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**LEARNING NETWORKS OF RESOURCE AND  
ENVIRONMENTAL MANAGEMENT FOR  
SELF-RELIANCE**

**SHUTIMA SAENGERN**

อภินันท์นาการ

จาก

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

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ENVIRONMENTAL MANAGEMENT FOR  
SELF-RELIANCE**

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The purpose of this research is to study learning networks of natural resource and environmental management for self-reliance: a case study of Mairiang Community Development and Study Center, Mairiang sub-district, Chawang district, Nakhon Si Thammarat province. Two methods of this research were used: documentary study and qualitative study through numerous techniques of qualitative research. The data were collected from the following informants: officials of government organizations, non-government organizations, business organizations, academic organizations, community organizations and the people of Mairiang sub-district.

The results of this study indicated that Mairiang Community Development and Study Center started to from gathering of villagers who needed to be self-reliant and who needed to protect themselves from being taken advantage of by mediators. They used kinship and residence in the same community as tools to organize Mairiang Agriculturists' Group which was changed to Mairiang Gardeners' Group and which is now Mairiang Community Development and Study Center. This community focused on people's participation in the "Council of Mairiang Community Leaders", by which the procedure of all activities was based on resource and environment of Mairiang community. Having analysed both external and internal factors that affect the occurrence of Mairiang Community Development and Study Center, it has been found that the following internal factors were determined: social relationships, learning to face problems together, local culture background, and leaders. For external factors, the following were examined: single economic system that focuses on export and a monopoly of mediators and support from outside organizations. Besides this there are four steps in the learning process of resource and environmental management for self-reliance: problem realization, problem analysis, determination of proper alternatives and procedures. For five-party organizations that took part in managing resources and the environment for self-reliance, it has been found that these organizations participated in various ways, such as cooperation, assistance, coordination, budget support, and so on.

Some suggestions were made: for policy research, clear policy on Para rubber management should be determined in order to bring it into practical integration in the long run. Participation of Mairiang Community Development and Study Center with state agencies and other sectors in working process should be supported. For practical recommendations, government organizations should proceed in all activities sincerely and seriously by emphasizing personnel preparation (government officers). Knowledge and understanding of aims and working processes of Mairiang Community Development and Study Center should be provided to villagers in Mairiang community. Coordination and understanding of roles and duties of Mairiang Community Development and Study Center and of local administrative organizations should also be put in place so that they can co-operate and work together. Besides this, villagers should be supported knowledge of technology, production management and marketing in order to get ready to accept the concept of community business in the second phase of the community master plan.

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การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาเครือข่ายการเรียนรู้การจัดการทรัพยากรธรรมชาติและสิ่งแวดล้อมเพื่อการพึ่งตนเอง ทำการศึกษาเฉพาะกรณีองค์กรชุมชนศูนย์ศึกษาและพัฒนาชุมชนไม่เรียง ซึ่งมีที่ตั้งอยู่ในตำบลไม่เรียง อำเภอดงหลวง จังหวัดนครศรีธรรมราช วิธีการที่ใช้ในการวิจัยมี 2 ลักษณะ คือ การศึกษาจากเอกสารและการศึกษาเชิงคุณภาพ โดยใช้เทคนิคการวิจัยเชิงคุณภาพหลายๆ เทคนิคร่วมกัน ทำการศึกษาจาก คณะกรรมการและสมาชิกของศูนย์ศึกษาและพัฒนาชุมชนไม่เรียง เจ้าหน้าที่จากหน่วยงานของรัฐ เจ้าหน้าที่หรือผู้ปฏิบัติงานหรือบุคคลที่เกี่ยวข้องกับองค์กรภาครัฐ องค์กรภาคเอกชน องค์กรธุรกิจ องค์กรวิชาการ องค์กรชุมชน และประชาชนที่อาศัยอยู่ในพื้นที่ตำบลไม่เรียง

