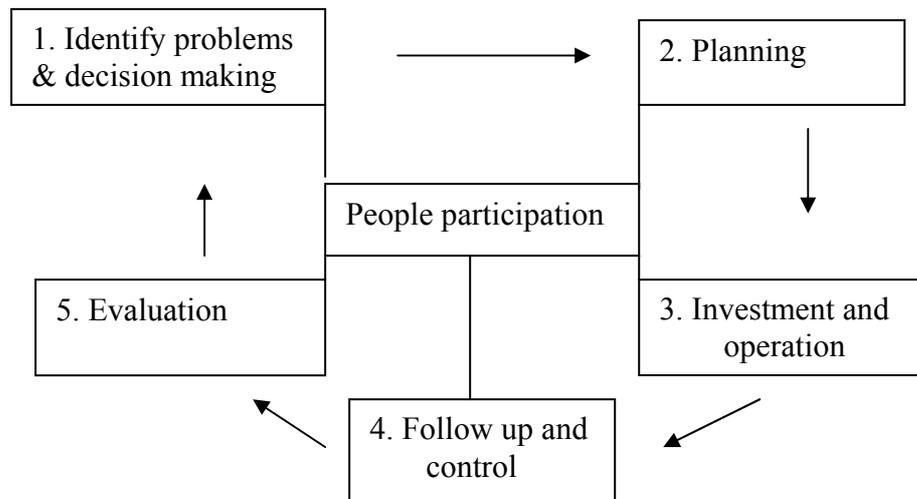
Community participation is an active process by which beneficiary or client groups influence the direction and execution of a development project with a view to enhancing their well-being in terms of income, personal growth, self-reliance or other values they cherish (Paul, 1987).

In the realm of forestry, the challenge of involving local people in forest management has been considerable. More than ever before, forests and environmental related agencies are confronted by questions of how to deal with the people in relation to forests and their products. How much participation is needed for a community forestry program. It is asserted that to be successful, community forestry program needs participation at all levels. In addition, the participation should not be voluntaristic which means that local people will take part as implementers in the activities because they are aware of the problems and can agree on the solutions. They must also believe that the benefits they will gain are worth both their time and efforts (Apicatvullop, 1993)

All the concepts have added richness to the inquiry and stretched wide arena of participation, it falls into essential three broad interpretations; participation as voluntary or other forms of contribution by rural people, participation as organization or organization as a result of a participatory process and participation as an exercise of empowering rural people (Roundinalli, 1983)

## **Process of People Participation**

In term of forestry activities people participation can be divided into 5 steps or process like 1) participation in problem identification and decision making process 2) participation in planning process 3) participation in investment and operation 4) participation in follow up and control 5) participation in product evaluation which shown as Figure 3 (Royal Forest Department, 1996).



**Figure 1** Process in people participation.  
Source: Royal Forest Department (1996)

### **Level of People Participation**

In term of forest community, the level of people can be classified into 7 levels, ranging from forced participation to an ideal level of participation in which participants decide by themselves (Royal Forest Department, 1996):

#### 1. No participation

People involved in the project are forced to participate. If they don't participate they will pay fine or be charged of breaking

#### 2. Least participation

People participate due to rewards or incentives such as wages or convenience, they don't participate voluntarily.

#### 3. Little participation

People are persuaded to participate by advertisements or public relations campaigns which draw people to trust in and join the

#### 4. Moderate participation

People are requested to attend meeting followed by interview to ascertain their views of certain problems in the forest community. Then, government solves these problem and initiate plan.

#### 5. High participation

People begin to participate by expressing their ideas about planning and operating the project. However, decision making still belongs to the government sector.

#### 6. Highest participation

People have the opportunity to give advice and to make decisions about the problem, it is to be solved and what the solution will be. They have the opportunity to make proposals and take action.

#### 7. Ideal participation

People in the local community are the key persons in making decision in important processes, from planning and operating to evaluating the project.

### **The Role of Women in Forest Resource Management**

To ensure food security and other basic needs as well as livelihood activities poor women greatly depend on their surrounding environment. Rural women are aware of the importance of forests and forests product for providing food and income, particularly during crises, which is critical to for daily sustenance and survival of their families (FAO, 1991; Kaur,1991; Menon,1991; Egnenus and Ray,1992).

Women contribute to forestry in many significant ways. They play a key role in agroforestry, a farming system that incorporates trees, crops and livestock production. They are active in watershed management where actions to reduce soil erosion, such as maintaining forest cover, lessen the hazard of floods and the silting of reservoirs and waterways. Women also contribute to tree improvement and propagation to ensure the proliferation of useful tree species, and to forest protection and conservation. This, in turn, protects the many animal and plant varieties that depend on forests for their survival and improves the overall health and maintenance of forest ecosystems.

The majority of poor women in developing countries are engaged in farming and related enterprises such as animal husbandry and fishing activities with critical dependence on the availability and equality of resources such as land, water, forests and seeds. While patterns of participation vary, women play important and sometimes critical roles in household survival through their subsistence and income earning activities In Africa, Women's food production activities and interaction with their environment has provided women with specific knowledges concerning food related innovation. These poor rural women should be encouraged to participate in consultations when programs are developed for food production, processing and marketing (Ilikkaracan and Appleton, 1994). In many parts of Africa, women are the primary food producers, contributing about 70% of the labor for food production, 60% for its marketing and virtually all the labor expended in food processing. In Zaire

more women than men are in agriculture, 94% of women farm as compared with 56% of men (Sines *et al.*, 1987). In South Asia women do almost all those involved in transplanting rice (Ahmed, 1987) and participate to varying degrees in sowing, planting, weeding, fertilizing and harvesting. South Asian women often predominate in post-harvest and food processing activities.

Women use trees and tree products for a wide range of items such as fuel wood, fodder, fibers for clothing and mats, roofing materials, basketry and medicines both to earn income and to meet household needs.

In the Amazon, about a third of the work involved in rubber tapping is done by women and children (Abramovitz and Nichols, 1992). In the state of Maranhao, Brazil, women comprise 86% of the estimated 400,000 rural workers who earn income from the vegetable oil extracted from the babassu palm kernel, used for the manufacture of soap and other products. The babassu palm also provides poor women with important raw materials to produce both household and market goods such as baskets, fish traps, bird cages animal feed and oil (Hecht, *et al.*, 1988). Women in Southern Africa rely upon wild plants for use in food, medicines, construction, tool manufacturing and income. Baskets made by women from the leaves of palms in Botswana, Zimbabwe and Zambia constitute an important craft export, while tubers of the grapple plant found in western Botswana are exported for use as arthritis medicine (Hunter, *et al.*, 1990).

In recent years, there has been increasing recognition that non-wood forest products can: (a) provide important community needs for improved rural livelihood; (b) contribute to household food security and nutrition; (c) help to generate additional employment and income; (d) offer opportunities for processing and valuable-added enterprises; (e) contribute to foreign exchange earnings; and (f) support biodiversity conservation and other environmental objectives (FAO, 1995b).

Non-wood forest products derived from forestry and agroforestry have direct impacts on food production and security. The production of fruits, nuts, a wide variety of other foodstuffs, medicinal products, wildlife and fishery products, among others, directly provide important contributions to the household diet, nutritional status and economy. Non-wood forest and agroforestry products also provide opportunities to develop a diverse range of income and employment generating activities. In Asia-Pacific millions of people depend on forestry and agroforestry for income and employment and particularly from the collection, processing and marketing of non-wood forest products. Income earned from these activities enables the family, usually the woman who is responsible for food supply, to purchase food and invest in future production.

Women are quite knowledgeable both about the environment and about the natural base and its uses. Women of certain tribal communities in India for example, know medicinal uses for 300 plant species (Abramovitz and Nichols, 1992). A survey in Sierra Leone demonstrated that women could name 31 products that they gathered

or made from the nearby bushes while men were able to name only eight. Women have variety of knowledge about forestry, forest products and plant and tree species.

Women also have information on the varieties of wild fruits and plants that are important supplements in the diets of poor rural people, especially during the hungry season and on the medicinal uses of plants.

Women are also knowledgeable about and active participants in conservation and environmental management and in the protection as well as promotion of biological diversity. In some African villages, women have found ways to protect animal and plant from extinction.

In many areas, women have demonstrated that they are not only the primary users but also the most effective protectors of the forests. In India, women who recognized the link between deforestation and recurring flood and landslides formed the Chipko Movement. By literally putting their bodies between tree and loggers, they prevented tree felling and applied pressure on the government to investigate and eventually impose a 10 year ban on logging in the affected area. In Kenya, the Green Belt Movement has mobilized more than 80,000 women to plant trees.

The sustainable use of forests requires the participation of all rural populations, including women. Although women's needs often differ from those of men, many program tend to overlook women's specific needs regarding forestry, mainly because makers and planners lack adequate data, information and methodologies to address them. The lack of gender awareness constrains the sustainable use and management of forests and forest ecosystems throughout the world.

### **Situation of Thai Women**

In accordance with changes in the economic structure, the roles of Thai women have changed dramatically. Although Thai women were known to have played an active role in the economy (this is particularly true for female commoners), their economic role was largely limited to farming and small-scale commerce due to the fact that Thai society was a subsistence society. And when farmlands became scarce and insufficient for distribution among daughters, coupled with the introduction of a cash economy, the roles and status of both Thai men and women have changed in several ways.

In the last two decades, Thai women have increasingly participated in the public arena and attained more visible occupational roles. (Richter and Yoddumnern-Attig, 1992) pointed out major factors influencing this change, for instance decreasing fertility rate, delayed marriage, high level of migration from rural areas and increased employment for women. In terms of fertility, Thailand has experienced a "reproductive revolution."

In the 1970s, the Thai government began to look into women's issues more officially, in a large part due to its own realization that an emphasis on economic growth alone could not raise the well-being of the total population. Widening gaps of income were found between men and women as well as between the rural and the urban. Human resources began to be considered the most important factor in national development, and women's role was a major source for change. This new trend was also influenced by the United Nations declaration of the Decade for Women (1976-1985). Consequently in 1978, a task force was appointed under the NESDB (the National Economic and Social Development Board) to draw up a twenty-year women's development plan. Nonetheless, it should not be understood that equality for women has been achieved. In fact, there are so many areas in which women are still discriminated against.

Despite the fact that Thai government complied with the 1985 international Convention on the Elimination of All Forms of Discrimination against Women, there are several provisions with which Thailand implicitly disagrees, such as provisions concerning equal access to education, equal opportunities in employment (including public offices in the government), and equal legal rights of married women. To exemplify, the current education law does not accord with the practice. Some educational institutions are still closed for women, in particular the Military Academy, the Police Academy and the Customs Guards Training School.

Currently, discrimination on the basis of gender is reported to still be practiced in higher education. On November 5, 1997, the Bangkok Post (Internet Edition) reported that several state universities, most of which are prestigious, imposed a quota system based on gender in their admission policies in a number of disciplines. In 1995 Chulalongkorn University reportedly admitted only 30 females and 114 males to the Faculty of Veterinary Science, Kasetsart University 15 females and 85 males, and Prince of Songkhla University 6 females and 17 males. The report (Ekachai, 1995) revealed that at all these three universities, all female applicants admitted achieved higher scores than even the highest scoring male applicant. According to the Ministry of University Affairs, there are currently 18 fields of studies with a quota favoring male applicants, including archaeology, biotechnology, fisheries, veterinary science, agro-industry, agronomics, forestry, natural resources, and physical education, while only 4 fields favor female applicants, most of which are in potentially low-paid service studies such as nursing, hotel services and secretarial duties. Twenty fields are reported to apply a 50:50 quota system. Once the limitation was uplifted, average female can perform their studies better than male one, as in the case of Kasetsart University of Forestry Faculty.

Regarding labor law which requires equal pay for men and women, there are major loopholes by which employers exploit female laborers by paying the lower wages. The protective labor legislation prohibits women from many types of work requiring physical strength and/or considered 'dangerous', such as cleaning machinery or engines while in operation, working on scaffolding which is 10 meters or more above ground, producing or transporting explosives or inflammable materials,

mining underground and so on. Those who are most affected by these protective laws are poor women with little or no education and job training.

In administrative and political law, the local administrative legislation which previously discriminated against women by prohibiting them from becoming village chief and sub-district chief was amended in 1982. Yet, it is still difficult for women to attain such posts, due to negative attitude against women's leadership. Moreover, the positions of deputy chief are still up to date reserved for only men as a result of the rationale those posts involve danger and peace keeping unsuitable for women

Presently, Thai women are increasingly becoming one of the key family income earners, whether single or married. Results from Thai labor force survey conducted in May 1989 by the National Statistical Office reveals that female employment rate in Thailand is higher than that of other Southeast Asian countries. Women represent 45.4 percent of the total labor force. It also seems that women are highly active in a wide variety of industries along with men as shown in Table 1.

Table 1 Percent of women employment in municipal (urban) and non-municipal (rural) areas by industries in Thailand

Industries	Area (%)	
	Municipal	Non-municipal
Agriculture, Forestry, Hunting, Fishing	3.3	67.9
Mining and Quarry	-	0.1
Manufacturing	21.0	12.6
Construction, Repair, Demolition	1.4	1.2
Utilities (electricity, gas, water, sanitation)	0.5	-
Commerce	33.0	10.0
Transport, Storage and Communication	1.9	0.3
Services	38.4	7.9
Activities not adequately described	0.5	-
Total	100.0	100.0

Source: National Statistical Office (1989)

As shown in Table 1 it was obvious that there is a significant difference in the areas of industries in which rural and urban women participate. While rural women participate predominantly in agriculture (67.9%), urban women were working mainly in three major industries, namely services (38.4%), commerce (33.0%) and manufacturing (21.0%).

Table 2 Percent employed persons by occupation and sex in Thailand

Occupations	Employed person(%)	
	Men	Women
Professional	3.1	4.1
Administrative	2.2	0.8
Clerical	2.5	3.6
Sales	7.9	14.6
Farmers	57.6	56.2
Transport, Storage and Communications	5.1	0.3
Craftsmen/ Laborers	18.5	15.7
Services	3.2	4.8
Total	100.0	100.0

Source: National Statistical Office (1989)

When comparing between men and women, it is also interesting to see that the top three occupational activities of both are the same, namely farming, craftsmen/laborers and sales. The figures present quite a balanced picture of male and female occupational role with a reservation that administrative positions are occupied by 2.2% of men and 0.8% of women as demonstrated in Table 2.

Whatever the case may be, it can be concluded that Thai women have made a significant progress in terms of participation in employment. However, they are still experiencing discrimination in many areas. First, despite the statistics given by the National Statistical Office in 1989 that females represent 49.9 percent and males 22.5 percent of unpaid family workers, some study reveals a much higher number of women qualified as unpaid family workers (83.4%).

Most of the area in Thailand, women played only a marginal role in the process of establishing the community forest. At least on the surface they were not actively involved. There are no women in the forest committee. The male members of the committee justify this with the inability of women to join them in fighting forest fires and patrol the forest. This inability seems to be no argument from keeping women out of the forest committee in the neighboring village, where the forest committee has several female members. This inability also does not stop women to help controlling fires in swidden agriculture. Women's participation in establishing the community forest seems to be limited to discussions within the family. The only occasion women took an active role was the forest ordination. Women did most of the work in preparation of the ceremony. Their active role in the preparations of forest ordination corresponds with their traditional role and the sexual labour division: women are responsible for cooking food and organizing community activities in the village.

## **MATERIALS AND METHODS**

### **Materials**

The materials in this present study were interview schedule. There were 3 sets of interview schedule. The first set was divided into 4 parts as follow:

Part 1: Socio- demographic characteristics: This part included respondents' status in household, gender, age, origin, religions, marital status, household members, relationship with family members and level of education.

Part 2: Economic characteristics: This part included respondents' major and minor occupations, monthly income and expenditure and handling money in family.

Part 3: Participation in own land activities: This parts included respondents land holding status legal rights of land, how it is being utilized now, activities of men and women in their own land, they grow tree for household uses, number of trees and who make decision about planting activities in household area.

Part 4: Participation in Community Forestry Program This parts included respondents' involvement in community forest program, period of involvement in community forest program, activities of men and women in community forest program, forest resources utilization (types of forest resources non timber forest products like rattans, bamboos, medicinal plants, insects, mushrooms, vegetables and pattern of uses such as own uses, sale and both and collect by whom men, women & both), situation of community forest, women opinion in community forest, participation in community forest management process, responsibility in community forest program and influence factors to participate in community forest program.

The second set of interview schedule included the women's problem in participating in community forest management program.

The third of interview schedule included the gender division of labour.

## Methods

### 1. Research Design

Research design in this study demonstrated as quantitative design. The flow chart of the research methodology is showed in Figure 2

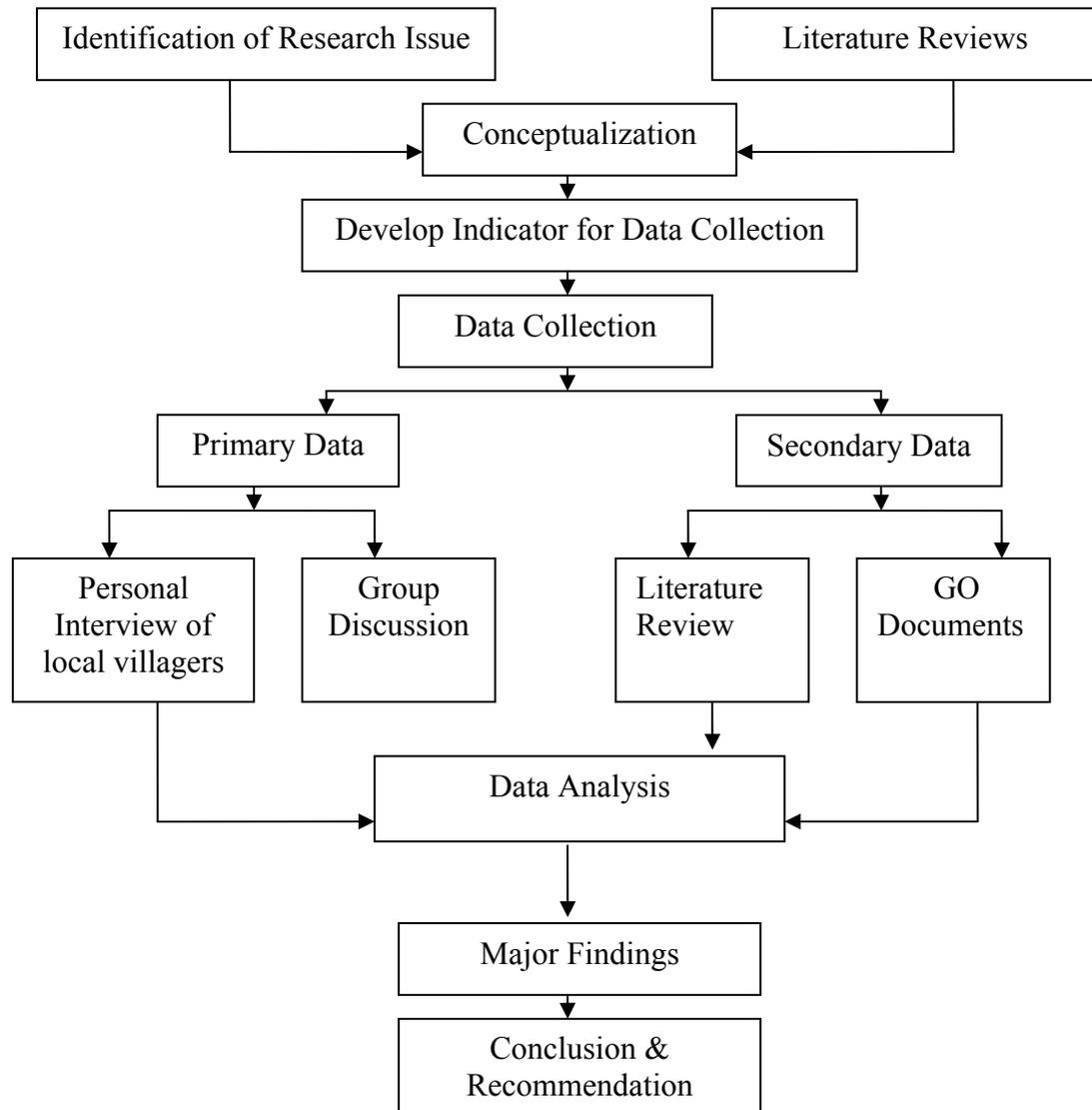


Figure 2 Flow chart of research methodology

## **2. Population and Sampling Techniques**

Population of the study was the villagers of Ban Thung Soong village, Krabi province of Thailand. The unit of analysis was the house hold (HH) of the local people in Ban Thung Soong village. Population was the total number of household, simple random sampling was used for selection of household. The representative (men or women) from the selected households considered as sample for interview. The total number of samples was determined with the use Yamane's formula (1973):

$$n = \frac{N}{1 + Ne^2}$$

Where,

n = Sample Size.

N = Population Size

e = Desire Margin of Error

The total number of population in study area was 253. By using this formula with a margin of error of 5%, the sample size was 155 respondents.

## **3. Development of Data Collection Instrument**

In this research, participant observation method and field study was essential for data analyzing. In the field study, structured interview schedule was designed and used as research instrument to elicit appropriate responses from the respondents. The interview consists of several points like socio-economic and demographic characteristics of the respondents, type of participation, daily activities clock etc. The interview schedule and questionnaires were prepared in English and translated into Thai language to collect more accurate data during actual interview. Group discussion also conducted with the village committee and women committee.

## **4. Data Collection Procedure**

The research was dependent on primary and secondary data collection. Primary data collected through individual/ household (HH) interview. Secondary data collected from different documents, reports and records of different departments like Royal Forest Department and Provincial Forest Department Office.

### **4.1 Primary Data Collection Procedure**

The interview was conducted to collect primary data on the various related issues of women participation in forest resources management at Ban Thung Soong village. The respondents personally interviewed by the researcher and interviewers. Interviewers hired fourth year and /or master's students of Forestry Faculty of Kasetsart University, Bangkok, based on their ability to speak and

understand very well both in English and Thai. The interviewed and/or survey was conducted during May, July, October, 2005 and February, 2006.

Individual/HH interviews were conducted with randomly selected interviewees for selected sample. Both male and female respondents were considered. In the case of households interviews the representatives from households was considered interviewees. Typical HH interview was last for about 1 hr. The interviewee was treated as respondents to a questionnaire. During data collection period, the completed question schedules were checked by the researcher to identify missing items. Some times researcher re-interviewed the respondents to fill up the missing items of questionnaire.

#### 4.2. Secondary Data Collection Procedure

Secondary data was collected from different documents, reports and records of Royal Forest Department and Provincial Forest Department Office. Other literatures related to forest resources management are the sources of secondary data of this research which was collected from internet searching.

### 5. Data Analysis

Quantitative data were measured and analyzed as follows:

#### 5.1. Measurement of Data

**Respondent's status in household-** head of household, spouse, parents, son/daughter and/or other.

**Respondents gender-** male or female.

**Respondents age-** the number of years passed after birth.

**Respondents origin-** local or migrant

**Respondents religion-** Buddhist or other.

**Respondents marital status-** single, married, divorced and widow.

**Respondent's family members-** 2 members, 3-5 members, 6-8 members and above 9 members.

**Respondent's relationship with family members-** friendly, good, not good and others.

**Respondents education-** illiterate, primary, secondary and above.

**Respondents' major occupation-** primary sources. It was categorized into agriculture and farming related., labour, business, govt. service, forestry related-rubber, oil palm and mixed fruits and others.

**Respondents' minor occupation-**primary sources. It was categorized into agriculture and farming related., labour, business, govt. service, forestry related-rubber, oil palm and mixed fruits and others.

**Respondents' monthly income-** the amount of money (in Baht) that the respondents earned from their major and minor occupation. It was categorized into <2500, 2500-7500.7501-12500, 12501-20500, 20501-30500, above 30,501

**Respondents' monthly expenditure-** the amount of money (in Baht) that the respondents spent in a month. It was categorized into <2500, 2500-7500, 7501-12500, 12501-20500, 20501-30500, above 30,501

**Handling money in family-** respondents and his or her family members handling the money. It were categorized into husband, wife, both, children.

**Respondents family and holding** It was categorized into own land (Rai).

**Respondent's local rights of land-** respondents and his or her family who has legal rights of their land. It was categorized into husband, wife, both, children

**Respondents utilize their land-** respondents utilize land as rubber plantation, oil palm plantation, orchard,. Livestock, homestead. It was categorized into. yes or no.

**Activities men and women in their own land-** rubber plantation, oil palm plantation, orchard, livestock and homestead. It was categorized into yes or no.

**Respondents forest tree grow for household uses-** grow and do not grow.

**Total number of trees-** In case of grow trees, total number of tree grow was calculated.

**Make decision about planting activities in household area-** need decision for land use, selection of species and cutting and selling in house hold area. It was categorized into men, women and both.

**Respondents' involvement in community forest program-**It was categorized into more involve, involve, less involve and no involve.

**Period of involvement in community forest program-** It was categorized into 1-2 year, 2-3 year, 3-4 year and above 4 year.

**Activities of men and women in community forest program-** It was categorized into men, women and both.

**Forest resources utilization-** uses only non timber forest products For this purpose it were classified into rattans, bamboos, medicinal plants, insects, mushrooms, vegetables and pattern of uses categorized into own uses, sale and own uses and sale(both). Collect by whom, it was categorized into men, women & both.

**Situation of community forest -** Assessment the situation of village forest coverage after introducing community forest program. It was categorized into yes or no.

**Women opinion in community forest-** It was categorized into yes or no.

**Respondents participation in community forest management process-** decision making, planning, implementation and monitoring and evaluation. It was categorized into yes or no.

**Respondent's participation and responsibility in community forest program-** for these purpose thirteen activities were prepared. It was ranking as most, more, moderate, less and least.

**Influence factors to participate in community forest program-** for these purposes seven influencing factors were prepared. It was ranking as most, more, fair, less and no effect.

**The second set of interview schedule** - included the women's problem in participating in community forest management program. In the case of socio-cultural and religious problem, it was categorized into more, limited and less. For economical problem, it was categorized into equal, unequal and none.

**The third set of interview schedule included the gender division of labour-** included productive activities, household activities and community works. It was categorized into men, women, both, boy, girl, and children.

## 5.2 Uses of Statistics

Quantitative data were analyzed in this study. Descriptive statistics, frequencies distribution, percentage, standard deviation, mean, media, range, maximum, minimum were used to explain all variables. The effect of independent variables on dependent variable was tested through correlation method.

## 6. Conceptual Frame Work

People participation is the key to success of development program. For sustainable community forest management, local peoples both men and women participation is needed. Women are the one who work closely with community forest. Women play a significant role in forest resources management. Therefore, women participation in community forest resources management has been considered as a main focus of this study.

The review of literature and related research revealed that people (men and women) participation was influenced by a number of factors. Participation may be different levels and different types. In this study, it was hypothesized that local people both men and women participated in forest resources management and that participation was related to the factors such as status in household, age, origin, religions, marital status, household members, relationship with family members, level of education, major occupation, minor occupation, monthly income, monthly expenditure, forest resources utilization, involvement in community forestry program, period of involvement in community forestry program and responsibility in community forestry management process. The process of people (men and women) participation in community forest resources management activities have been divided into 4 steps or process namely decision making, planning, implementing and monitoring and evaluation.

The relationship between independent variables and dependent variable are shown as Figure 3

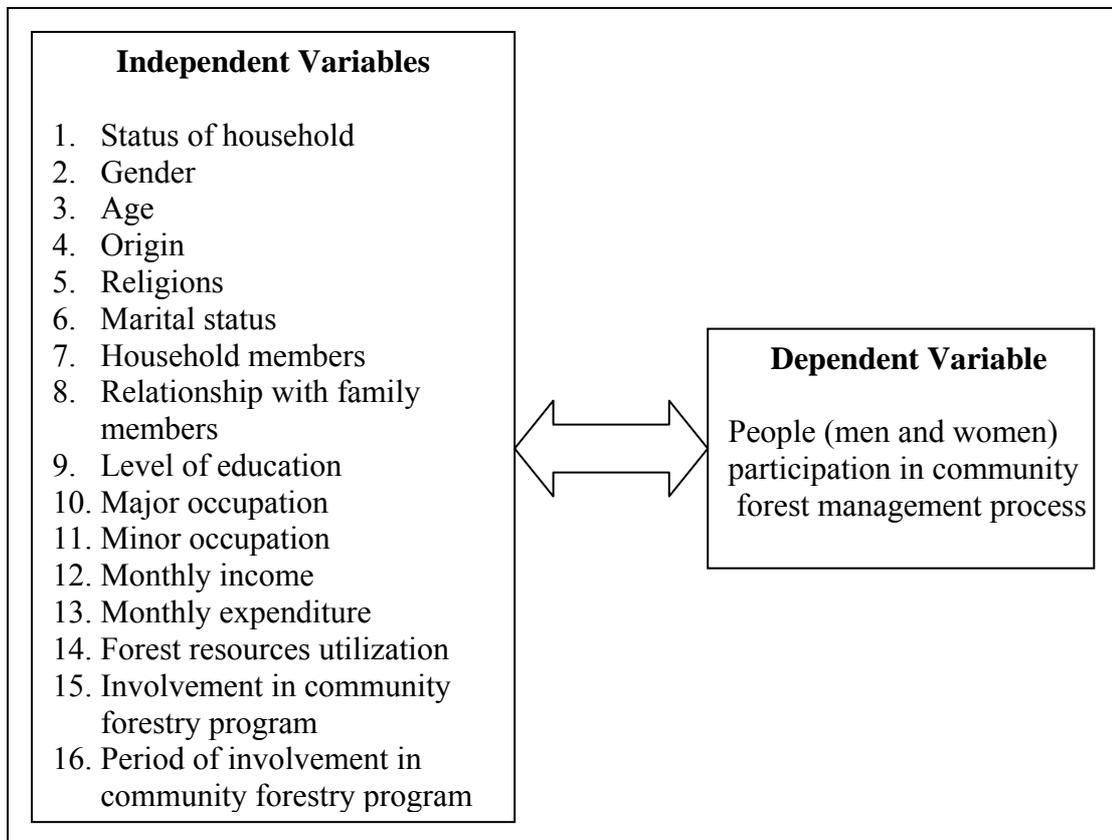


Figure 3 Conceptual Framework

## 7. Research Hypothesis

Based on the conceptual framework, the hypothesis was developed as follows:

1. Correlations between status of household and people (men and women) participation in community forest management process.
2. Correlations between gender and people (men and women) participation in community forest management process.
3. Correlations between age and people (men and women) participation in community forest management process.
4. Correlations between origin and people (men and women) participation in community forest management process.
5. Correlations between religions and people (men and women) participation in community forest management process.
6. Correlations between marital status and people (men and women) participation in community forest management process.
7. Correlations between household members and people (men and women) participation in community forest management process.

8. Correlations between relationship with family members and people (men and women) participation in community forest management process.
9. Correlations between level of education and people (men and women) participation in community forest management process.
10. Correlations between major occupation and people (men and women) participation in community forest management process.
11. Correlations between minor occupation and people (men and women) participation in community forest management process.
12. Correlations between monthly income and people (men and women) participation in community forest management process.
13. Correlations between monthly expenditure and people (men and women) participation in community forest management process.
14. Correlations between forest resources utilization and people (men and women) participation in community forest management process.
15. Correlations between involvement in community forestry program and people (men and women) participation in community forest management process.
16. Correlations between period of involvement in community forestry program and people (men and women) participation in community forest management process.

### **Study Area**

There are fourteen Provinces in Southern Thailand including Krabi. The study has conducted at Ban Thung Soong village which is one of the five villages in Tambon Khao Yai. Ampoe Ao Luk in Krabi. The village is located between latitudes 8°27' and 8°30' North, longitude 98°42' and 98°45' East, about 64 km northeast of Krabi. The borders of the village are:

North: Na Nua Subdistrict Ao Luk District, Krabi.

East : Khi Ri Wong Subdistrict. Plai Praya District, Krabi

South: Ban Nai Yuan Tai Village, Khao Yai Subdistrict, Ao Luk District, Krabi.

West : Ma Rui Subdistrict, Tup Pud District , Phang Nga.

Generally, the topographical features of the village area are classified as low land and hill terrain. The hill landform is lied on the north, northeast and northwest boundary of village, namely Khao Mai kaew- Kuan Ying Wua, Khao Yai and Kao Lang Tang.

#### **1. Climate**

Tropical monsoon climates are found in Ban Thung Soong village. The area is influenced by the two monsoon namely southwest and northeast monsoon, and occasionally by the cyclone and depression storms. Thus the climate in this area is different from the other regions. There are two seasons in this area as follows:

1.1 During the May to December is Rainy season, approximately eight months. It was divided into two periods. The first period (May to September) is called northeast monsoon and second period (October to December or January) is called southwest monsoon. Northeast monsoon is caused by the air mass move from the South China Sea; during this period the Rainfall occur continuously. The second period is influenced by the southwest monsoon. During this period the air mass moves from the Indian Ocean and bring few Rain fall.

The first period was prevented the Rain to Ban Thung Soong by the Khao Phanom Benja and Nakorn Sri Thammarat Mountain Range and the second period was prevented by Phuket Mountain Range.