ผลการวิจัยพบว่าศูนย์ศึกษาและพัฒนาชุมชนไม่เรียง เป็นองค์กรชุมชนซึ่งมีจุดเริ่มต้นมาจากการรวมกลุ่มของชาวบ้านที่ต้องการพึ่งพาตนเองและปกป้องตนเองจากการเอารัดเอาเปรียบของพ่อค้าคนกลาง โดยอาศัยความเป็นเครือญาติและความเป็นคนในชุมชนเดียวกันจัดตั้งเป็นกลุ่มเกษตรกรทำนาไม่เรียง ต่อมาได้ปรับเปลี่ยนเป็นกลุ่มเกษตรกรทำสวนไม่เรียงและพัฒนาเป็นศูนย์ศึกษาและพัฒนาชุมชนไม่เรียงในปัจจุบัน โดยเน้นให้ชาวบ้านเข้ามามีส่วนร่วมในลักษณะที่เรียกว่า สภาผู้นำชุมชนไม่เรียง และมีการดำเนินงานในกิจกรรมต่างๆ บนพื้นฐานของทรัพยากรและสภาพแวดล้อมของชุมชนไม่เรียง และเมื่อทำการวิเคราะห์ปัจจัยที่มีผลต่อการเกิดขึ้นของศูนย์ศึกษาและพัฒนาชุมชนไม่เรียง ทั้งปัจจัยภายในและปัจจัยภายนอก พบว่าปัจจัยภายใน ได้แก่ ความสัมพันธ์ทางสังคม บทเรียนการเผชิญปัญหาาร่วมกัน ประวัติวัฒนธรรมท้องถิ่น และความสามารถของผู้นำ ในส่วนของปัจจัยภายนอก ได้แก่ ระบบเศรษฐกิจเชิงเดี่ยวที่เน้นการส่งออก ภาวะการผูกขาดของพ่อค้าคนกลางและการสนับสนุนจากหน่วยงานภายนอก นอกจากนี้เมื่อศึกษาถึงกระบวนการเรียนรู้ในการจัดการทรัพยากรธรรมชาติและสิ่งแวดล้อมเพื่อการพึ่งตนเองพบว่ามี 4 ขั้นตอน คือ ความตระหนักในปัญหา การคิดวิเคราะห์ปัญหา การกำหนดทางเลือกที่เหมาะสม และการดำเนินงาน ในส่วนขององค์กรเบญจภาคีที่เข้ามามีส่วนร่วมในการจัดการทรัพยากรธรรมชาติและสิ่งแวดล้อมเพื่อการพึ่งตนเอง พบว่า องค์กรเหล่านี้ได้เข้ามามีส่วนร่วมในหลายๆ ด้าน ทั้งด้านความร่วมมือ ความช่วยเหลือ การติดต่อประสานงาน การให้งบประมาณสนับสนุน และอื่นๆ

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## CHAPTER I INTRODUCTION

### 1.1 Rational and Justification

At present economic, political, social and cultural atmosphere in society has been changed rapidly. So basic resources and raw materials in parts of the world have been utilized to respond to needs and rapid changes. This causes several problems.

One of these problem is environmental problem with serious condition day after day. The main causes of this problems are : population growth, economic growth and technology progress. Besides these way of life of people at present gets involved closely with environment until environment cannot adjust itself. This affects both directly and indirectly environmental problems, declined natural resources and environmental prolusion.

Environmental problems are therefore involved with life and living of people in all levels–individual, community, country and world. These problems do not only occur in community, but also spreads throughout country. And several problems become world environmental problems (Sven–Olof Ryding, 1992: 13–38). Clear example of these problems is climate change that interests the world to solve urgently (United Nations Environment Programmed,: [www.unep.org/geo.2000](http://www.unep.org/geo.2000)). Some Phenomena that occur are: Greenhouse Effect or Global Warming, Ozone Layer Depletion, El Nino Phenomenon, La Niya Phenomenon and others. Serious effects of these phenomena may destroy all living things in the world. Therefore the result of environmental problem does not only affect the limited areas of problem but only all regions of the world.

Because of these serious environmental problems, various countries have shown interest and woken up to the serious environmental problems everywhere, causing organizations in protection and solution of a global environmental problems for the first time. The starting point of this organizations happened in 1968. Sweden made a purpose to the United Nations Economic and Social Council about the serious state of world environment, famine, energy and environmental poisoning which would negatively affect humans around the world. The United Nations then arranged an international summit called “The Human Environment” on the 5<sup>th</sup> of June 1972 in Stockholm, Sweden (Hempel, 1996 and CEDAR, 2000).

Following the success of the Stockholm summit, many more national environment summits occurred: the Belgrade, Yugoslavia Meeting in 1975, the Tbilisi Meeting in Germany in 1977 and the Rio de Janero Meeting in Brazil in 1992.

In the last meeting in Rio de Janero, Brazil in June 1992, international declaration called Rio Declaration on Environment and Development was made. This is only one way to cause social and economic progress of the world in long run,

linking social and economic systems with environment protection through holistic development of economy, society and environment (Michael Keating 1993: Preface). However this holistic development cannot occur unless coordination of network to create cooperative society in all aspects is made. This organizations society is based on learning together of people in society. Therefore establishment of learning network in society in the levels of community, local, country and world, especially in the level of community which is regarded as grass root of country, encouraging people to participate in the process of network establishment, can affect the social development that brings to country development at last.

Concept of learning networks has become a strategy of country development in Thailand by which it can be applied in the process of economic, social, cultural and education development (Rung Kaewdaeng, 1998: 199 – 201; Kanjana Kaewthep, see Narong Phetprasert, editor, 1999: 237 – 243) Yot Santisombat (quoted Chatthip Natsupha and others, 1998: 252) stated that “If community wants to create strength, fight with isolation and to preserve freedom and potential in life management, it must not only go beyond community cultural adherence but also adjust custom and tradition to needs and necessity of age. Each community cannot stay alone, so it needs to expand networks of learning, production, investment and marketing etc. in a new form”. Prawet Wasi (1998: 52 – 63) expressed similar idea that “In each community the survey of strong community for the purpose of learning resource of people in community should be made..... in future society will compose people or communities to link them as networks. In addition community not only consists of learned people but also a learning center. Each community has a link with other communities and becomes learning network with high wisdom power. This can solve all problems and create peaceful and righteous society” (Chartchai Na Chiangmai, 1999: 64 – 74 ; Kanjana Kaewthep, 1999: 237 – 243 ; Samphan Techaathika and others, 1997: 33 – 37, Chatthip Natsupha, 1997: 26 – 27 ; Rung Kaewdaeng, 1998: 1999 – 200).

Because of importance of learning networks as mentioned above, the National Economic and Social Development Plan volume 8 (1997 – 2001) was proposed and became the master plan used as policy in country development at present. In this plan one guideline of country development is systematic creation of community learning networks by supporting experience and learning transfer and exchange among people in the same community and among community organizations, emphasizing on utilization of local wisdom and village sages. Community organizations in nearby areas, provinces and regions are also supported to create development networks, exchange of knowledge and to promote cultural maintenance and natural resources preservation as well as problems solution of community (The Office of The National Economic and Social Development Board : 47).

In the National Economic and Social Development Plan volume 9 (2002 – 2000), co-vision of satisfied Thai society in future will be specified into three features: quality society, local wisdom and learning society and harmonious and generous society. In this plan nine strategies are introduced. One of them is establishment of learning society to create knowledge and to spread knowledge and learning to Thai people. It aims at development and promotion of learning networks by providing learning service to people, expanding learning resources and building-up learning college of community to apply, spread and to transfer knowledge and

learning to community through media, innovation and information technology (Office of the Permanent Secretary for Education).

Concept of learning networks is based on bottom-up and social development, emphasizing on people participation of development for self-reliance. Old knowledge and experience of community (local or old wisdom) in accordance with process of external knowledge screen (new technology) to integrate into new knowledge are used to solve problems and develop oneself, family, community, regions and country. So learning networks are the processes of learning exchange to solve various problems and encourage people to think, analyze, find out the way to solve problems, conclude and evaluate the performance in order to meet the proper way of practice. And the final aim of learning networks is to enable people to learn and develop their ideas and analyze all cases. This helps people upgrade their learning to manage and solve several problems and help themselves effectively. (Phia Bungkathein, quoted in Narong Phetprasert, editor, 1999: 15 – 19).

Learning network is a strategy to develop people and Thai society. This is parallel with the expectation of Thailand development plan with aims of people development, community strength, happy family, peaceful society and sustainable environment. Learning network is therefore the main point of social and community development for self-reliance. This new process is accepted throughout country because it is community based development approach to strengthen community in various dimensions-economic, political, administrative, social, cultural and environmental, emphasizing on harmonious living in and out of community in order to meet appropriate way of social context of village community which is regarded as base and important grass root of Thai society structure.

For the last period of time Thailand was developed to be a new modern country, using a strategy to change village society into city society, and to develop agricultural society to be industrial society. This affected agricultural community and changed the way of production for self-reliance and simple living into a new agricultural production system that aims to sell and to depend on others. This strategy might give satisfied result through increasing growth rate and expansion of new industry, however it made limitations and caused various problems to Thai society, for example, stagnation of agriculture and deterioration of village community etc. Under this circumstance these village communities seek an alternative way to solve problems by themselves, gathering to increase potential and capacity to manage and solve several problems by themselves. This causes power through various dimensions to link all systems, using people or community as foundation with key roles in practical way (Prawet Wasi, 1993: 5 – 6). This also causes process of learning from connecting knowledge with truth in the way of life that ancestors created. Its final aim is for self-reliance and duty for life continuity of community in various features-physical, economic, political, social-cultural and environmental (Winter, 1996).

At present there are various Thai communities that provide learning process to people in communities and to manage people organizations with potential to adapt themselves in order to help themselves and make duties to respond to new needs of communities and people in society. This must be parallel with changing environment

(Thawilwadee Bureekul, 2000: 56 – 58). These community organizations were formed by voluntary people who have the same objectives, ideals, friendship and kindness. They learn together continuously to work , to solve problems and to develop economy, mind, society, culture and environment with free and efficient management in order to determine their future through cooperative working process (The Office of the National Economic and Social Development Board, 1996: 13). Besides these the following actions are used—organizations, exchange, adaptation ,application of knowledge object and resource and co–management with other organizations in the form of organizations called five–party organizations : community, government, academic, non-government and business organization. All these factors take part to push and create community networks which are regarded as learning networks of people in community for self–reliance in the midst of changing wave of the world (Pamera R. Haunschild and Christine M. Beckman, 1999). It is concluded that concept of learning networks is used as strategy to develop community, society and country respectively. It is also applied as world strategy to protect, manage, renovate and preserve ecology and natural resources as mentioned earlier.