1.2 January to April is called dry season and during this period the Rainfall occur occasionally.

**Table 3** Average Rainfall, air temperature and relative air moisture at Aoluk and Ko Lunta Metrological Stations(1996-2005)

Month	Average of			
	Rainfall (mm)	Rainy (day)	Temperature (°C)	Relative humidity (%)
January	51.6	3.1	27.72	78.2
February	33.9	2.2	28.23	76.7
March	83.8	5.8	28.76	79.1
April	100.3	7.6	29.12	81.2
May	179.3	10.0	28.9	82.9
June	312.7	12.1	28.37	84.8
July	342.2	13.0	28.34	83.7
August	384.7	12.5	28.23	84.4
September	350.4	14.0	27.6	86.4
October	320.1	14.2	27.28	87.2
November	180.8	9.5	26.97	87.2
December	88.5	6.3	27.54	82.3
Year	2428.3	110.3	28.08	82.67

Source : The Meteorological Department, Ministry of Transport and Communications (2006).

Regarding Table 3 the average monthly Rainfall ranges 51.6mm to 384.7 mm while average total annual Rainfall 2428.3 mm. The average air temperature is the highest in April (29.12°C) and lowest in November (26.97°C) while average annual temperature is (28.08°C). The annual average of relative humidity is 82.67%.The highest and lowest average of relative humidity occurs in October, November and February respectively.

## **2. Soil Characteristics**

Soil characteristics are directly controlled by relief, parent materials, climate, timing and organism. Soil texture origins by decomposition of parent material of Ban Thung Soong are mainly silt, silty clay and silty sand in topsoil and clay in subsoil. Soil color is brown, yellow and red. The pH of soil is approximately 4.5-5.5.

## **3. Demographic Information**

Ban Thung Soong village is one of the village of Khao Yai Sub-District, Ao luck district in Krabi Province. Community started with few people settling in this area before 100,000 years ago. As living place Ban Thung Soong is suitable for people so that population is increasing. New comers are allowed to settle here and live in harmony with early settlers. The total area of the village is approximately 16,336 Rai (2614 ha). According to the village committee office's information, about 253 families are living in this area. Total numbers of these families are 1056. The women and men percentage is 51% and 49%. Women percentage is slightly higher than men. All women of Ban Thung Soong village are eager to hard work like the men.

Table 4 Household, Populations by sex of Ban Thung Soong village

Village	Area(Ha)	HH(Family)	Men Number	Women Number	Population Number
BanThung Soong	2614	253	518 49%	538 51%	1056

Source: Village Information Center (2005)

## **4. Distribution of Land**

Most of people (75%) of the people are native and 25% are migrated. They are scattered lived in this village and occupy land about 10-15 Rai. The land use type of village is comprised the forest, agricultural land like rubber plantation, oil palm plantation, settlement land and the others.

Table 5 Distribution of land of Ban Thung Soong village

Name of the land	Area( Rai )
1. Agricultural land	
1.1 Land under oil palm	15,781
1.2 Land under rubber	15,329
1.3 Land under mixed fruit orchard	1,944
1.4 Vegetable and other	566
2. Community forest land	7,300
3. House hold	2,830
Total	43,750

Source: Village Information Center (2005)

## 5. Education

Increased education in the village area gives villagers the ability to control their economic, social, cultural and environmental situation in future. In Ban Thung village has only one primary school and rely on old temples in the adjacent villages for formal and religious education. To create awareness about conservation of forest and protection of environment, environmental education is included along with formal education. According to the village information centre, about 100% villagers are literate.

The map of study area is given in Figure 4.

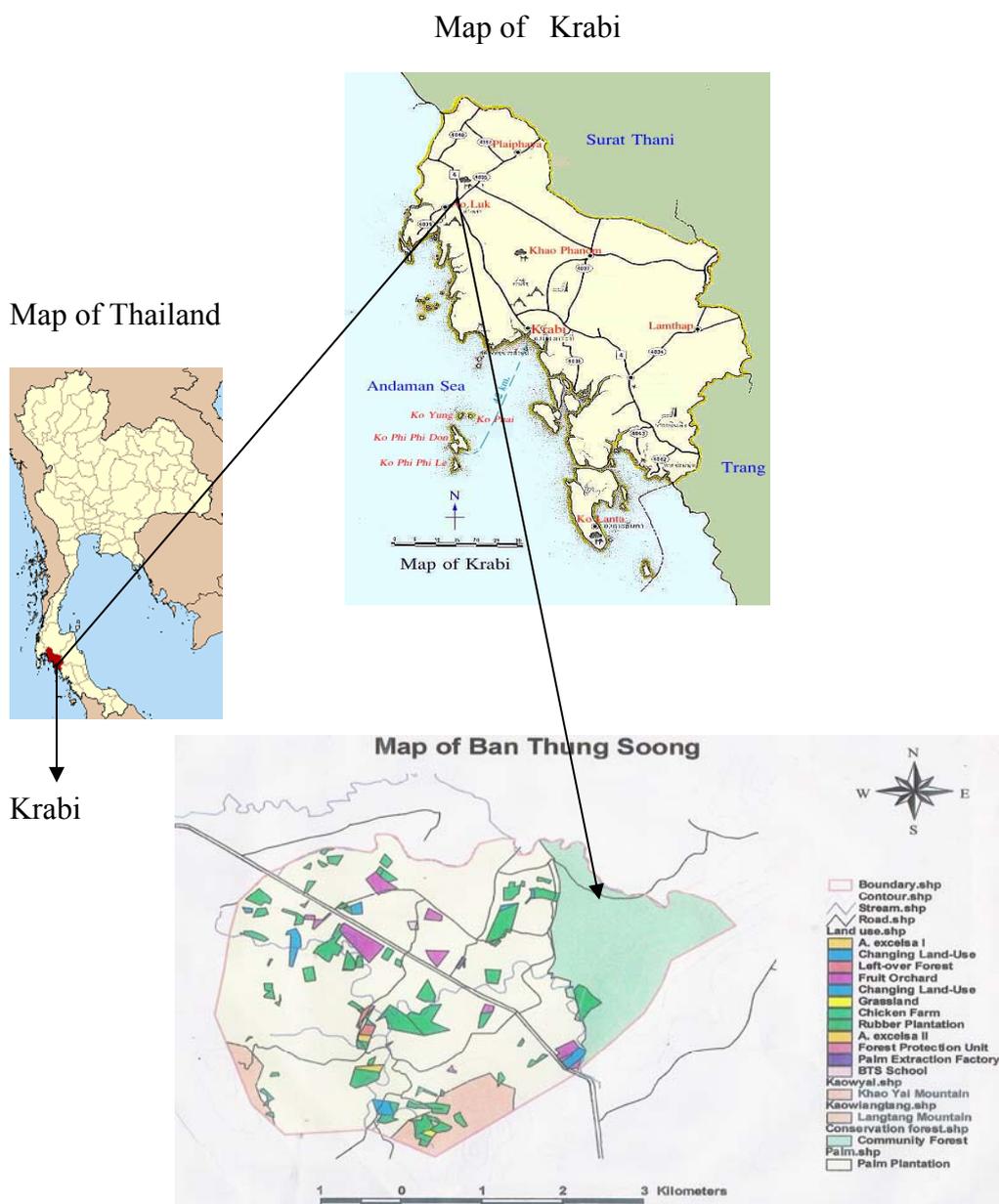


Figure 4 Map of study area

## **RESULTS AND DISCUSSION**

Based on data collection by using interview schedule and group discussion. The results and discussion consist of four parts. The first part describes the past and present situation of Ban Thung Soong community forest and management pattern of community forest which obtained by group discussion and uses of community forest which obtained by interview schedule. The second part consists of socio-demographic information, economic background, participation in their own land and participation in community forest management which obtained by interview schedule. The third part discusses the problem of women in participation of community works and fourth part focuses on gender division of labour.

### **First Part**

#### **1. Past and Present Situation of Ban Thung Soong Community Forest**

In the past, Ban Thung Soong village was covered by dense forest. From the beginning, inhabitants of this village provided for themselves by shifting cultivation and collecting minor forest products. The village produced upland rice, pumpkins, sweet potatoes, corn, rattan and gourds by shifting cultivation. The villagers have also acquired knowledge concerning the utilization of minor forest products that they have gathered from the forest

In October, 1962, heavy Harriot has affected Laem Talum Phuk Cape in the eastern seacoast of southern peninsular. The storm had killed 1,000 people and damaged forest and wildlife resources in both the eastern and western coasts, including Ban Thung Soong village. The remaining *Dipterocarpus alatus* trees in the village and in the Kuan Ying Wua forest have felt down in number.

Logging operation had taken place in the Ban Thung Soong village and the forest as controlled by Royal Forest Department. After three years logging villagers noticed both normal and illegal logging. They decided to protect the remaining trees.

Moreover the government agreed to convert the degraded Kuan Ying Wua Forest for oil palm plantation establishment. This government policy on oil palm program had stimulated the interest of the villager to protect the remaining forest of Kuan Ying Wua (3,000 Rai) and Khao Mai Kaew Forest (4,300 Rai). They sent Mr. Montri Kaosa-ard and Mr. Ardoon Kaosa-ard (two deputy chiefs) to present the letter to the Prime Minister with the support given by the Member of Parliament (Mr. Vasana Boonpantanti) in Krabi. Later on, the cabinet agreed with the villager's proposal. In 1991, the Royal Forest Department agreed to establish Ban Thung Soong Community Forest and allowed the villagers (men and women) to manage their community forest. In 1991, the Royal Forest Department agreed to establish Ban Thung Soong Community Forest and allowed the villagers (men and women) to manage their community forest.

In 1998, The Andaman Institute, Kasetsart University Krabi Campus, Krabi Provincial Forest Office and Krabi KU Alumni Association established the Ban Thung Community Forest for Ecotourism with Ban Thung Soong villagers.

In 1999, the community forest in Ban Thung Soong was given the responsibility of protecting the forest and controlling the use of its natural resources. In 2001, Queen Sirikit of Thailand saluted the villagers in the area for their efficient participatory approach in forest management.

Ban Thung Soong village has comprised of 3 hills, Kua Ying Wua, Khao Yai and Khao Lang Tang. There are covered by tropical moist forest, which is slightly different in structure and species composition. Kua Ying Wua and Khao Lang Tang hill were the secondary forest that succeeded from logging and from setting telecommunication station, respectively forest type of Khao Mai kaew was the tropical moist forest on the lime stone mountain. These forest areas were dominated by *Dipterocarp* sp., *Hopea* sp., *Alstonia* sp., *Memecyclon* sp., *Eugenia* sp., *Ficus* sp., Bamboo, Rattan etc. Presently comparison the plant diversity of Ban Thung Soong Community Forest to the other natural tropical rain forests it seems that plant diversity in secondary managed and utilized by community is similar to undisturbed forest in national park and protected areas managed by Royal Forest Department. However there was still plenty of small-sized trees and dominated by secondary species as *Schima wallichii*, *Crypteronia paniculata* and *C. pinnata*. There was high diversity of useful plants in Community Forest.

About 90 species of medicinal plants were found in Ban Thung Community Forest which used as food. Ban Thung Soong Community Forest was also rich of wildlife. There were 24 species of amphibians, 14 species of reptiles, 79 species of birds and 23 species of mammals. For richness of plant diversity and wildlife, this community forest was declared as the appropriate site for community based ecotourism.

## **2. Forest Resources Management Pattern of Ban Thung Soong Community Forest**

In 1979, Thailand had only 16 national parks covering an area of 9,357 sq. kms. In, 1996, this had increased to 81 national parks covering an area of 41,738 sq. kms (Pipithvanichtham 1997). In addition, a number of programs were initiated to encourage people's participation in forest management. In 1991, the Royal Forest Department began a process to develop a Community Forestry Bill to involve local communities in managing communal forest areas. The bill has passed through many processes of public involvement and it is hoped that it will become law in the near future. There are many who oppose the Community Forestry Bill and fear that the bill will cause further forest encroachment and degradation particularly in the protected forest. Thus, while many in the Royal Forest Department see the bill as the only viable way to solve land disputes, forest encroachment and increasing rural discontent

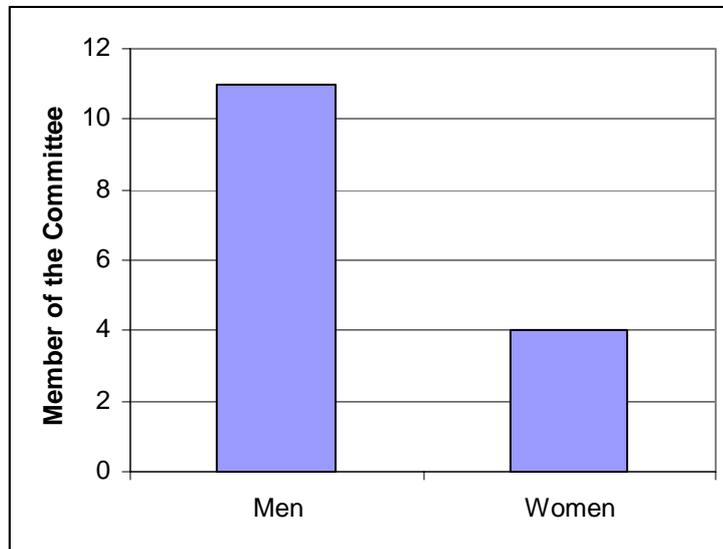
In addition, the Eighth National Social and Economic Development Plan (1997-2001) emphasized human resource development as its main thrust. Many of the strategies in the plan focus on people's participation in national resource management.

The 1992 Tambon Administration Act (TAO) provides a greater role for local government units in forest management. Under this act, TAOs (sub-district governmental units) have responsibility for managing all natural resources within their boundaries. This decentralization plan was further supported by the new Thai Constitution which came into law in 1997. The constitution states that local people and organizations should be involved in managing their natural resources. Both of these laws further enshrine people's participation in forest management and pave the way for clarifying land-use issues and people's role in forest management (Poffenberger 1999).

According to draft Community Forestry Act, Clause 25 the village committee, tambon council or tambon administrative organization assembly has been permitted by the director general to be the caretaker of the community forest pursuant to section 20 the village committee, tambon administrative organization assembly shall be the authority exercising the power and duties of the community forest committee pursuant to this Act.

To properly manage of forest resources of Ban Thung Soong Community Forest, a community forest committee has been appointed. The committee consists of 15 members. To give emphasizes on women participation, 4 women members has been appointed in this committee (Figure 5). The members are elected by the villagers. In the initial phase all hunting and logging were banned. The villagers joined in forest rehabilitation activities including planting and weeding in degraded areas of community forest. In addition, Ban Thung Soong Regulation (Appendix-1) was drafted by villagers led by the community forest committee with support from Kasetsart University, the main purposes of maintaining the forest are watershed protection and conservation the forest resources ( trees, medicinal plants, wildlife, insects etc) for future generations

### Community Forest Committee



**Figure 5** Gender distribution in the Ban Thung Soong Community Forest Committee.

There are many committee at Ban Thung Soong village, among these, village committee, community forest committee and women committee are playing major role for village development. Overall situation of this village is controlled by village committee. Women committee helps to improve the women condition. Besides this, the following forestry related activities are done by women committee:

- 12 August (Queen Birthday) and 5 December (King birthday), clean the environment in the forest
- Restoration of plant species.
- Release wild animals into community forest.
- Provide services to village guests.
- Patrol in community forest.
- Collect NTFPs for community activities
- Future program, community based tourism based on the new water reservoir.

### **3. Uses of Community Forest**

The community forest divided into 4 zones as conservation zone, recreation and tourism zone, utility zone and community and homestead zone. The forest utilities in Ban Thung village, the villagers said that the few villagers collected edible plants (*Parkia speciosa*, *P. timoriana*, *Diplazium esculatum*), medicinal plants and mushrooms. Women and men are consumers, collectors and managers of forest and forest products. Utilization of forest resources was allowed only for self consumption.

Women are usually the ones engaged in household subsistence activities. Though the questionnaires survey in the field included questions what type of forest

products they do take from the forest, what purpose and who collect the forest products from forest.

Table 6 Utilization of forest resources

(n=155)		
Characteristics	Number	Percentage
<u>Forest resources utilization</u>		
From own land	104	67.09
From Community forest land	51	32.91
Total	155	100

Table 7 Types of uses of forest products

(n=155)			
Types of uses forest products	Number (%)		
	Own uses	Sale	Both
Medicinal plants	136 (87.74)	-	3 (1.93)
Insects	127 (81.93)	1 (0.64)	7 (4.51)
Bamboos	126 (81.29)	3 (1.93)	6 (3.87)
Mushrooms	99 (63.87)	2 (1.29)	9 (5.80)
Rattans	88 (56.77)	-	1 (0.64)
Vegetables	37 (23.87)	8 (5.16)	41 (26.45)

Table 6 presented the utilization of forest resources in Ban Thung Soong village. It was found that 67.09% respondents collected forest products from their own land and 32.9% respondents depended on community forest for collection of forest products.

Based on Table 7, the results reviewed that medicinal plants, insects and bamboos were mainly used for own consumption and others forest products were used as own consumption and sale also. The types of uses of forest products and who was the responsible (indicated Table 8) for collection of these forests products was described in the below:

### 3.1 Medicinal Plants

In Thailand, medicinal plants are very important for daily consumption. 87.7% of respondents used medicinal plants for own consumption and 1.93% used for sale and also own consumption. Individually 5.9% of men and 68.4% of women and jointly 14.6% respondent's collected medicinal plants from own land or community forest. Most popular plants are *Cinnamomum sp*, *Curcuma longa*, *Elephantopus scaber*, *Zingiber zerum bet* etc.