Because of the above reasons, the researcher was interested to study learning networks of resource and environmental management for self–reliance. The researcher chose Mairiang Community Development and Study Center in Chawang district, Nakhon Si Thammarat province as the target area because this center is a good example of community organization that reflects development of learning network with concrete, clear and accepted management of resource and environment for self–reliance (Office of the National Education Commission, 1996: 11–12). Development in form of proceeding plan of community development was carried out in five main ways: education, sustainable agriculture and environment, community public health, community business and industry and community fund in which each way has direct or indirect link with management to preserve environment and natural resource. This is body of knowledge and learning process with aim of integrated self–reliance of all aspects of community. So Mairiang Community Development and Study Center is a good example of community organization that developed strategy of concrete self–administration for self–reliance. At present this center becomes an example of pilot community where villagers set plan of community development and determine community direction by themselves (Foundation of Social Volunteer, 2000: Cover Page of Video Magazine). This center proceeds systematic, complete and concrete management of natural resource and environment that is based on sustainable management and balance of environment and natural resource, with support from and organizations with other organizations (five–party organizations) in the form of learning networks of resource and environmental management. This center also expands learning networks to other areas and communities in different regions and becomes the learning center in the form of both organizations and spread of concept of self–reliance in resource and environmental management in accordance with the principle of sufficiency economy under the context of Thai society at present.

## **1.2 Objectives of Research**

### **1.2.1 General objective**

To study learning networks of resource and environmental management for self – reliance

### **1.2.2 Specific objectives**

- 1) To study basic data as context in different parts of community where is location of Mairiang Community Development and Study Center.
- 2) To study development of Mairiang Community Development and Study Center.
- 3) To study and analyze the factors that affect the occurrence of Mairiang Community Development and Study Center.
- 4) To study the features of resource and environmental management of Mairiang Community Development and Study Center.
- 5) To study learning process in resource and environmental management of Mairiang Community Development and Study Center.
- 6) To study five–party organizations that take part in resource and environmental management with Mairiang Community Development and Study Center.

## **1.3 Questions for Research**

### **1.3.1 Main Question for Research**

How do community organizations that were chosen as case studies have learning networks of resource and environmental management for self–reliance ?

### **1.3.2 Sub Questions for Research**

- 1) In which community are Mairiang Community Development and Study Center located ? How does this community have basic data which is the context of community in parts of population, environment and natural resource, economy and social culture?
- 2) How do development of Mairiang Community Development and Study Center from past to present ? And what factors affect the occurrence of Mairiang Community Development and Study Center ?
- 3) How do Mairiang Community Development and Study Center manage resource and environmental in features of policy, administration and practice? And what is the learning process of resource and environmental management ?
- 4) What organizations out of five–party organizations (government, non-government, business, academic and community) in resource and environmental management of Mairiang Community Development and Study Center ? What is the feature of participation ? And how does each of these five–party organizations have method of exchange and learning in management of resource and environmental with Mairiang Community Development and Study Center ?

## **1.4 Scope of Research**

1.4.1 The aim of this research is to study learning networks of resource and environmental management for self-reliance. However learning network has coordinate and connected feature, so learning is dynamic without clear and certain scope. Because of this limitation the researcher fixed the scope of the study from specific community organizations/some organizations of group/various organizations that enter to connect with community organizations as case studies with procedure in concrete management of resource and environment for self-reliance and continuous and clear expansion of network.

1.4.2 This research also aims at studying learning networks of resource and environmental management for self-reliance from community organization which is the accomplished center of learning networks for self-reliance, that is Mairiang Community Development and Study Center.

## **1.5 Basic Assumption of Research**

1.5.1 Data in primary source taken from the studying process of qualitative research was accepted as a representative concept of community organization.

1.5.2 The collection of field data with qualitative study was made with the following technics : In-depth interview, participation observation, non-participation observation, focus group discussion and group interview. This helped create understanding in the study of learning networks of resource and environmental management for self-reliance as it was. However this step did not pass the process of data analysis. But the presentation of the results of research on learning networks of resource and environmental management for self-reliance already passed the process of data analysis, using academic concept and theory as a frame in analysis and conclusion .

## **1.6 Limitation of Research**

Since the learning networks used as a case studies are social networks with responsible works in various fields-economy, social-culture, environment and natural resource and administration, this study did not cover all fields. So only learning networks of resource and environmental management with clear activities were studied. And because of time limitation the study was done only at Mairiang Community Development and Study Center that is the center of learning networks for self-reliance.

## **1.7 Definition of Operational Terms**

**Learning Networks** means individuals, organizations, sectors or institutions that agree to coordinate and link to each other under the same systematic objectives or agreements and that join activities together with the aim of learning development in

order to solve problems and to develop whatever useful according to those objectives and agreements.

**Management** means performance or procedure of policy, administration and practice that is involved with the use of natural resource and environment.

**Resource and Environment** means whatever uncultivated but born naturally that is useful and can respond to humans' needs, including processing productions. In this study it means flora and fauna resources and productions from the process of those flora and fauna resources.

**Organization of Learning Networks for Self-Reliance** means Mairiang Community Development and Study Center which is the center of learning networks for self-reliance.

**Resource and Environmental Management** means performance or procedure of organization of learning networks for self-reliance in the fields of policy, administration and practice that are involved with the use of resource and environment and other activities that are the results of problems realization, problems solution and limitations of resource and environment so that the utmost benefit will go to the members of organization of learning networks for self-reliance.

**Five-Party Organizations** means government organizations, non-government organizations, business organizations, academic organizations and community organizations as details given below :

1. Government organizations: The organizations that are formed by State sectors.
2. Non-Government organizations: The organizations that are formed by people who gather together and proceed activities for development.
3. Business organizations: The organizations that are formed by people who gather together and proceed activities for business.
4. Academic organizations: The organizations that are proceed activities for educational.
5. Community organizations: The organizations that are formed by people in community who have the same interests and skills to protect and solve problems and to develop local villages.