### 3.2 Insects

It is one kind of delicious food to Thai people. 81.93% of respondents used it as food that is used for own consumption. 0.6% and 4.51% respondents used sale and sale and own consumption purposes. Jointly 31.0% and individually men 22.6% and women 32.9 % collected insect from own land and community forest. The most popular insects collected are red ant larvae. Occasionally, they collected the larvae of honey bees.

### 3.3 Bamboos

Bamboo is a very important non-wood forest product of Thailand. The products from are mainly used for food, making household materials, decoration and furniture. Bamboo shoot is very attractive food of Thai people. The study indicated that 81.29% respondents used bamboo for own consumption and 1.93% for sale. 3.87 % respondents used bamboo for both purposes. Individually 7.1% of men and 42.6% of women and jointly 36.8% respondents collected bamboo from own land or community forest land. Most popular edible bamboos in the forest are *Bambusa bambos*, *Thyrsotachys siamensis* etc.

### 3.4 Mushrooms

Mushroom is one kind of delicious food for daily consumption. 63.87% of respondents used mushroom for own uses. Respectively 1.29% and 5.80% respondents used mushroom for sale and sale and own consumptions. Jointly 8.4 % and individually men 6.5% and women 56.8% collected mushroom from own land and community forest. They collected Hed kone (*Termitomyces sp.*) and sale along the road side in the village.

### 3.5 Rattans

Rattan is a very important non-wood forest product of Thailand. The products from rattan are mainly used for making household goods, decoration and furniture and food. 56.77% that is 88 respondents collected rattan for own uses and 1 person collected rattan for own uses and also sale. In this study it was observed that men (12.3%) and women (14.8%) individually rattan collector and jointly they collected rattan 31.0% from community forest or their own land

### 3.6 Vegetables

23.87% of respondents used vegetables for own uses. Respectively 5.16% used it for sale and 26.45% respondents used it for sale and own uses. Jointly 27.1% and individually men 5.8 % and women 25.2 % collected vegetables from own land and community forest. Most common plants collected are *Parkia speciosa*, *Parkia timoriana*, *Gnetum snemon*, *Magnifera foetida*, *Alpmia officinarum*, *Archidendron jiringa* etc.

**Table 8** Collection of forest products by men and women

Types of forest products	Number of respondents (%)		
	Men	Women	Both
Rattans	19 (12.3)	23 (14.8)	48 (31.0)
Bamboos	11 (7.1)	66 (42.6)	57 (36.8)
Medicinal plants	10 (5.9)	106 (68.4)	23 (14.6)
Insects	35 (22.6)	54 (34.8)	48 (31.0)
Mushrooms	10 (6.5)	88 (56.8)	13 (8.4)
Vegetables	9 (5.8)	39 (25.2)	42 (27.1)

After analyzing the results it was found that mainly forest products is used for home consumption and women are active collector of forest products.

## **Second Part**

### **1. Socio-Demographic Characteristics**

The socio-demographic characteristics of the respondents consist of status in household, gender, age, origin, religion, marital status, and relationship with family, household members and education. The socio-demographic characteristics of the respondents are summarized in Table 9.

#### 1.1 Status in Household

Out of 155 respondents 43.5% were head of household. According to the women percentage, 3.2% head of household were women. Whereas 53.5%, 1.9% and 1.3% respondents were spouse, parent, and son/daughter respectively. Women are not usually enumerated as heads of households unless they are either living alone or there are no adult men in the households. Only about 24 percent of the households in Thailand are headed by women, and over half of the women household heads are widow (National Statistical Office, Report, 2006).

#### 1.2 Gender

Total number of sample was 155, among them 93 and 62 were female and male that is (60%) and (40%). Female respondents were higher than male due to the researcher gave emphasis on women respondents during questionnaire collection. In cooperation with the women committee, the respondent one among the majority group that have played the active role in village activities.

#### 1.3. Age

The largest group of respondent's age range was 31-40 years old that is (34.89%). Whereas other groups were below 20 years, 21-30 years, 41-50 years, 51-60 years and above 60 years and their percentage were (1.3%), (13.5%), (21.5%), (12.9%) and (15.5%).

#### 1.4. Origin

76% respondents are native to Ban Thung Soong village which they still reside. This results in a strong connection between men and women and their geographical location, creating proactive and influential attitudes in the villagers. The village leader also found it easy to unite the villagers in a common goal of protecting the forest. Among the total percentage of women, (43.2%) women born in this village and also settled in this village. So their attitude, behavior, belief, cultural and environmental thinking was more or less similar to each other. Therefore, women can easily take part in protecting their forest.

Table 9 Socio-demographic characteristics of the respondents

Characteristics	Respondents (%)		
	Men	Women	Total
(n=155)			
<b>Respondents house hold status</b>			
Head of house hold	62 (40)	5 (3.2)	67 (43.2)
Spouse	0	83 (53.5)	83 (53.5)
Parents	0	3 (1.9)	3 (1.9)
Son/ daughter	0	2 (1.3)	2 (1.3)
<b>Respondents gender</b>	62 (40)	93 (60)	155 (100)
<b>Respondents age class (in year)</b>			
Below 20	1 (0.6)	1 (0.6)	2 (1.3)
21-30	7 (4.5)	14 (9.0)	21 (13.5)
31-40	23 (14.8)	31 (20.0)	54 (34.8)
41-50	14 (9.0)	20 (12.9)	34 (21.9)
51-60	7 (4.5)	13 (8.4)	20 (12.9)
Above 60	10 (6.5)	14 (9.0)	24 (15.5)
Mean = 3.78			
Standard deviation = 1.			
<b>Respondent's origin</b>			
Local	51 (32.9)	67 (43.2)	118 (76.1)
Migrant	11 (7.1)	26 (16.8)	37 (23.9)
<b>Respondent's religion status</b>			
Buddhist	62 (40)	92 (59.4)	154 (99.4)
Other	0	1 (0.6)	1 (0.6)
<b>Respondent's marital status</b>			
Single	2 (1.3)	2 (1.3)	4 (2.6)
Married	60 (38.7)	83 (53.5)	143 (92.2)
Widow	0	8 (5.2)	8 (5.2)

Table 9 (Continue)

Characteristics	Respondents (%)		
	Men	Women	Total
(n=155)			
<b>Respondent's house hold members</b>			
2	9 (5.8)	9 (5.8)	18 (11.6)
3-5	48 (31.0)	72 (46.5)	120 (77.5)
6-8	5 (3.2)	12 (7.7)	17 (10.9)
Above 9			0
<b>Respondent's relationship with Family members</b>			
Friendly	31 (20.0)	67 (43.2)	98 (63.2)
Good	29 (18.7)	26 (16.8)	55 (35.5)
Not good	1 (0.6)	0	1(0.6)
Others			0
<b>Respondent's Educational status</b>			
Illiterate	2 (1.3)	0	2 (1.3)
Primary	42 (27.1)	72 (46.5)	114 (73.5)
Secondary	12 (7.7)	13 (8.4)	25 (16.1)
Above	6 (3.9)	8 (5.2)	14 (9.1)

### 1.5. Religions Status

Except two families, all inhabitants of Ban Thung Soong village were Buddhist. Buddhism considered as an essential pillar of the society. Nationally 85% were Buddhist whereas Ban Thung Soong village were near about 100%. It showed that most of the families were Buddhist, so they share common religious thinking and belief. Additionally they can participate easily community work through apply their religious thinking.

### 1.6 Marital Status

Most of the respondents (92.2%) were married while 2.6 % and 5.2 % were single and widow. No respondents were divorced because Thai women don't want to talk about their family problem. When they got the problem they have been patiently with their husband, it was not for themselves but for their children. They thought that if they have separated, it will disturb their children's mind. They said that

mother tolerate for the sake of their children. If either or husband passed away, half of them in the middle age will remarry but still take good care their children. In Ban Thung Soong there is a strong linkage among family members and relatives.

### 1.7 Household Members

Most of the family members were consists of 3-5 members (77.5%).Whereas 11.6% and 10.9 % of respondents household size were 2 (two) and 6-8 members. During the past three decades, household size has gradually decreased mainly because of efficient family planning. The national average household size in 2000 was 4.1 (NSO; Demographic Characteristics Projection for Thailand 1990-2015).The respondents' household size of this village maintains the standard with national average.

### 1.8. Relationship with Family Members

63.2 % and 35.5 % respondents live in friendly and good environment. It seemed that family conflict was less in Ban Thun Soong village. When a women live in a suitable environment, her thinking always produces to do good for her family and also her village and her country. 43.2% of women believed that their family relation was friendly that is they were free from men dominancy. During my field survey, I talked to Mrs. Charas Pridapol (date-11.02,2006) about her family relation and work at outside. She told me that she worked hard along with men. She has equal right in democracy and full responsibilities for establishment and development of their permanent village.

### 1.9. Education Status

Two-third of the respondent's (73.5%) have compulsory education (including grade 4 and grade 6). !6.1% have secondary education and only 9.1% of this group has reached the above secondary level so that this group education level is bachelor degree.1.3 % were illiterate where women percentage was zero. This result indicated that women of Ban Thung Soong were being aware about their education. Therefore, women percentage was higher than men in primary education. Since the National Education Act of 1999 prescribes the duration of compulsory education for nine years, as a result, children should be at school until the age of 15 years. In my field survey I visited the primary school of Ban Thung Soong, there 100% children have been taken primary education. In most classes, I have seen girls actively showed and lead the activities better than boys. This was confirmed well with my previous visit to Ban Nong Kham school in Ratcha Buri. If, the girl get opportunity they can perform well.

In terms of education, there have been improvements in the rates of female enrollment. The proportions of girls and boys enrolled at the primary and secondary levels are about the same, and there is near gender parity at higher levels of education, with female's students outnumbering males. Yet, the number of Thai university graduates accounts for only 5% of the country's total population .Percentage of female students at Primary level 5,996,507 (48.47), Lower Secondary

Level 2,432,706 (49.80), Upper Secondary Level 1,138,215 (55.76), University 73,648 (56.69) (Ministry of Education, 2000.)

## **2. Economic Characteristics**

### **2.1 Major Occupation**

Rubber and oil palm plantation are the main income sources of Ban Thung Soong village. So most of the people were engaged in these activities. They earned sufficient money from this occupation which helped them to smoothly run their livelihood. 43.9 % people were engaged in rubber and oil palm plantations. While women percentage was 28.4%. So they were enthusiastically engaged in this occupation. The second largest group was farmer-agriculture and farming related and their percentage was 31.6 %. In this case women percentage was less than men. Third group was business which percentage was 7.8 %. In my field survey, I observed that some women engaged their personal business like processed food supply or run small grocery stores. The fourth group 5.8% was labour including 5.2% women. In this case women outnumber men. Fifth group was government service and their percentage was 3.8 while men and women ratio were (3:3). The last group was others which percentage was 7.1. In this group mostly housewife unpaid labour and some technician were included.

Differential earning patterns were also seen with regard to the incomes earned by female and male members of the household, that of males was higher, except for the year 1988 (Kaosaard and Kaewmeesee, 2000). However, women's average contributions to household income have increased from 29.8 percent in 1976 to 39 percent in 1998.

Participation of women in the Thai labour force is around 43%. These employed persons are scattered in various kinds of jobs. However, statistics reveal that twice as many women as men maintaining household businesses, and these women are unpaid. The biggest gap between men and women is in the role of business owner. In Thailand, there were 1,900,000 female business owners compared to 7,800,000 males (National Statistical Office, 2001 a). But in the case of Ban Thung Soong women maintained household business through co-operative system and it was managed by women.

### **2.2 Minor Occupation**

10% respondents didn't depend on minor occupation. Among 37.4% respondents, men (18.7%) and women (18.7%) depend on agriculture related farming activities. Because they had own farmland, so most of the men and women gave emphasize on agricultural farming as a minor occupation. In Thailand overall, farm incomes contribute less than half of total farm household income. Women play a major role in rural systems of production and income generation. Among agricultural smallholders, every member of the family, regardless of age and sex, contributes to

production and women play important roles in all farming systems (Women in Thailand, Country briefing paper, ADB, December, 1998.

The second group (20%) was business, the third group (18.1%) was rubber and oil palm related, 4<sup>th</sup> group was labour (6.5%) and other group(8.3%) were engaged with minor occupation for improvement of their economy development. Major and minor occupations are summarized in the Table 10.

Table 10 Occupation of respondents

Characteristics	(n=155)		
	Men	Respondents (%) Women	Total
<b>Major occupation</b>			
Farmer-Agriculture and farming related	28 (18.1)	21 (13.5)	49 (31.6)
Labour	1 (0.6)	8 (5.2)	9 (5.8)
Business	4 (2.6)	8 (5.2)	12 (7.8)
Government .service	3 (1.9)	3 (1.9)	6 (3.8)
Rubber, oil palm and mixed fruits plantation	24 (15.5)	44 (28.4)	68 (43.9)
Others	2 (1.3)	9 (5.8)	11 (7.1)
<b>Minor occupation</b>			
None	4 (2.6)	11 (7.1)	15 (9.7)
Farmer-Agriculture and farming related	29 (18.7)	29 (18.7)	58 (37.4)
Labour	2 (1.3)	8 (5.2)	12 (6.5)
Business	10 (6.5)	21 (13.5)	31 (20.0)
Rubber, oil palm and mixed fruits plantation	11 (7.1)	17 (11.0)	28 (18.1)
Others	6 (3.9)	7 (4.5)	13 (8.3)

### 2.3 Monthly Income and Expenditure

32.3 % of respondents earned 7,501-12,500 Baths, 26.5% earned 2,500-7,500 Baths and 22.6% earned 12,501-20,500 Bath per month. 9.0% and 7.7% that is 16.7% earned 20,501-30,500 and above 30,500. Findings showed that their average income ranged from 2,500 Baths to 20, 500 Baths per month.

Out of hundred, 51.6% and 40% respondents spent 2,500-7,500 Baths and 7501-12500 Baths per month. Most of the respondent's expenditure range was 2,500-12,500 Baths.

Among the women respondents, 30.3% of women earned the highest income which was 2,500-7,500 Baths per month. Nowadays women participate in economic activity more than the past. Although the remarkable growth of the Thai economy during the past decade has provided women with increased income-earning opportunities, a high proportion of women in the workforce continue to be classified as unpaid family workers on farms or other family business enterprises. Average monthly income of household by source of income and sex of household head (1996), women was 7,561(NSO; Household Socio-Economic Survey, 1996). So, the income of Ban Thung Soong village women's was similar with the national average.

The national gross monthly household income was 12,185 Baths and expenses were 10,025 Baths (National Statistics Office, 2002) whereas 27.4% people's of Ban Thung Soong village income range was below 12,185 and 51.6 % people's expenses range was 10,025 Baths. So, this result indicated that minimum 28.4% and 51.6% people lived in below national average income and expenses. Respondent's monthly income and expenditure are described in Table 11.

Table 11 Monthly income and expenditure

Characteristics	Income (%)			Expenditure (%)		
	Men	Women	Total	Men	Women	Total
<2500	0	3 (1.9)	3 (1.9)	2 (1.3)	8 (5.2)	10 (6.5)
2500-7500	13 (8.4)	28 (18.1)	41 (26.5)	33 (21.3)	47 (30.3)	80 (51.6)
7,501-12,500	24 (15.5)	26 (16.8)	50 (32.3)	27 (17.4)	35 (22.6)	62 (40)
12,501-20,500	15 (9.7)	20 (12.9)	35 (22.6)	-	-	-
20,501-30,500	4 (2.6)	10 (6.5)	14 (9.0)	-	3 (1.93)	3 (1.93)
>30,501	6 (3.9)	6 (3.9)	12 (7.7)	-	-	-

## 2.4 Handling of Money in Family:

Normally in rural area men are money keeper or store keeper of financial resources. The highest group (40.64%) of respondents reported that their wives handling money in family. So the women of Ban Thung soong village also play a major role of household money management. The second group (37.41%) said both controls i.e. husband and wife jointly control their money, The third group (18.06) keeps their money by themselves and children are the lowest group who take care of money during their parents became old or physically unfit. The handling money of respondent's family is shown on Table 12.

Table 12 Handling money in family of respondents

(n=155)	
Characteristics	Number of respondents (%)
Husband	28 (18.06)
Wife	63 (40.64)
Both	58 (37.43)
Children	6 (3.87)
Total	155 (100)

## 3. Participation in Owned Land Activities

### 3.1 Land Holding Status:

All the respondents, men and women had owned land for farming and homestead. 16.1% of respondents had 1-5 Rai, Other respondents had 18.1 %,11.6%, 9.7%,12.9 %,5.8%, 8.4 %,5.8 %, 5.2 %,3.2% and 3.2% had 6-10 Rai,11-15 Rai,16-20 Rai, 21-25 Rai, 26-30 Rai 31-35 Rai,35-40 Rai, 41-50 Rai , 51-70 Rai and 71-99 Rai which are summarized in Table 13.They had used their land as rubber plantation, oil palm plantation, mixed fruit orchard, livestock and homestead.