**Learning Process** means learning that consists of the following steps :

1. Problem realization: To understand that what problems are needed to solve.
2. Problem analysis: To analyse the problems in order to determine an alternative to solve these problems.
3. Determination of proper alternatives: To make decision of an alternative that is expected to solve problems.
4. Procedures: To proceed the plan according to an alternative selected.

## 1.8 Usefulness of Research

This research on learning networks of resource and environmental management for self-reliance was done through qualitative study in order to use it in the following ways:

**1.8.1 Policy:** It is basic data that already passed the analyzing process through academic framework used by the organizations that pay important roles in management and preservation of resource and environment, by creating learning networks in community for self-reliance in order to set plan of environmental development in the proper way that is parallel with development plan of the country in future.

**1.8.2 Academic:** The body of knowledge of learning networks of resource and environmental management for self-reliance is developed into the holistic. This will be the benefit for further plan of environment in future.

**1.8.3 Practical:** People whose works are involved with resource and environmental management can apply a strategy of learning networks for community development, education development, environment development and others that are proper and parallel with the context of society and community.

## **CHAPTER II LITERATURE REVIEW**

For studying the learning network about how to manage natural resources and environment for the purpose of self-reliance, the researcher has studied the concepts and the theories taken from social, educational final and development science as well as the research works relevant.

The following concepts and theories have been clarified:

- 2.1 The concept of learning process
- 2.2 The concept of learning network
- 2.3 The concept of natural resources management
- 2.4 The concept of community' s self-reliance
- 2.5 The concept of new theory and sufficiency economy
- 2.6 The concept of five-party organizations
- 2.7 The relevant research works
- 2.8 Conceptual framework of research

The details of the above concepts will be carried out as follows:

### **2.1 The Concept of Learning Process**

The learning process of human beings is regarded as life long learning. It started from moral cultivation in family, community that set up prohibitive rules, culture, tradition, social participation and interaction. This accords with the concept of Philip Khooms (quoted Unta Nopphakhun, 1971: 10 – 12) “education is learning that you can learn everywhere at the time needed and with various methods. It is life long process”

The methods and learning resources can be classified into three as follows:

1. The instinctive education: It is the most natural process of learning that comes from the basic instinct. It is also life long learning accumulated from knowledge and skills in daily life experience and environment.
2. The formal education: There are the institutes and organizations who are responsible for education management. The education system is classified according to the ages of children i.e. from primary schools to universities.
3. The non-formal education: The education system is managed by another institutes and organizations to offer the extra curriculas.

#### **2.1.1 The Learning Process of Community**

Considering the learning process of individuals, family and community, Office of the National Culture Commission (1994: 1 - 3) has divided the learning process into two, that is, the learning process occurring in family and community and the one occurring outside of family and community. These two

learning processes include the following items: concept, data collection, data analysis, questions and answer the problems, causes of problems and the ways to solve these problems.

There are four distinctive features of development of the learning process:

1. The members of family and community work together (group work), exchange their ideas, criticize, raise the problems and find out the ways to solve them together. This is the intelligent method of self-reliance and continuous development.
2. The members of family and community put their effort to solve the problems in order to improve their life quality. This reflects thinking process, repetition and performance that help the members develop their mind and accumulate their wisdom.
3. The members of family and community focus on the problems oriented and try to help and develop themselves continuously. They also are initiative to find out the best method to learn how to help themselves.

### **2.1.2 Administration and Management to Promote and Develop the Learning Process of Community**

Silaphorn Nakhornthap (1997: 96 – 105) explained that the need and the most necessity to strengthen the community is knowledge i.e. a new administrative science-administration and management of the organizations as networks. She also said that the learning process of community is network. The relationship among members is horizontal. There is no power used as in organizations run by state and general private. Organizations of community are necessary to organize various learning activities and to keep them going smoothly.

This is the way of administration and management to balance the two poles, that is organization of community and the relationship among the members in community. Therefore it is urgent to promote the learning process of community in order to increase efficiency in administration to strengthen the community and at the same time these community became the learning resources of other communities.

## **2.2 The Concept of Learning Network**

### **2.2.1 The Concept of Network**

Sharp (1992; 5) defined “network” as the system that all members are equal, free and self-reliant. They work together with respect, not power. This is the symbol of pure democracy. While Prayad Chatupornphithakkul (1995: 9 – 10) stated that network is the ideal relationship of the people who have the same ideas and goals.

This network is formed by members and groups in order to discuss and exchange idea, information and resources among themselves.

Kanjana Kaewthep (1995: 60) explained that the word “network” taken from English as “net” and “work” means the pattern of organizations of persons, groups and organizations who have their own resources, aims and activities,

even though they do not often join activities, they can cooperate and help whenever they need.

Annop Phongwat (1987: 3) said that network is set up to link up all different sides systematically and distinctively. They work together with their own uniqueness and philosophy.

Parichart Walaisathian (2000: 311 – 312) pointed out that network is made to explain the collection of different organizations in the society to become business, social, learning or development networks with the different and similar points of view.

### **2.2.2 The Concept of Social Network**

Mitchell (1969) mentioned in Somjai Lohaphoontrakool, 1987: 10) defined the social network as the direct and indirect connection between one person with the other persons. This network is the concept used to study the relationship in the society in order to understand informal group and social structure. Suthep Sunthonphesat (1992; 391) explained the social network as mental pattern of connection among the members in society in both micro and macro levels. Chartchai Na Chiangmai (1990: 209-214) expressed the concept of social network as the relationship of groups that can tell the behavior of these people.

The distinctive features of social network can be concluded into five (Chartchai Na Chiangmai, 1990: 209-220; Phimpawal Preedasawat, 1990: 348 – 256):

1. Complex relationship: The multiple relationship depends on people's roles in society. People may have a lot of roles in daily life. The relationship of two persons with one role is called the simple relationship; while with multiple roles called complex relationship.
2. Exchange relationship: The relationship of people in society not only depends on their expected role or norm but also perception base and decision making in exchanging their ideas.
3. Giving and receiving relationship: This causes organizations and competition among people and groups.
4. Frequency and period of relationship: This leads to the quality of complex relationship.
5. Involvement of network: For social network with much more involvement people can get information through several doors. Therefore people's ideas and actions in the same network are very similar.

### **2.2.3 The Concept of Learning Network**

This new concept has just been mentioned in Thai society for about ten years ago. It is accepted important as it has been included in the strategy of country development. The details are given below:

In the National Education Plan 1992, there was policy about how to manage the system of learning network to give an opportunity of life long learning to people. This plan helps people organize the process of learning in communities. They can analyze their problems and needs to develop communities paralleling with those problems and needs. They also find out the best way to support the exchange of experiences among communities (The Office of the National Education Commission, 1992 : 23).

In the National Education Development Plan volume 7 (1992-1996), the policy about education for people and learning network was given. It was urgent to manage education as learning process with flexible methods according to the needs of people, communities and society.

In the Non-Formal Education Development Plan volume 7 (1992-1996), the system of learning network was also mentioned as urgent issue. This plan focussed on the ability development of communities as the center of activities. The use of educational resources among government and non-government organizations and the other knowledge resources was also included in this plan.

In the National Economic and Social Development Plan volume 8 (1997-2001), it was said that the learning network formed systematically is another way to develop country by supporting people to exchange their experiences and local wisdom in communities.

They are also supported to carry on development network, cultural maintenance, natural resources preservation and community problems solution (Office of the National Economic and Social Development Board: 47).

In the National Economic and Social Development Plan volume 9 (2002-2006), the strategy to promote Thai society of learning society has been determined. This strategy aims at developing and supporting the learning network of communities through means of communication, innovation and information technology (Office of the Permanent Secretary for Education, 2002: 21).

As the concept of learning network is the main topic in this research, therefore, the researcher has collected the data from various resources in order to explain this concept in different dimensions as the details given below:

### **1) The Definition of Learning Network**

Wichai Tansiri (1996: 66 – 67) said that the learning network is efficient life long learning management with the potential of social institutions (political, religious and cultural). All these institutions are encouraged to pay an educational role.

Sunthon Sunanchai (1992 quoted in Department of Non-Formal Education, 1995: 2) explained that the learning network is the connection of different knowledge resources to exchange information among people and institutions.

Kla Somtrakool (1992: 189) pointed out that the management of learning network system is the method to unite educational experience in many ways that are appropriate for the target groups. For this system learners are the main figures who consider the content of what they are going to learn and find out the suitable way of learning by themselves. While government and non-government organizations are the supporters who help the learners in whatever they need.

All these are the ideas about the concept of learning network of educational scholars. The followings are the views of social scholars who defined the concept of learning network in various social dimensions:

Anek Nakhabuttra (1990: 29-46) explained that villagers' learning network is formed by villagers themselves to solve all problems in communities. They experience both success and fault and use their knowledge to manage all matters in order to meet their needs. They also initiate and apply outside knowledge. This become the process of harmonious learning.

Parichart Walaisathian (1999: 315-316) pointed out that people's learning network in communities causes the knowledge exchange among people, groups and communities. This leads to analyze people's problems and their needs.

Seri Phongphit (1989: Introduction) viewed that learning network is the combination of people, groups and communities by which boundary and social status are considered. However, they do not separate learning from the way of life.

Aphichai Phanthasen (1990: 12) made it clear that learning network promotes knowledge and capacity among people. It is assumed that knowledge is learned from each other. People learn and understand problems and analyze them systematically. They exchange their knowledge and develop their capacity by focussing people as the center of development.

From the above ideas, it is found that the concept of learning network has been explained in different dimensions. And the researcher has concluded that learning network is the issue that individuals, organizations and institutions agree to cooperate under the same purpose and agreement. This can lead to analyze problems and develop whatever mentioned in that agreement.

## **2) The Tpes of Learning Network**

The researcher has collected and classified types of learning network according to the following classifications:

### **1. The aim of learning**

The National Education Journal (1993, quoted in Pan Kimpee, 1997: 33 – 34) classified the aim of learning network into two: The first aim focuses on learning of individuals, while the second one on communities.