**Table 13** Land holding status of respondents

Land holding (Rai)	Respondents (%)		
	Men	Women	Total
Own Land			
1-5	8 (5.2)	17 (11.0)	25 (16.1)
6-10	12 (7.7)	16 (10.3)	28 (18.1)
11-15	7 (4.5)	11 (7.1)	18 (11.6)
16-20	5 (3.2)	10 (6.5)	15 (9.7)
21-25	8 (5.2)	12 (7.7)	20 (12.9)
26-30	4 (2.6)	5 (3.2)	9 (5.8)
31-35	5 (3.2)	8 (5.2)	13 (8.4)
36-40	5 (3.2)	4 (2.6)	9 (5.8)
41-50	4 (2.6)	4 (2.6)	8 (5.2)
51-70	2 (1.3)	3 (1.9)	5 (3.2)
Above 71	2 (1.3)	3 (1.9)	5 (3.2)

Mean: 4.44

Standard deviation: 2.86

Note: 1 Rai=0.16 hectare

### 3.2 Legal Rights of Land:

Wife has legal rights of land more than husband. Wife holds 39.64% while husband holds 28.99%. However, both husband and wife hold 17.75% while children occupy only 8.28% which is summarized in Table 14. So it is the positive sign of women that they are getting opportunity to establish her in a family as well as in society.

**Table 14** Legal rights of land

Characteristics	(n=155)
	Number of respondents (%)
Husband	50(32.3)
Wife	67 (43.2)
Both	30 (19.4)
Children	8 (5.28)
Total	155 (100)

### 3.3 Utilization of Land

The Southern region is dominated by cash crop plantation principally rubber, oil palm, mixed fruit orchard and coconuts occupying almost 2 M ha, although rice and horticultural crops are also grown (Sophanodora, 1991).

Ban Thung Soong village is one of the village of Southern region. That's why the villagers of this village earned their livelihood from the rubber, oil palm plantation and in the mixed fruit plantation. Table 15 indicated that 59.17% and 62.13% people utilized their land as rubber plantation and oil palm plantation. 39.64% orchard, 84.02% small scale livestock and 88.16% used their land as homestead.

Table 15 Utilization of land

(n=155)	
Types of land use	Number of respondents (%)
Rubber plantation	100 (59.17)
Oil palm plantation	105 (62.13 )
Mixed fruit orchard	67 (39.64 )
Small scale live stocks	142 (84.02)
Homesteads	149 (88.16 )

### 3.4 Activities of Men and Women in their Land

Earlier, we found that major occupation of Ban Thung villagers are rubber and oil palm plantation. About 50% women and men were engaged in this occupation. Besides this, the people of this village were also engaged in their own land to plant rubber, oil palm, orchard, livestock and home gardening. Table 16 showed that the women and men were both working in their own land. In the case of rubber plantation individually women (24.85%) work hard more than men (4.73%). In my field study, I observed that they collected latex from rubber plantation at 3.00A.M. In oil palm plantation men (20.71%) work hard more than women (5.91%). Other activities like orchard, livestock and homestead women percentage respectively 11.24%, 32.54% and 34.31% were more than men percentage 5.91%, 10.05% and 24.85%. Jointly men and women were doing well in every activities. Plantation crops occupy about 11% of the total agricultural land in Thailand. The southern region has the highest proportion of land uses for rubber plantation. Rubber and oil palm are the most important plant for earning money that why Ban Thung Soong villagers are more interested to grow rubber and oil palm in their own farm land.

Table 16 Activities of men and women in their land

Characteristics	Number of respondents (%)		
	Men	Women	Both
Rubber plantation	8 (4.73)	42 (24.85)	49 (28.99)
Oil palm plantation	35 (20.71)	10 (5.91)	62 (36.68)
Mixed fruit orchard	10 (5.91)	19 (11.24)	38 (22.48)
Livestock	17 (10.05)	55 (32.54)	71 (42.01)
Homestead	42 (24.85)	58 (34.31)	83 (49.11)

### 3.5 Grow Tree in Household Area

87.57% of respondents planted tree in their household area. So the villagers of Ban Thung Soong village were very much eager to plant tree. 39.34% respondents had 20-50; trees in their house hold area. On the other hand, 25.80%, 13.54%, 6.45% respondents had 101-200, 201-400. Few percentage of respondents had 1000 and above 1000. In their household area they choose to plant multipurpose tree species. The most popular species were *Sandoricum koetjape*, *grandinosa*, *Citrus hystrix*, *Tamarindus indicus*, *Azadirachta excelsa* *Magnifera indica*, *Cocos mucifera*, *Parkia speciosa*, *P.sidium guajava*, *Sesbania*. These are summarized in Table 17.

Table 17 Grow tree and activities of respondents in household area

Characteristics	Number of respondents (%)
<b>Grow tree in house hold area</b>	148 (87.57)
<b>Number of tree</b>	
1-20	10(6.45)
21-50	61 (39.35)
51-100	40 (25.80)
101-200	21 (13.54)
201-400	10 (6.45)
401-700	5 (3.22)
701-1000	1 (0.64)
1001-1500	2 (1.29)
1501-2010	1 (0.64)

### 3.6 Decision Making about Household Area Plantation

For decision making in household area planting it was found that men (26.62%) was higher priority than women (18.34%) to use the land for planting. On the contrary, in selection of species and cutting and selling of tree women (26.62% and 21.89%) decision was higher priority than men (21.89% and 13.15%). But near about

50% respondents reported that they have taken joint decision to plant tree in their household area. This information are summarized in the Table18

**Table 18** Decision making about household area plantation

Characteristics	Number of respondents (%)		
	Men	Women	Both
Type of land use	45 (29.03)	31 (20.00)	75 (48.38)
Selection of species	37 (23.87)	45 (29.03)	68 (43.87)
Cutting and selling	22 (14.19)	26 (16.77)	71 (45.80)

#### **4. Participation in Community Forestry Program**

##### 4.1 Involvement in Community Forestry Program

All respondents has involved in community forestry program. Out of 155 respondents 97(62.6%) were involve while women 38.7% and men 23.9%. 32(20.6%) was more involve, where women and men percentage were similar i.e. 10.3% and 26(16.8%) was less involve. Women percentage also indicated that they have actively involved in community forestry program which are given in Table 19.

**Table 19** Involvement in community forestry program

Characteristics	Number of respondents (%)		
	Men	Women	Total
No involve	-	-	-
Less involve	9 (5.8)	17 (11.0)	26 (16.8)
Involve	37 (23.9)	60 (38.7)	97 (62.6)
More involve	16 (10.3)	16 (10.3)	32 (20.6)

##### 4.2 Period of Involvement in Community Forestry Program

87.1 % of respondents were involved in community forestry program since the establishment of community forestry. 4.5%, 3.2 % and 5.2 % of respondent involved this program respectively 3-4years, 2-3 years and 1-2 years. Findings are summarized in Table 20. This result revealed that most of the women involved in community forestry program from the beginning.

**Table 20** Period of involvement in community forest program

Characteristics	Number of respondents (%)		
	Men	Women	Total
1-2 year	4 (2.6)	4 (2.6)	8 (5.2)
2-3 year	2 (1.3)	3 (1.9)	5 (3.2)
3-4 year	4 (2.6)	3 (1.9)	7 (4.5)
Above 4 year	52 (33.5)	83 (53.5)	135 (87.1)

#### 4.3 Activities of Men and Women in Community Forest

Ban Thung Soong Community Forest is common properties belong to all villagers. They have protected and conserved forest resource and wildlife remaining in BTS community forest. Harvesting, cutting, selling of timber and hunting are completely prohibited. In community forest, the villagers were doing pre harvest activities like planting, maintaining and protecting. This result indicated that individually men participation in planting (8.87%) and protecting (45.56%) were higher than women (4.14%, 6.50%) participation. In the case of maintaining, women (33.72%) participation was higher than men (13.01%) participation. But joint participation was higher than individual participation. Activities of men and women in community forest program are summarized in Table 21.

**Table 21** Activities of men and women in community forest program

Activities	Number of respondents (%)		
	Men	Women	Both
Planting	15 (8.87)	7 (4.14)	133 (78.69)
Maintaining	22 (13.01)	57 (33.72)	74 (43.78)
Protecting	77 (45.56)	0	66 (39.05)

#### 4.4 Situation of Community Forest

All respondents agreed, that the forest was improved that the community forest was established. This result indicated that every person of Ban Thung Soong village is committed to protect and conserve their forest to create better environment for future generations. Findings are described in the following Table 22.

Table 22 Situation of community forest

(n=155)	
Characteristics	Number of respondents (%)
Yes	155 (100)
No	-
Total	155 (100)

#### 4.5 Women Opinion in Community Forest Program

97.4% respondents reported that community forest committee honours the women opinion about forestry related activities. During discussion period women participated and gave opinion. After discussion every body thinks that her opinion was good for forestry activities then committee includes her decision for future activities. Findings are summarized in the Table 23.

Table 23 Women opinion in community forest program

(n=155)	
Characteristics	Number of respondents
Yes	151 (97.4)
No	4 (2.6)
Total	155 (100)

#### 4.6 Participation in Community Forest Management Process

##### 4.6.1 Participation in decision making process

This is the most important process if the local people lacks an understanding of the problems and does not realize the importance of forest activities forestry extension will be useless, so they take decision how to make it useful .So it is necessary to stimulate the people and create awareness in the local resident.

##### 4.6.2 Participation in planning process

After collecting data on the problems and causes in local forest, then this data will be used in the planning operation. In this process people should share their idea with others in formulating objectives, project and activities.

##### 4.6.3 Participation in implementing process

The implementation process requires among many sectors. This way people will gain experiences working in groups.

#### 4.6.4 Participation in monitoring and evaluation Process

Following up and controlling should in each process in order to monitor the progress. This information will track any problems or obstacles at the operation such as expenses, time, manpower, responsibility. In this evaluation process, people will understand that their efforts are beneficial in evaluating activities that will enable them to reach their final goal.

Participation in different stages of community forest management at Ban Thung Soong village men and women participation are not different. Almost 98.06% respondents joined in decision making process while 94.19% joined in planning process. 99.35% and 97.41% respondents participated in implementing and monitoring and evaluation stage. Out of 40% and 60% average 39% men and 59% women have been participated in this program. Finding is summarized in the Table 24.

Table 24 Participation in community forest management process

Characteristics	Number of respondents (%)		
	Men	Women	Total
Decision making	60 (38.7)	92 (59.4)	152* (98.1)
Planning	58 (37.4)	88 (56.8)	146* (94.2)
Implementing	62 40.0	92 59.4	154* (99.4)
Monitoring and evaluation	61 (39.4)	90 (58.1)	151* (97.4)

Remark \* Some respondents did not response.

#### 4.7 Responsibility in Community Forest Management Process

The interpretation of the category of questions is based on the rating scale. Rating from 1 to 5 basis meaning on least, less, moderate, more and most respectively the interpretation is rated by the mean average. Table 25 compared the participation and responsibility level of forestry program between men and women through the following activities. There are three class intervals; low value is 1.00 to 2.33, medium 2.34 to 3.67 and high value 3.68 to 5.00.

**Table 25** Participation and responsibility in Community Forest Management Process at Ban Thung Soong village

(n=155)

Items	Estimated average participation and responsibility			
	Women	Level	Men	Level
1.1 Taking part in decision making process	3.59 ± 0.83	M	3.67 ± 0.90	H
1.2. Taking part in identification of problem	3.72 ± 0.81	H	3.88 ± 0.94	H
1.3. Taking part in solving problems	3.51 ± 0.77	M	3.46 ± 0.93	M
2.1. Taking part in constructing framework, rules and regulations of community forest management	2.92 ± 1.12	M	3.12 ± 1.19	M
2.2. Taking part in activities concerning community forest conservation.	3.77 ± 1.22	H	3.93 ± 1.34	H
3.1. Taking part in supporting financial or instrument for community forest conservation activities	3.26 ± 0.87	M	3.24 ± 0.82	M
3.2. Taking part in planting trees in community forestry	4.20 ± 0.84	H	4.14 ± 0.59	H
3.3. Taking part in garbage management in community forest area.	3.80 ± 0.64	H	3.82 ± 0.52	H
3.4. Taking initiative to control illegal tree cutting and wildlife hunting and poaching.	4.34 ± 0.84	H	4.59 ± 0.61	H
3.5. Taking part in group to persuade other people joining community forestry activities	4.01 ± 0.78	H	3.98 ± 0.66	H
4.1. Taking part in dissemination of information for the improvement of community forest	3.79 ± 0.93	H	3.74 ± 0.99	H
4.2 Taking part in monitoring determine the success and difficulties of community forest management	3.73 ± 1.02	H	3.96 ± 1.15	H
4.3. Sharing ideas to improve the solution	3.59 ± 0.94	M	3.77 ± 1.04	H

Note: H- high level of participation, M- medium level of participation, L- low level participation.

#### 4.7.1 Decision making process

a. Regarding the role of women and men in taking part in decision making process (mean average women: men-3.59: 3.67), it was found that women participation was medium and men participation was high.

b. The role of women and men taking part in identification of problem (mean average women: men-3.72: 3.88) it was indicated that both participation level was high but men was slightly more active than women.

c. Regarding the role of women and men in taking part in solving problem (mean average women: men-3.51:3.46), it was found that women and men participation were medium

#### 4.7.2 Planning process

a. Regarding taking part in constructing framework, rules and regulations of community forest management (mean average women: men-2.92: 3.12) it was found that men and women participation were medium.

b. Taking part in activities concerning community forest conservation (mean average women: men-3.77: 3.93) it was indicated that men and women participation were high but men participation was higher than women.

#### 4.7.3 Implementing process

a. Regarding taking part in supporting financial or instrument for community forest conservation activities (mean average women: men-3.26:3.24), it was found that women and men participation were medium.

b. Regarding the role of women and men in planting trees in community forest (mean average women: men-4.20: 4.14), it was found that women and men participation were high and women participation was higher than men.

c. The role of women and men in taking part in garbage management in community forest area (mean average women: men-3.80: 3.82). This result shown that men and women participation was high but men participation was higher than women.

d. Taking initiative to control illegal tree cutting and wildlife hunting and poaching (mean average women: men-4.34:4.59), it was found that men and men participation were high but men participation was higher than women

e. Regarding the taking part in group to persuade other people joining community forestry (mean average women: men-4.01:3.98), it was indicated that women and men participation were high but women participation was higher than men.

#### 4.7.4 Monitoring and evaluation process

a. The role of women and men in taking part in dissemination of information for the improvement of community forest (mean average women: men-3.79:3.74), it was found that women and men participation were high but women participation was higher than men.

b. Regarding taking part in monitoring determine the success and difficulties of community forest management (mean average women: men-3.73:3.96), it was indicated that men and women participation were high but men participation was higher than women..

c. Regarding sharing ideas to improve the solution (mean average women: men-3.59:3.77), it was indicated that women participation medium while men participation were high

Women make an important contribution to the traditional economy (minor forest products economy, communal and homestead lands). Their roles in all these different farming systems are well integrated. Women have to cope with the dual problem of a declining resource base and the power structures (gender relations) that prevent them from participating in any kind of decision-making at the community level. But the above results analyzing, it were indicated that the participation at different stages men and women are not different in Ban Thung Soong village. Out of thirteen activities, women participation level of eight activities was high and five activities were medium. On the other hand, men participation level of ten activities was high and three activities were medium. Among those activities, three activities namely taking part in planting trees in community forest, taking part in group to persuade other people joining community forestry and taking part in dissemination of information for the improvement of community forest, women participation was higher than men.

#### 4.8 Influencing Factor in Participating in Community Forest Management

Some factors like selection the village leader who has been very much eager to protect the community, families welfare improved after participating in community forestry program, being proud of community forestry history, families economic problem solving, concern about the need of resource and environment conservation, family awareness and creation of better environment for future generation, which are influenced factor for people to participate in community forest management. The interpretation of the category of questions is based on the rating scale, ranging from 1 to 5 basis meaning on no effect, less, fair, more and most respectively the interpretation is rated by the mean average using low value 1.00 to 2.50 and high value 2.51 to 5.00.

Regarding the scale five factors are high influenced and only two factors are low influenced for participation of men and women in community forest program which are described in Table 26.