## 2. The structure of learning network

Bunrueng Niamhom (1994, quoted in Pan Kimpee, 1997: 34) classified this structure into four types:

1) **Distributed learning network:** There is cooperative center but the members of network will take responsibility for learning management. This type found in network of rural development is called distributed network.

2) **Centralized learning network:** The central organization works as cooperative center to control and manage learning network, technology investment and man power, while the members only take service from the center.

3) **Hierarchical learning network:** This network is same as organization chart. It is used to administrate and manage organizations.

4) **Mixed structure of learning network:** It is the mixture of distributed and centralized learning networks. This network is suitable for education management.

## 3. Social unit

Korbkam Photchanachai (1993: Abstract) classified learning network into four levels:

1) **Individual learning network:** It is family and kinship network that highly affects an individual learning.

2) **Group learning network:** This network is classified according to village group and occupation.

3) **Community learning network:** There is close relationship among communities.

4) **Institution learning network:** The religious and education institutions are the most important in villages.

## 4. Administrative level and job descriptions

Prawet Wasi (1995: 7) divided learning network into 13 types : community network, occupation network, business network, mass media network, trainer network, national knowledge collection and synthesis network, public network, academic network, state policy organization network and prestigious persons network.

## 5. Local leader's view

Somphan Techaathika, Preecha Uytrakool and Chueu Srisawat (1994: 89 – 91) classified network into three types:

1) **Concept network:** This network focussed on concept, knowledge and technical works. The leaders use this network to spread their ideas and exchange their experiences.

2) **Activity network:** This focuses on assistant and cooperative activities. It is the network of members of communities who are cousins or teachers and students.

3) **Budget supporter network:** This budget may be collected form villages or from outside organizations.

### 6. Occurrence of network

The researchers of the Research and Development Institute of Khonkaen University classified this network into two features:

1) The learning network of activity development: In early stage is divided into 2 patterns: For the first pattern, communities can develop the activities to solve their problems and the other communities will study and apply those activities for their people. For the second one, development organizations use the experienced communities as the centers of learning and exchange of experiences.

2) The network of bargaining power: It is believed that people who develop all activities in their areas only have no power to solve their problems that are not caused by themselves but by outsiders. Therefore people need to have bargaining power.

### 7. Area Experience

The Committee of Isan Private Development Organization (Samphan Techaathika, editor, 1998) classified the types of network into 10 : alternative agriculture network, community organization network, community business network, human right network, city community network, children and juvenile network, Isan Aids work network and new generation network.

8. The relationship with state supported system (Arun Kaewtapee 2000, 9-13) classified learning network into two types:

1) Learning network in state supported system : This is a kind of non-formal learning network. State organization, privates and communities help each other provide learning activities to different groups.

2) Learning network in private system: This is a kind of communities' learning network. It is a flexible form in which agriculturalists gather and academics or outside organizations support and encourage them to develop all activities.

### 3) The Features of Learning Network

Learning network is regarded as important tool to develop life long learning process and to strengthen communities. The distinctive network depends on different social context. However, the important features of learning network can be concluded as follows (Pan Kimpee, 1997: 32-33):

1. Learning network based on bottom-up development: This network support self-reliance development, that is, villagers better help themselves develop their communities than ask helps from outside.

2. People think together and participate in all activities by which community's organization is the center of management.

3. Learning process is managed for life way of people. It is flexible to interpret, exchange and expand knowledge continuously.

4. Learning network is a process to screen outside knowledge to mix with villagers' wisdom. They use this new knowledge to solve their problems.

5. People cooperate to manage learning process of resources in community.

From above explanations, the principles of learning network may be concluded as follows :

1. Everybody participates in all learning processes as in both individual's and community's participation.
2. Learning process is human nature and supported by inside and outside organizations.
3. The operation of organizations from inside and outside community is the supportive learning process.
4. Organizations as network is a working link among organizations.

#### **4) Establishment of Learning Network**

For establishing of network, process, technic and method should be considered. Cor P. Veer (1994: 68) explained that the individuals and institutions with the same interest are only working groups. They cannot be networks. If they want to gather as networks, the members should communicate, cooperate and join activities. The following steps are the processes of network participation development:

1. Groups or persons who can carry on network should be specified.
2. Good management of network needs technics to provide equal benefit to all parts.
3. For all activities and projects there is close communication among network members who are beneficiaries and budget providers.
4. All members should have the same interest, aims, views and ways of working to communicate among themselves.

Thai academic persons their views and explained further about learning networks as follows:

Office of the National Education Commission researched and developed learning network for public education: A case study in communities in the central part of Thailand, Suphanburi province. In the research it has been found that there are four types of wisdom transmission as basic creation of learning network :

1. Person to person transmission: It is the method of transmission by telling close relatives or members in the same family.
2. Group transmission: This method is very good and popular because everyone can take part to make decision.
3. Practical test by asking other people: It is risky transmission because a tester may be right or wrong and may not succeed in transmission.
4. Practical test by exchanging ideas: It is the best method of wisdom transmission.