Table 26 Influencing factors in participating community forestry program

Factors	(n=155)		
	Women Mean $\pm$ S.D	Men Mean $\pm$ S.D	Total Mean $\pm$ S.D
Selecting the village leader who is very much eager to protect the community	4.21 $\pm$ 0.62	4.24 $\pm$ 0.69	4.22 $\pm$ 0.65
Families welfare improved after participating in community forestry	2.50 $\pm$ 1.06	2.41 $\pm$ 0.98	2.48 $\pm$ 1.03
Being proud of community forestry history	4.33 $\pm$ 0.72	4.43 $\pm$ 0.71	4.37 $\pm$ 0.72
Families economic problem solving	2.39 $\pm$ 0.94	2.33 $\pm$ 1.00	2.37 $\pm$ 0.96
Concern about the need of resource and environment conservation	3.98 $\pm$ 0.69	4.08 $\pm$ 0.75	4.02 $\pm$ 0.72
Family awareness	3.83 $\pm$ 0.71	4.03 $\pm$ 0.78	3.91 $\pm$ 0.74
Creation of better environment for future generation	4.09 $\pm$ 0.59	4.30 $\pm$ 0.69	4.18 $\pm$ 0.63

After analyzing these results it was found that they are as proud of community forest history as mean average (4.37) was higher than other influence factors that are being proud of community forestry history the most effective factor to join the men and women in community forestry program. The mean average of women indicated that it is also the first priority of women. The community, however, is unique in the sense that it has strong social asset i.e. women and men proud about their community history.

Respondents agreed that strong village leader who has been very much eager to protect the community is a factor (mean average 4.22) that influenced the men and women for participation in community forestry activities. Community practices dependent on leadership. Excellent leadership will contribute to effective community work and to encourage people to join these difficult tasks. The village leader of Ban Thung Soong is very much devoted to protect their community forestry with the assistance of his village committee and villagers.

The need of resource and environment conservation and creation of better environment for future generation are also the most important factor to stimulate the women in participating in community forest activities. Findings indicated that total mean average 4.02 and 4.18 while the mean averages of women were 3.98 and 4.09. So it was also the more effective factor for women because women have an essential role to play in the development of sustainable and ecologically sound consumption and production patterns and approaches to natural resource management, as was recognized at the United Nations Conference on Environment and Development and the International Conference on Population and Development and reflected throughout Agenda 21.

Regarding family awareness influenced the respondents to join the community forest management program. Results shown that the total mean average for family's awareness were 3.91 while women mean average 3.83. So, family awareness also more influencing factor.

Findings indicated that families welfare improved after participating in community forestry program (total mean average 2.48 whereas women mean average 2.50 and families economic problem solving (total mean average 2.37 whereas women mean average 2.39) were less effective factors to join the community forestry program. Unlike other community forest, Ban Thung Soong community forest is fully conserved for better forest restoration. There is no direct economic value return from this forest at this moment. That's why economic related factors do not influence the women to join the community forestry activities.

### Third Part

#### 1. Problem of Women Participation in Forest Resources Management

Most of the South Asian countries women are facing many problems in participation of forestry activities. The problems or barriers are divided into two major groups including socio-cultural and religious and economical barriers. Socio cultural barriers are: less women mobility, women used as cultural symbol, conservativeness, male dominance, public work and public place for prohibited for women, lack of self confidence, reproductive work and unequal ownership of family resources. Economical barriers are distribution of income from forest products and right over income from forest products. Three indicators are used to estimate the problem of women in forest resources management and other communal works from this questionnaire. In socio cultural barriers the indicators are more, limited and less that is more means women face serious problem, limited means not serious but face some problems and less means no problem and economical barriers the indicators are equal, unequal and none that is same rights, not same rights and no rights. So, Women of Ban Thung Soong village are affected by these problem as shown in Tables 27 and 28.

Socio-cultural and religious barrier are those, which are influenced by the socio-cultural and religious norms, values, believes and practices.

##### 1.1 Women Mobility

Out of 155, 113(72.9%) respondents, men 50(32.3%) and women 63 (40.6%) answered that women didn't face any problem to free movement and joint forestry activities. Men 10(6.5%) and women 27 (17.4%) i.e. 37(23.9 %) mentioned that it did not faced serious problem but limited. However, men 1.3 %( 2) and women 1.9 %( 3) answered that women face serious problem in this point. So these results shown that still now some problem remain to free movement of women.

Women mobility means women can easily take part in any kind of activities. Some families or some societal people don't accept or take it easy because they depend on societal norms and values. Before two decades ago Thai women faced this problem. Till now the traditional stereotype of women staying in house is strong in some society or family also, although this remained changing slowly.

##### 1.2 Women is a Symbol of Culture

122 of respondent's i.e. 51 (32.9%) and 71(45.8%) seemed having less problem, among 29(18.7%), 8 men (5.2%) 21 and women (13.5%) said problem was limited and only men 3(1.9%) and women 1(1.1%) in total 4(2.6%) answered that it was the serious problem for women. So this result indicated that only 20% respondents seemed that it was problem but not serious barrier for women to join community forestry activities.

Till now, it (women is a symbol of culture) is considered and this is the measuring indicator of dignity of the home as well as family in some country. Due to this barrier women mobility is restricted of those countries.

### 1.3 Conservative Family/Conservative Women

In the case of conservative family and conservative women Out of 155, 116(74.8%) and 119(76.8 %) respondents i.e. men 48(31%), 49(31.6%) and women 68 (43.9%), 70(45.2%) answered that women didn't face any problem. On the other hand men 12(7.7%), 11(7.1%) and women 24(15.5%), 22(14.2%) i.e. 36(23.2%) and 33(21.3%) said not serious problem but limited and among 5(3.2%), men 1.3% (2) and women 1.9 % (3) answered that women face serious problem in this point. So this result showed that still now women face little bit problem for conservative family. Conservative family and conservative women don't accept women mobility.

### 1.4 Always Need Male Permission

In this case, 131(84.5%), 54 of men (34.8%) and 77of women (49.7%) seemed less problem. Among 21(13.54%), 6men (3.9%) and 15 women (9.7%) said limited and 3(1.93%) i.e. 2 men (1.3%) and 1(0.6%) answered more problem. This result revealed that women need sometimes male permission.

Most of the society in South Asian countries is male dominant society, so that male permission is always required to go any where. Some male are flexible about prior permission and some male are restricted about prior permission. Prior or later it does not required, even women can't go alone male accompany is required.

### 1.5 Women Can Easily Participate in Public Work

114 (73.5%) of respondents i.e. 48 of men (31%) and 66 of women (42.6) seemed that women can easily participate in public work. On the contrary, among 34 (21.9%) 11 men (7.1%) and 23 women (14.8 %) said limited and 7(4.5%) i.e. men 3(1.9%) and 4 women (2.6%) seemed more problem about women participation in public work. This result showed that about 75% women can easily participate in public work. So, it was not serious problem for the women of .Ban Thung Soong village.

Till now in some society of South Asian countries usually women can't participate easily in public work. In general women are not allowed for public work and place while it is allocated for men due to patriarchy. Due to this system, women of that society cannot attend public activities which held in public place.

### 1.6 Self Confidence of Women

About this problem, 39(25.2%) of men and 60(38.7%) of women i.e. 99(63.9 %) of respondents said less, among 53(34.2%), 21(13.5%) men and 32(20.6%) women said limited and only 3(1.93%) answered lack of self confidence of

women. This result showed that few women of Ban Thung Soong have some gap in self confidence.

Usually due to lack of self confidence women are not interested to participate in communal activities Education, training and awareness is needed to increase self confidence.

### 1.7 Male Sharing in Reproductive Activities

Among 90(58.1%) of respondents, 35(22.6%) men and 55(35.5%) said less, 58(37.4%) that is 24(15.5%) of men and 34(21.9%) of women answered limited and 7(4.5%) i.e.3 men (1.9%) and 4(2.6%) of women seemed more problems about male sharing in reproductive activities. This result showed that women felt some problem in that case.

Till now in some society male family member don't want to do the domestic work. If they do the domestic work then it is hampering their prestige. They are very much concern about their prestige due to the traditional cultural and social norms.

### 1.8 Equal Ownership in the Family

52.9 % (82) of respondents, men 30(19.4%) and women 52(33.5%) seemed that women didn't face any problem in equal ownership in family. On the other hand 70 (45.2%) of respondents i.e. 30 of men (19.4%) and 40 of women (24.8%) said not serious problem but limited problem have and only 1.93 % said that it was a serious problem. Near about 50% respondents revealed that women of Ban Thung Soong felt some problem in equal ownership in their family.

After getting birth start women inequality. Disparity between men and women is started from birth and ended it after the death. According to the Muslim law women are not equal share of their inheritance properties. The inherit one half of the share of male. Due to inequality, women can't do everything whatever she likes.

### 1.9 Economic Barrier

90(60.6%) of respondents i.e.36 (23.2%) of men and 58 (37.4%) of women said that women have equal rights over income which was earned from forest product. Among 58 (37.4%) of respondents, 24 of men (15.5 %) and 34 of women (21.9%) said unequal distribution of income and women hadn't equal right over the income. 1.93% seemed that women have no right. This result showed that 40 % women haven't any power overall income. In this case women fully depended on her husband's income. Women's subordinate position is created and recreated due to unequal relationship.

**Table 27** Socio-cultural and religious barriers of women in forest resources management

(n=155)

Characteristics	Socio-cultural and religious barriers (%)								
	M	Less W	Total	M	Limited W	Total	M	More W	Total
Women mobility	50 (32.3)	63 (40.6)	113 (72.9)	10 (6.5)	27 (17.4)	37 (23.9)	2 (1.3)	3 (1.9)	5 (3.2)
Symbol of culture	51 (32.9)	71 (45.8)	122 (78.7)	8 (5.2)	21 (13.5)	29 (18.7)	3 (1.9)	1 (0.6)	4 (2.6)
Conservative family	48 (31.0)	68 (43.9)	116 (74.8)	12 (7.7)	24 (15.5)	36 (23.2)	2 (1.3)	1 (0.6)	3 (1.9)
Conservative of women	49 (31.6)	70 (45.2)	119 (76.8)	11 (7.1)	22 (14.2)	33 (21.3)	2 (1.3)	1 (0.6)	3 (1.9)
Always need male Permission	54 (34.8)	77 (49.7)	131 (84.5)	6 (3.9)	15 (9.7)	21 (13.5)	2 (1.3)	1 (0.6)	3 (1.9)
Women can participate easily public and social work	48 (31.0)	66 (42.6)	114 (73.5)	11 (7.1)	23 (14.8)	34 (21.9)	3 (1.9)	4 (2.6)	7 (4.5)
Self confidence	39 (25.2)	60 (38.7)	99 (63.9)	21 (13.5)	32 (20.6)	53 (34.2)	2 (1.3)	1 (0.6)	3 (1.9)
Male sharing in reproductive activities	35 (22.6)	55 (35.5)	90 (58.1)	24 (15.5)	34 (21.9)	58 (37.4)	3 (1.9)	4 (2.6)	7 (4.5)
Equal ownership in family	30 (19.4)	52 (33.5)	82 (52.9)	30 (19.4)	40 (25.8)	70 (45.2)	2 (1.3)	1 (0.6)	3 (1.9)

Note: M = Men; W = Women

**Table 28** Economical barrier of women in forest resources management

(n=155)

Characteristics	Economical barrier (%)								
	Equal			Unequal			None		
	M	W	Total	M	W	Total	M	W	Total
Distribution of income from forest products	36 (23.2)	58 (37.4)	94 (60.6)	24 (15.5)	34 (21.9)	58 (37.4)	2 (1.3)	1 (0.6)	3 (1.9)
Rights over income from forest product	36 (23.2)	58 (37.4)	94 (60.6)	24 (15.5)	34 (21.9)	58 (37.4)	2 (1.3)	1 (0.6)	3 (1.9)

Note: M = Men; W = Women

## Fourth Part

### 1. Gender division and labour

According to the Moser (1990) there are three types of roles which are performed by men and women. These roles are productive, household activities and community managing. She also stated that in most low income Third world household women have triple role. She has defined triple role are as follows:

#### 1.1 Productive Role or Activities

The productive role comprises work done by women and men for payment in cash or kind. It includes both market production with an exchange value, and subsistence/ home production with an actual use value but also potential exchange value. For women in agriculture production this includes work as independent farmers, peasant's wives and wage workers.

Felling slashing, burning, species selection, planting, weeding, thinning, and harvesting, post harvesting and marketing were the considered as productive activities. Findings indicated that felling, slashing and burning, men activities were 38.06%, 27.09%, 18.06% whereas women participation only slashing and burning i.e. 18.06% and 7.09%. In this case men were done more activities than women. Jointly their activities were 24.51%, 37.41% & 25.16%, On the contrary, their children were done little beat work with them like boy (2.58%) in felling, 3.87% and 5.80% girl in slashing and burning. Men activities in species selection, planting, weeding, thinning, and harvesting, post harvesting and marketing were respectively 29.67 %, 14.19 %, 5.80%, 44.51%, 17.41%. 6.45% & 18.70% while women were 18.70%, 9.67%, 34.19%, 4.51%, 9.67%. 16.77% and 41.93% i.e. women were more active in weeding and marketing than men This result showed that women also play a major role in productive activities. 47.74%, 72.25%, 60%, 50.96%, 72.90%, 76.77 % and 39.35% respondents were jointly done the respective works. On the other hand boy (5.16%) was engaged only harvesting but girl were participating in every step of plantation work. Productive activities of men and women are summarized in Table 29.

#### 1.2 Household Activities

The Household activities comprises the child bearing/ rearing responsibilities and domestic task undertaken by women, required to guarantee maintenance and reproduction of labour force.

Naturally women were responsible for house hold activities like washing & cleaning, cooking, taking care of child and family members. Findings indicated that 100% women and 43.87% and 80% girl were engaged in washing & cleaning, and cooking. Men didn't share in this work. Regarding feeding family and taking care of child individually only women 11.61%, 17.41% did the work but jointly 88.38% & 82.58% men and women were participate in this work. In water and fodder collection respectively 5.16%, 32.90% men, 43.22%, 28.38% women, 25.80%,

30.96% both and 51.61%, 33.54% girl and boy 2.58% engaged in this work. Only 5.16% women involved in fuel wood collection because they used gas or electricity as fuel for cooking purpose. Individually women (6.12%) and girl (7.74%) was main collector of NTFPs but jointly (83.87%) men helped women to collect NTFPs. The house hold activities of men and women are focused on Table 30.

### 1.3 Community Work

The community managing role comprises activities undertaken primarily by the women at community level, as an extension of their reproductive role. It is voluntary unpaid work, undertaken free time.

Finding indicated that community management work was performed by men and women. Individually women (30.96%, 23.87%, 15.48%), and girl (7.74%, 21.29%, 11.61%) attendance were higher than men (17.41%, 3.87%, 1.93%) and boy (1.93%, 1.93%, 5.80%) in meeting, religious function and regular gathering. In the case of cooking of marriage ceremony individually men's performance was 49.67% i.e. higher than women's (41.93%) performance. On the other hand, only girls (27.74%) were participating in this work. The results are summarized in Table 31.

At present the division of labour in the household has changed. After analyzing the above result it was found that women are actively involved in productive and community activities along with household activities. So, their workload is increasing and sometimes they work more than men. Even though, in future generation it was found that girl are more active in productive, house hold and community works whereas boy's participation is less with this respective works.

Table 29 Productive activities of gender

Characteristics	(n=155)				
	Reproductive activities (%)				
	Men	Women	Both	Boy	Girl
Felling	59 (38.06)	0	38 (24.51)	4 (2.58)	0
Slashing	42 (27.09)	28 (18.06)	58 (37.41)	0	6 (3.87)
Burning	28 (18.06)	11 (7.09)	39 (25.16)	0	9 (5.80)
Species selection	46 (29.67)	29 (18.70)	74 (47.74)	0	3 (1.93)
Planting	22 (14.19)	15 (9.67)	112 (72.25)	0	20 (12.90)
Weeding	9 (5.80)	53 (34.19)	93 (60)	0	9 (5.80)
Thinning	69 (44.51)	7 (4.51)	79 (50.96)	0	3 (1.93)
Harvesting	27 (17.41)	15 (9.67)	113 (72.90)	8 (5.16)	3 (1.93)
Post harvesting	10 (6.45)	26 (16.77)	119 (76.77)	0	3 (1.93)
Marketing	29 (18.70)	65 (41.93)	61 (39.35)	0	3 (22.58)

Table 30 Household activities of gender

Characteristics	(n=155)				
	Men	Women	Both	Boy	Girl
Washing and Cleaning	0	155 (100)	0	0	68 (43.87)
Cooking	0	155 (100)	0	0	124 (80)
Feeding family	0	18 (11.61)	137 (88.38)	0	14 (9.03)
Taking care child	0	27 (17.41)	128 82.58	0	27 (17.410)
Water collection	8 (5.16)	67 (43.22)	40 (25.80)	0	80 (51.61)
Fuel collection	0	0	8 (5.16)	0	0
Fodder collection	51 (32.90)	44 (28.38)	48 (30.96)	4 (2.58)	52 (33.54)
Collecting NTFPs for consumption	0	25 (16.12)	130 (83.87)	0	12 (7.74)

Table 31 Community work of gender

Characteristics	(n=155)				
	Men	Women	Both	Boy	Girl
Meeting	27 17.41	48 30.96	86 55.48	3 1.93	12 7.74
Religious function	6 3.87	37 23.87	112 72.25	3 1.93	33 21.29
Regular gathering	3 1.93	24 15.48	122 78.70	9 5.80	18 11.61
Cooking of marriage ceremony	77 49.67	65 41.93	0	0	43 27.74

Table 32 Daily activity clock: men, women and children at Ban Thung Soong village

Time	Daily calendar activity at Ban Thung Soon families		
	Women	Men	Children
01.00	Sleeping, Latex tapping	Sleeping, Latex tapping	Sleeping
02.00	Sleeping, Latex tapping	Sleeping, Latex tapping	Sleeping
03.00	Sleeping, Latex tapping	Sleeping, Latex tapping	Sleeping
04.00	Sleeping, Resting	Sleeping, Resting	Sleeping
05.00	Wake up, Resting	Wake up, Resting	Wake up, clean up
6.00	Cooking	Resting	Taking a bath, dressing up
7.00	Breakfast, latex collection, ready for work	Breakfast, latex collection, ready for work	Breakfast & wash the dishes
8.00	Working in private sector, Working in government sector	Working in private sector, Working in government sector	Go to other schools Attend class (On the weekend, wake up, breakfast and watch TV)
9.00	Working on own business palm fruit orchard, massage, selling vegetables (cucumber,	Working on own business palm fruit orchard,	Attend class (On the weekend, wake up, breakfast and watch TV)
10.00	Working on own business	Working on own business	Attend class (Weekend, touring Village with friends)
11.00	Working on own business	Working on own business	Attend class (Weekend, touring Village with friends)
12.00	Lunch outside	Lunch outside	Lunch in school

Table 32 (Continue)

Time	Daily calendar activity at Ban Thung Soon families		
	Women	Men	Children
13.00	Working on own business	Working on own business	Attend class(Weekend, helping family works)
14.00	Working on own business	Working on own business	Attend class (Weekend, helping family works
15.00	Working on own business	Working on own business	Attend class (Weekend, helping family works
16.00	Working on own business	Working on own business	Go back home
17.00	Returning back home Cooking, exercise, Teaching children.	Returning back home And take rest	Help cooking, Having dinner, Do homework.
18.00	Dinner, TV news, game show	Dinner, TV news, game show	Having dinner Watching drama or CVD
19.00	Dinner, TV news.	Dinner, TV news.	Having dinner Watching drama or CVD
20.00	Dinner	Dinner , gatherings	Watching drama or CVD
21.00	Washing and ironing the clothes	Watch TV drama	Sleeping
22.00	TV drama and ironing the clothes	Watch TV drama	Sleeping
23.00	Sleeping	Sleeping	Sleeping
24.00	Sleeping	Sleeping	Sleeping

The above table based on the concept of a gender-based division of labour amongst men, women and children. This highlighted the productive and household activities of the people at Ban Thung Soong area. To this end three parameters were used, i.e. gender-based division of labour, time allocation and location.

## **2. Women Resolution**

Ban Thung Soong women resolution (Appendix-2) was drafted by Dr. Suree Bhumibhamon and researcher with the help of women committee. After drafting it was present, corrected and approved by Village Meeting on 1 October, 2004. Every agenda under women resolution focused on overall activities and responsibilities of women of this village. This result indicated that women of Ban Thung Soong village were very much aware about the youth group, the aging group, public health, education, community forest and wildlife, environment and Andaman cultures.

## **3. Women Workshop**

A women workshop on “The Role of Women Leaders (including Ban Thung Soong village) of Khao Yai Subdistrict in Krabi on Rural Development, Natural Resource Conservation and Environment Protection” was held on 13 May, 2005 at Village Information Center of Ban Thung Soong village. The researcher presented a paper on “The Role of Women in Forest Resources Management in this workshop. Group discussion were made on Role of Women on Rural Development, Role of Women on Conservation and Forest management, Role of Women on Family Life and Role of Women on Women Empowerment among four women groups. After discussion, it was found that women was playing active role for their community development, but still now, they face lot of problems in their family to participate in community forest management and also other community work. The opinion of women groups about those issues were enclosed in Appendix-3.

After analyzing the result and discussion it was found that the following steps should be consider for active and sustainable participation of women in forest resources management.

1. Still now, some constraints remain in some families. To remove these constraints, Royal Forest Department should be taken initiative to create awareness of those families about gender equity and empowerment

2. Women need proper training on forest management because they have traditional role of managing environment and forest. To improve knowledge, training is necessary for women. They should be involved in training to ensure women’s effective participation in sustainable forest management and protection.

#### **4. Relationship between Independent Variables and Dependent Variables (Testing Research Hypothesis)**

Relationship between independent variables, i.e. status in household, gender, age, origin, religions, marital status, household members, relationship with family members, level of education, major and minor occupations, land holding status, legal rights of land, forest resources utilization, involvement in community forestry program, period of involvement in community forestry program, responsibility in community forestry management process and influencing factors to participate in community forestry program and dependent variable i.e. participation in community forest management process were analyzed using by Spearman Rank Correlation Analysis. The result of this analysis is shown in Table 32.

**Table 33** Correlation coefficient between independent variables and dependent variable using Spearman rank correlation analysis

Independent variables	Dependent variable Participation in community forest management process	
	Spearman's Correlation Coefficient	Significant
Status in household	.041	.616
Gender	.050	.533
Age	.182*	.024
Origin	.164*	.041
Religions	-.021	.794
Marital status,	.025	.754
Household members	-.111	.171
Relationship with family members,	.199*	.013
Level of education	-.132	.102
Major occupation	-.093	.252
Minor occupation	-.015	.854
Monthly income	-.089	.269
Monthly expenditure,	-.061	.448
Forest resources utilization	.036	.652
Involvement in community forestry program	.064	.431
Period of involvement in community forestry program	-.026	.753
Responsibility in community forestry management process	.366**	.000
Influencing factors to participate in community forestry programme	.154	.056

\* Correlation is significant at the 0.05 level (2-tailed)

\*\* Correlation is significant at the 0.01 level (2-tailed)

Based on the result of correlation test between independent variables and dependent variable it was found that age, origin, relationship with family members and responsibility in community forestry management process have correlation with participation in community forest management process at 0.05 significant level. For other variables there is no correlation with dependent variable. It means that age, origin, relationship with family members and responsibility in community forestry management process that significantly influenced women and men to participate in community forestry program.

If we consider the relation between age and participation in community forest management process, we found that the women and men who are aged people; they have more tendency to join the community forestry program because they know sufficient forest coverage is needed to protect environment and to protect forest people participation is essential.

Origin is another variable is also significant factor that in the case of Ban Thung village, 75% of people's origin in this village. This results in a strong connection between men and women and their geographical location. So their attitude, behavior, belief, cultural and environmental thinking was more or less similar to each other. They are very much committed to protect their own forest and that's why their participation is more in community forestry program.

Relationship with family members is another significant variable. In Ban Thung Soong village, most of the family relationship is friendly, that why women can easily participate in community forestry program.

Responsibility in community forest management process is another significant variable which more influenced women to join this program.

## CONCLUSION

The study has described the past and present situation, management pattern and uses of Ban Thung Soong community forest. The study has also analyzed the role of women in community forest resources management and identified the problems of women participation in community forestry program.

The first part of the study revealed that Ban Thung soong village was covered by dense forest before 1962. In October, 1962 this forest has damaged by a cyclone. Due to damage and illegal logging operation, the forest of Ban Thung Soong village gradually converted into degraded land since this period. The villagers were given emphasis on protecting their forest and established Community Forest in 1998. Ban Thung Soong Community Forest is common properties belong to all villagers. They have protected and conserved forest resources and wildlife remaining in Ban Thung Soong Community Forest. These forest areas were dominated by *Dipterocarp* sp., *Hopea* sp., *Alstonia* sp., *Memecyclon* sp., *Eugenia* sp., *Ficus* sp., Bamoo, Rattan etc. Presently comparison the plant diversity of Ban Thung Soong Community Forest to the other natural tropical rain forests it seemed that plant diversity in secondary managed and utilized by community was similar to undisturbed forest in national park and protected areas. However there was still plenty of small-sized trees and dominated by secondary species as *Schima wallichii*, *Crypteronia paniculata* and *pinnata*. There was high diversity of useful plants in this community forest. Ban Thung Soong Community Forest was also rich of wildlife. There were 24 species of amphibians, 14 species of reptiles, 79 species of birds and 23 species of mammals. About 90 species of medicinal plants were found in Ban Thung Community Forest

32.9% respondents depended on community forest for collection of forest products like medicinal plants, insects, bamboos, mushrooms, rattans and vegetables. Mainly forest products used for home consumption and women were active collector of forest products.

For proper management of forest resources of Ban Thung Soong Community Forest, a community forest committee has been appointed. The committee consists of 15 members. 4 women member have been appointed in this committee. The members are elected by the villagers. In the initial phase all hunting and logging were banned. The villagers joined in forest rehabilitation activities including planting and maintaining in degraded areas of community forest.

The second part of the study showed the socio-demographic characteristics economic characteristics, participation in own land and participation in community forestry programme.

Social and demographic: The respondents were more women than men. 3.2% head of household were women. The majority (34.89%) age range were 31-40 years old. 76% respondent's origins in Ban Thung Soong village and except two families, all inhabitants of Ban Thung Soong village were Buddhist. Most of the respondents (92.2%) were married, 77.5%.family were consists of 3-5 members and their

relationship with family members were friendly and good. Two-third of the respondent's (73.5%) has primary education and 1.3 % was illiterate where women percentage was zero.

Economic: Rubber and oil palm plantation are the main income sources of Ban Thung Soong villagers. 43.9% villagers engaged in this occupation. According to the women percentage 28.4% women were related in this job. 31.6 % were farmer-agriculture and farming related and 7.8% was business. 5.8% was labour where women percentage 5.2%. In this case Government service, percentage was 3.8%.and men and women ratio were (3:3). 7.1 % was others, mostly housewife unpaid labour and some technician were included.

37.4% men (18.7%) and women (18.7%) depend on agriculture related farming activities. Because they had own farmland, so most of the men and women gave emphasize on agricultural farming as a minor occupation.

32.3 % of respondents earned 7,501-12,500 Baths, 26.5% earned 2,500-7,500 Baths and 22.6% earned 12,501-20,500 Baths per month, so their average income from 2,500 Baths to 20, 500 Baths per month. 91.6 % respondents spent 2,500-7,500 Baths and 7501-12500 Baths per month. Most of the respondent's expenditure range was 2,500-12,500 Baths. Among the women respondents 30.3% of women earned 2,500-7,500 Baths per month which was similar with the national average income of women.

Participation in own land: All the respondents, men and women had owned land for farming and homestead. Their average land was 1 to 99 Rai. Legal rights of land had wife more than husband. Wife holds 39.64% there husband holds 28.99%. Both that is husband and wife holds 17.75% and children occupy only 8.28%.

The villagers of this village earned their livelihood from the rubber, oil palm plantation and in the mixed fruit plantation. Except oil palm, rubber plantation, mixed fruit orchard, livestock and homestead women individually work hard more than men.

87.57% of respondents plant tree in their household area. Taking decision to use the land for planting men was higher priority than women. On the contrary, in selection of species and cutting and selling of tree women decision was higher priority than men.

Participation in community forestry program: Out of 100% respondents 62.6% involve and 20.6% more involve with community forestry program since the establishment of community forestry. Most of the respondents reported that forest was improved after introducing community forestry program. 97.4% respondents reported that community forest committee honours the women opinion about forestry related activities.

Harvesting, cutting, selling of timber and hunting are completely prohibited. In community forest, the villagers (men and women) were doing pre harvest activities like planting, maintaining and protecting. Individually men's participation was higher in protecting whereas women's participation was higher in maintaining.

Participation in different stages of community forest management at Ban Thung Soong village men and women participation are not different. There were 98.1% respondents joined in decision making process while 59.4% women and 38.7% were men. Regarding the planning process the result showed 94.2% respondents who were actively participated of which women was accounted for 56.8% and men 37.4%. Almost all respondents i.e. 99.4% and 97.4% were participating in implementing, monitoring and evaluation stages. Whereas women and men percentage respectively 59.4%, 58.1% and 40%, 39.4%. In management process, the level of women participation was high and medium. In the high level, women participation was higher than men in three participatory activities namely taking part in planting trees in community forestry, to persuade other people joining community forestry and dissemination of information for the improvement of community forestry.

The study indicated that some influencing factors namely being proud of community forestry history, selection the village leader who is very much eager to protect the community, concerns about the need of resource and environment conservation, creation of better environment for future generation and family awareness, the mean average of women were 4.33, 4.21, 4.09, 3.98, 3.83. So, these factors were stimulated women to join the community forestry program.

This study showed that socio-cultural, religious and economical barrier were not serious problem to participate women in community forestry program but some constraints like self confidence, male sharing activities, equal ownership in the family and overall economical rights were remain in some family at Ban Thung Soong village.

The study also indicated that women were actively involved in productive and community activities along with house hold activities. So, their workload was increasing and sometimes they worked more than men. Even though, in future generation it was found that girl were more active in productive, house hold and community works whereas boy's participation was less with this respective works.

Every agenda under women resolution indicated that women of Ban Thung Soong village were very much aware about the youth group, the aging group, public health, education, community forest and wildlife, environment and Andaman cultures

Results of the hypothesis testing revealed that age (Sig = 0.024), origin (Sig = 0.041), relationship with family members (Sig = 0.013) and responsibility in community forestry management process (Sig = 0.000) were significantly influenced women and men to participate in community forestry program.

## **RECOMMENDATIONS.**

### **1. On the Capacity Building**

Presently Ban Thung Soong Community Forest declared as appropriate site of community based ecotourism. To prepare constructing frame work, rules and regulations for proper management of community based ecotourism the women must learn how to work in community based ecotourism management. So, Royal Forest Department should be taken program for capacity building of women about ecotourism activities.

### **2. On the Cultural Heritage**

To communicate and entertainment with foreign visitors women need familiar with different local cultures. So different types of cultural information, video show and English language should be incooperate in women training packages.

### **3. Further Research**

For comparing the women role in community forestry resources management, similar study should be conducted between this village and other village where women are fully dependent on community forestry. Further study should be carried out the potential role of women on community based ecotourism activities.

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**APPENDICES**

## **Appendix A**

The Regulation of Resources Utilization in Ban Thung Soong  
Community Forestry Forest for Ecotourism

## **The Regulation of Resources Utilization in Ban Thung Soong Community Forestry Forest for Ecotourism**

BTS Community Forestry for Ecotourism is a community forest that BTS villagers have protected, conserved and rehabilitated for BTS peoples directly and indirectly. The villagers developed the regulation concerning BTS Community Forest for Ecotourism.

### **Declaration**

BTS Community Forest is a common property and shall belong to all BTS villagers. They have protected and conserved forest resources and wildlife remaining in BTS Community Forest.

1. BTS villagers have set up BTS Community Forest Committee to manage the forest. They will make use of community forest to manage the forest. They will make use of community forest to cope well with the community needs. They will protect the forest from all illegal practices both from outside the villager as well as inside the village. They also help in rehabilitating the forest.

2. Logging is not allowed in the community forest except for the communal activities. In that case, it must be agreed upon with BTS Community Forest Committee.

3. BTS villagers can gather minor forest products for their own uses and for the communal activities through sustainable management practices.

4. BTS villagers will help in transfer and exchange knowledge about forest resources conservation.

5. BTS villagers will cooperate with the authorities in forests and wildlife conservation for ecotourism.

6. BTS villagers will not set fire in the community forest and nearby area so as to prevent fire spreading into the forest.

7. Domestic animals are not allowed to feed in the BTS Community Forest.

8. People from outside can enjoy the BTS Community Forest only for ecotourism and recreation. They have to follow the regulations of BTS Community Forest.

9. BTS Community Forest should be developed bay based on the Master Plan. The establishment of trails and pavilion in BTS Community Forest should be simple and harmonize with the surrounding nature.

10. BTS villagers should cooperate with research agencies and education institutes so that the applications will be benefits for the society.

11. BTS villagers should cooperate with school in transferring the ecological knowledge of BTS Community Forest to the youth. This will help in giving information to the new generation.

12. Establishment of foundation to conserve BTS Community Forest to sustainable benefits for forest management and BTS villagers.

13. BTS villagers are all involved in forest and wildlife conservation, particularly on the exploration, surveying and controlling.

#### Penalty Charges:

1. A person who cut the trees in community forest illegally must be fined at least 1000 bath. The fall trees should be used for community activities.

2. A collecting of Minor Forest Products in BTS Community Forest for sell must be fined two times the market price of each item.

3. Any person who collects the medicinal plants from BTS Community Forest for sell must be fined 500 Baht per species.

4. Any person who hunts wild animals must be fined. Weapons will be disposed and case will be taken legal action.

Declared by BTS villagers meeting (January, 1999)

According to the regulations people are not allowed to burn material, introduce domestic animals, hunt wildlife, cut trees, pick minor forest products or use medicinal plants to sell in the community forest. All most all the responsibilities for protection and conservation and management like decision making, planning, implementing and monitoring and evaluation of Ban Thung Soong Community forest are carried out by Ban Thung Soong Community forest Committee, On the other hand RFD gives advice, input supply and provides volunteers training for forest protection.

## **Appendix B**

Women Resolution at Ban Thung Soong village

## **Women committee**

**Ban Thung Soong Women Committee has jointly agreed to draft Ban Thung Soong Women Resolution at the People Center on 1<sup>st</sup> October 2004 and has approved by Ban Thung Soong people in the Village Meeting on 10<sup>th</sup> October 2004.**

### **Ban Thung Soong Women Resolution**

#### **Being the Thai and the Honest Way of Earning**

All Ban Thung Soong women are proud to be the Thai citizen. We love our free life style in this little village of Thailand. All women are pleased and have great respect to His Majesty King Bhumibhol who kindly gave us 100,000 for initiating the rice fund as well as to Her Majesty Queen Sirikit for another 100,000 bath for the Forest Conservation Fund. With their kind ruling the country, all women in Ban Thung Soong village have dedicated their lives to earn their livings with great effort and honest. We will act like the good Thai citizen; we love our neighbor and our life. We have banned narcotics and avoiding to create any problems to Thai society. We will build up Ban Thung Soong village to be a lovely one.

#### **On the life and Appropriate Role of Women**

All lives are important in the Society, both men and women alike. Each Ban Thung Soong women is proud to be borne as women. We all have worked hard side by side with men. We have equal right in democracy and have full responsibilities in establishing and developing our permanent village.

#### **About the Youth Group**

We, all Ban Thung Soong women love our children. We have raised them to be good youth with good health. Children have good education and we have taken good care of them and enable to the perfect them. They have no wrong doing in sex appeal. We will not left behind but to give full love and kind to them. We will give them the life contribution for the continuous development and be able to pursue their responsibility like their own ancestor who established the village.

#### **About the Aging Group**

The aging group gave us lives and being kind to us. They trained us to be good citizen of the society. They have encouraged us to perform our tasks diligently. They have informed us to save some money for our future. All Ban Thung Soong women have paid their willingness to take good care of the aging group. We have respected them all as our parent.

**About the Public Health**

All Ban Thung women good health through their regular physical exercises and consuming the healthy foods. All Ban Thung Soong women have worked hard in rubber plantation, oil palm plantation and mixed fruit orchard. We have fully performed the difficult life and heavy tasks. Health care center has provided basic treatment to us all when we were sick. We have Parataxonomist to take good care of us if the need arised

**About Education**

All Ban Thung Soong women are eager to learn. They have considered that education is important to their lives. Learning has given them more clever and enabling to adapt well under changeable environment. Learning gave better chance in performing our jobs. We can take better care to ours children. We all love our Ban Thung Soong school and have supported school activities to be center of learning in the village. The people center should collect books and VCD for women uses, particularly on good case studies in other communities, tourism, health foods, arts works etc.

**About Community Forest and Wildlife**

We are proud about Ban Thung Soong Community Forest which we have struggled for our children forest. Past historical records have given us valuable lessons. We stopped shifting cultivation, illegal cutting, forest fires and illegal hunting. Under the forest protection flag given by Her Majesty, all Ban Thung Soong people will devoted their lives in protecting their forests.

**About Environment**

Human is a part of the environmental system. All Ban Thung Soong women have the potential role in good environment. We have developed our environment concerned village. Environmental friendly farming practices have been performed with the appropriate ways in using chemicals. We managed the garbage. We have clean water for consumption in all houses. All Ban Thung Soong women have cleaned their houses and village so as to be the good patterns for our children.

**About Andaman Cultures**

All Ban Thung Soong people have been living together with love and mutual cooperation. Our ancestor have built up our local culture for long, We, all Ban Thung Soong women will preserve our cultural heritages. We will build our Cultural Museum to preserve our traditional performances and our traditional artworks. We are Andaman people and we will preserve our cultures forever.

Proclaimed at the People Center  
Ban Thung Soong Women Group  
1 October, 2004.

## **Appendix C**

The opinion on Role of Women on Rural Development, Role of Women on Conservation and Forest Rehabilitation, Role of Women on Family Life and Role of Women on Women Empowerment

## **GROUP 1**

### **The Role of Women in Community Development**

#### **Community in the Women Eyes**

1. Want everybody in the village to participate in the village activities
2. The village should be freed from narcotics
3. Need Community Health Park in the village
4. Need drinkable tap water
5. Want to see strong villagers for self reliant development
6. Village is free from thieves and illegal practices
7. Need community sanitary system
8. Need better price of cash crops like rubber and oil palm
9. Free from corruption
10. Get rid of gambling in the community

#### **Community Leaders that Women Preferred**

##### **Good Vision**

1. Good vision
2. Give correct and clear information to villagers
3. Not rely too much on the closest group
4. Honest
5. Good family
6. Need more leadership role to women
7. Avoid the poor practices to deduct the fiscal budget for other purpose.

#### **Basic Needed of Community**

1. Increase the area for public water distribution
2. Improve the road condition

#### **Community and Education**

1. Support more training to all , particularly English
2. Need Child Care Center in the village in order to prepare for better future
3. Lack of skilled person to give training in various aspects
4. Need training for the youth during the vacation

#### **Rural Poverty and Community**

1. Earn more, spend less
2. Promote additional earning like Batik
3. Develop the village for community based tourism

4. Support equipments
5. Promote marketing of value added products

### **Role of Women in the Community**

1. Problem identification
2. Present the problems in the public
3. Solving problems
4. Integrated cooperation

## **Group 2**

### **The Role of Women in Conservation and Restoration of Forest Resources**

#### **1. The need to conserve and restore the natural resources by**

- 1.1 Tree planting in the degraded land or slash and burned area,
- 1.2 Plant more tree in the special days like National Arbor Day, Father Day, Mother Day, etc.
- 1.3 Take good care and manage the planted trees for better growth development and more scenic value
- 1.4 Help in releasing wild animals back to nature.
- 1.5 Develop the water reservoir for wild animals

#### **2. Who are tree planters?**

- 2.1 All people in the community share hands together
- 2.2 Government agencies, such as
  - 2.2.1 RFD, raised seedlings for distribution and training
  - 2.2.2 District agricultural officer and Agricultural Technology Transfer Center help in providing information related to fertilization application.
  - 2.2.3 Other agencies like Ministry of Public Health gave training on medicinal plants, Tourist Authority of Thailand provide budget for nature trails, Sub-district Committee provided the financial support for construction the Queen Pavilion
- 2.3 Impacts of forest destruction as viewed by the Women Committee and their performance on the restoration activities
  - 2.3.1 Women help in restoration works
  - 2.3.2 Prevent illegal minor forest products gathering and illegal cutting
  - 2.3.3 Help in cleaning the community forest in special occasion.
  - 2.3.4 Prevent illegal hunting
  - 2.3.5 Control the forest fire

- 2.4 The need to give education to the youth
  - 2.4.1 Arrange the training course and the study tour for the youth and pupils to the natural forest.
  - 2.4.2 Encouraging more study in school about the forest, at least teacher should bring them to the forest area once a week.
  - 2.4.3 Invite speaker to talk about the importance of community forest
  - 2.4.4 Arrange the special lecture on Dhamma and tree planting and avoiding hunting wildlife
  - 2.4.5 Organized tree games in the forest

### **Group 3**

#### **Role of Women in the Family Life**

##### **1. Family in the women concept**

- 1.1 Warm hearted family
- 1.2 Self reliant
- 1.3 Help solving problems
- 1.4 Equal right in the family

##### **2. Family problem in household in Khao Yai Subdistrict**

- 2.1 Low income
- 2.2 Youth need more studies

##### **3. Sharing responsibility in the family**

- 3.1 Need man to take more responsibility in financial matter
- 3.2 Want man to be good family leader
- 3.3 Women responsible to house works and family expense

##### **4. Media and communication for better knowledge in the community**

- 4.1 Satisfy to the information flow in the community
- 4.2 Receive sufficient knowledge in the community

### **Group 4**

#### **The Role of Women on the Status of Women**

##### **1. Life and the possible role of women**

- 1.1 Gender equity with man
- 1.2 Democracy

- 1.3 Man share homework
- 1.4 Women can earn more money and take care the family
- 1.5 Helping each other is a must but remain traditional practices
- 1.6 Give more chance for women in decision making
- 1.7 Women has equal right in higher learning

## **2. Common problems of women in Khao Yai Subdistrict**

- 2.1 Unhappy from husband free love affairs with others
- 2.2 Overwork at home and less social function
- 2.3 Husband release his tension to women
- 2.4 Husband drink too much
- 2.5 Husband aggressiveness
- 2.6 Jobless
- 2.7 Play gambling during free times
- 2.8 Need more income generated works
- 2.9 Women group is not activated in job creation
- 2.10 Lack of new technologies like computer
- 2.11 No saving
- 2.12 Daughter dress unsuitable in the community
- 2.13 Son drive too fast and cause health trouble.

## **3. Women and social activities**

- 3.1 Give more chance to women to attend several meetings
- 3.2 People accept women idea in the meeting
- 3.3 Join more social activities of subdistrict
- 3.4 Women should promptly participate in the meeting

## **4. Women and religious activities**

- 4.1 Join the activities in the religious days
- 4.2 Help developing the temples
- 4.3 Dress suitably well when going to the temple
- 4.4 Take care temple properties
- 4.5 Help in organizing the training course
- 4.6 Invite the monks to talk more
- 4.7 Help in control the migrate monks

## **5. Women and the youth**

- 5.1 Support youth in sport
- 5.2 Take care youth behavior
- 5.3 Keep the youth away from the narcotic problems
- 5.4 Support youth with better education
- 5.5 Promote youth to train do it yourself program
- 5.6 Support youth network

5.7 Teach the youth to do saving program

**6. Women and aging group**

6.1 Let members of family take care the aging group

6.2 Promote the aging group activities

6.3 Support the physical exercise of the aging group

6.4 Took aging group for study tour

6.5 Health check up regularly conduct

6.6 Bring the aging group to the temple

**7. Women and cultures**

7.1 Preserve traditional cultures

7.2 Create the atmosphere of respect to the aging group

7.3 Promote the youth to take good care of cultures

## **Appendix D**

Interview Schedule for the Villagers of Ban Thung Soong Village

Respondent No:

Questionnaire  
for  
Local People (Men and Women) at Ban Thung Soong village, Krabi

For the purpose of  
Women Role on Participatory Approaches in Forest Resources Management: A Case  
Study at Ban Thung Soong Community Forest in Krabi, Thailand

Conducted by

Mahmudah Rokseno Sultana  
M.S. student in Tropical Forestry  
Faculty of Forestry  
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Thailand

Mark respective column with ticks (✓).

Name of the Interviewee.....

Status in Household	☐ Head of household	☐ Spouse
	☐ Parents	☐ Son/daughter
	☐ Other	

## Part 1: Socio-Demographic Characteristics.

## 1. (Gender)

(Male)    ☐	(Female)   ☐
-------------	--------------

## 2. (Age)

(21-30 years)   ☐
(31-40 years)   ☐
(41-50 years)   ☐
(51-60 years)   ☐
(60 years above)   ☐

## 3. (Origin)

(Local)    ☐
(Migrant)   ☐

## 4. (Religion)

(Buddhist)   ☐
(Others, specify).....

## 5 (Marital status)

(Single)   ☐	(Married)   ☐
(Widow)   ☐	(Divorce)   ☐

## 6. (Family members)

(2 members)    ☐
(3-5 members)   ☐
(6-8 members)   ☐
(Above 9 members)   ☐

## 7. Relationship of a family i.e. women to men and women to children)

(Friendly)   ☐	(Good)   ☐
Not good)   ☐	(Others)   ☐

## 8. (Education levels)

(Illiterate)   ☐	(Primary)   ☐
(Secondary)   ☐	(Above)   ☐

## Part 2: Economics Characteristics:

## 9. Major Occupation

(Farmer- Agriculture and Farming related)    ☐
(Labour)    ☐
(Business)    ☐
(Govt. service)    ☐
(Forest related- Rubber, Oil palm and Mixed Fruits)    ☐
(Others)    ☐

## 10.Minor Occupation

(Farmer- Agriculture and Farming related)    ☐
(Labour)    ☐
(Business)    ☐
(Govt. service)    ☐
(Forest related- Rubber, Oil palm and Mixed Fruits)    ☐
(Others)    ☐

## 11. (Monthly Income and Expenditure summary):

Range(bath)	Income	Expenditure
<2500		
2,500-7,500		
7,501-12,500		
12,501-20,500		
20501-30,500		
>30,501		

## 12. The one who handling money in your family:

(Husband)    ☐  
(Both)    ☐

(Wife)    ☐  
(Children)    ☐

## Part 3: Participation in Own Land Activities

13. How much lands do you as your family own?

.....Rai

14. If you have own land who has the legal right in that land?

(Husband) ☺

(Wife) ☺

(Both) ☺

(Children) ☺

15. How is it being utilized now?

Rubber plantation ☺

Livestock ☺

Oil palm plantation ☺

Homestead) ☺

Orchard ☺

(Fallow) ☺

16. What types of works of men and women do on the own land?

Types of work	M	W	Both
1. Rubber plantation			
2. Oil palm plantation			
3. Mixed fruit orchard			
4. Small scale livestock			
5. Homestead			

17. Did you grow tree for household use?

Yes ☺

No ☺

18. If yes, please specify the number of tree species.....

Total number of trees.....

19. Who make decision the following activities in your household?

Items	M	F	Both
Tree plantation			
Selection of species of trees			
Cutting and Selling of trees			



24. Do you think that in your village forest coverage is better after introducing community forest program?

(Yes)   

(No)   

25. Does the forest management committee take opinion of women for community forestry program?

(Yes)   

(No)   

26. Which process do you actively participate (can choose more than one answer)

1. Decision making process
2. Planning process
3. Implementing process
4. Monitoring and Evaluation process.

27. Participation and responsibility in community forestry resources management process

Items	Most	More	Moderate	Less	Least
1. Decision making					
1.1 Taking part in decision making process					
1.2 Taking part in identification of problem					
1.3. Taking part in solving of problem					
2. Planning process					
2.1. Taking part in constructing framework, rules and regulations of community forest management					
2.2. Taking part in activities concerning community forest conservation.					
3. Implementing process					
3.1. Taking part in supporting financial or instrument for community forest conservation activities					
3.2. Taking part in planting trees in community forestry					
3.3. Taking part in garbage management in community forest area.					

3.4. Taking initiative to control illegal tree cutting and wildlife hunting and poaching.					
3.5. Taking part in group to persuade other people joining community forestry activities					
4. Monitoring and Evaluation process.					
4.1. Taking part in dissemination of information for the improvement of community forestry conservation					
4.2. Taking part in monitoring determine the success and difficulties of community forest management					
4.3. Sharing ideas to improve the solution					

28.. In participating community forest program which factor is influence to women?

No	Factors	Most	More	Fair	Less	No effect
1.	Selecting the village leader who is very much eager to protect the community forest					
2.	Families welfare improved after participating in community forestry program					
3.	Being proud of community forestry history					
4.	Families economic problem solving					
5.	Concern about the need of resource and environment conservation					
6.	Family awareness					
7.	Creation of better environment for future generation					

## Questionnaire 2

## Women's problem in participating in community forest management

Respondent No:-

Name of the Interviewee.....

Status in Household      ð Head of household      ð Spouse  
    ð Parents     ð Son/daughter  
    ð Other

Age.....

## Problem of women participation in forest resource management

Socio-cultural and religious barriers	More 3	Limited/restricted 2	Less 1
Women mobility			
Symbol of culture			
Conservative Family			
Conservative women			
Always need male permission			
Women can participate easily in public and social work			
Self confidence			
Male sharing in reproductive activities			
Equal ownership in the family			

Economic barriers	Equal	unequal	None
Distribution of income from forest products			
Rights over income from forests product			

Questionnaire -3  
Gender Division of labour

Respondent No:-

Name of the Interviewee.....

Status in Household      ð Head of household      ð Spouse  
   ð Parents      ð Son/daughter  
   ð Other

Age.....

Activity profile

Activities	M	W	Both	Boy	Girl	Children
<b>Productive Activities</b>						
Felling						
Slashing						
Burning						
Species selection						
Planting						
Weeding						
Thinning						
Harvesting						
Post harvesting						
Marketing						
<b>Reproductive Activities</b>						
Washing & Cleaning						
Cooking						
Feeding family						
Taking care child						
Water collection						
Fuel collection						
Fodder collection						
Collecting NTFPs for consumption						
<b>Community work</b>						
Meeting						
Religious functions						
Regular gathering						
Cooking of marriage ceremony						