Kritsada Bunchai (1997: 1) said that gathering of people to solve problems is an organ to set up learning network of communities. Efficiency of villagers' wisdom to manage education and establish different networks can respond their learning in various ways.

Anek Nakhabutra (1990: 38-53) explained that private development organizations focus on individuals who are experienced scholars and leaders to help

them set up “local network” under the same geography and movement of different local people.

Parichart Walaisathian (1997: 318-320) stated that in linking villagers’ network the important strategy is to find out intelligent local scholars and make them as “models”.

Prawet Wasi (1993: 29) explained further that the process of learning network started from gathering of villages who want to learn together. They develop the organizations of communities and link to other organizations to manage different issues such as management of environment, forest resource and heredity.

Kanjana Kaewthep (1998: 237-255) studied the establishment of Thai communities’ network and found that build-up of network or form of organization establishment will be expanded into two kernels:

1. Expansion of horizontal kernel called horizontal solidarity: This kernel is for groups of people who have similar social features. It is sometimes called “communities network”. The relationship of these people will be confined to their relatives and same communities.

2. Expansion of vertical kernel called vertical solidarity: This vertical network build-up that still remains in Thailand at present is called civil society.

Wimolluck Chuchart (1997: 198) expressed the pattern of process of learning network build up for forest resources preservation. She also show the development of successful learning network build-up; that is, from person-to-person network to person-group and group-to-group networks respectively. The followings are the processes of learning network establishment.

1. It starts from building-up leaders in or out of communities and they are accepted to solve communities’ problems.

2. For expansion and coordination of groups to strengthen community organizations, The members learn from each other and link together old wisdom and new knowledge.

3. For continuity of activity participation of network’s members, They help each other solve problems and expand the areas of activities with distinctive plans.

From the review of all relevant literatures about the concepts of knowledge, learning process and learning network, it can be analyzed and concluded that the above concepts is divided into two groups : group of academic persons in educational system and group of them who joins hands with non-government organizations to work on social development.

1. The first group’s idea is that learning network provides educational service to the members of communities in their area. All patterns of education i.e., formal education, non-formal education and informal education are managed to improve villagers’ life quality.

2. The second group’s idea focuses on development to strengthen people organizations and regards learning network as education for all. Communities

not only learn from their knowledge but also understand outside world to survive intelligently.

From the above ideas it has been found that learning network' consists of two components: people organization as the center of network and learning process. The researcher has used these two components as guide-lines to study the topic of learning network on how to manage natural resources and environment for self-reliance. This concept will be presented in chapter 2.

## **2.3 The Concept of Natural Resources Management**

### **2.3.1 The Definition of Natural Resources Management**

The word "Management" is defined as the efficient conduction by which procedures or steps, size and directions of procedures are clarified in order to avoid all mistakes. Antoniou (1971: 34) defined natural resources management as all procedures to protect and preserve natural resources and environment. Sewall (1975: 1) defined it as human beings' activities that influence the quality of resources and physical environment. Letey.J. (1973: 3) said that natural resources management is made by human beings to protect and preserve the balance of nature and ecology. Kasem Chankaew (1993: 570) stated that management of natural resources is the procedure used for the stable and continuous benefit of human. Amnart Charoensin (1996; 4) viewed that the efficient management is directed so that humans can consume natural resources as they need.

### **2.3.2 Natural Resources Management**

Kasem Chankaew clarified the principles of natural resource management as follows:

1. It is a basic procedure to utilize natural resources.
2. Natural resources preservation is considered in order to avoid resources destructions.
3. The procedure of natural resources utilization must be planned and systematized so that there is no impact on resources and environment.
4. If natural resources are declining or nearly extinct, they should be preserved and utilized later.

### **2.3.3 Management of Natural and Environment Conservation**

Thawiwong Sriburi (1995: 13-1-3-10) classified the principles of this management into three :

1. Administration: Government and private sectors who are directly responsible for natural resources management set a plan and policy and cooperate with other sectors to learn good technic and efficient management and administration.
2. Laws and regulations: The present laws and regulations are used to control, protect and solve environment problems and preserve natural resources. There are particular organizations that bear these laws. Having considered these laws

the power and duty of the organization with ability to follow policy and environment management should also be considered.

3. Project: In making projects to restore, renovate and promote natural and environment preservation, clear objectives must be considered to accomplish the projects.

### **2.3.4 Management of Community Natural Resources and Environment**

Nart Tanthawirun and Phoonsap Samutsakhorn (1995: 100 – 101) said that the efficient management of community natural resources and environment should be considered as a whole because all resources are closely related. The intelligent plan to manage resources should not be set to separate human from social, cultural or natural environment. It is important and urgent issue to administrate and manage natural resources to get the utmost benefit by considering stability and balance of social system.

Sub-Committee make the Manual for Provincial Natural Resources and Environmental Management (1990: 13) offered four concepts of natural resources and environmental administration and management

1. Preservation means the concept that the balance of natural resources and environment should be preserved. Human should not influence and block the growth of all these resources.

2. Conservation means the concept to look after, protect and preserve natural resources and environment by which they shall not be destroyed and declined.

3. Development means the concept that natural resources and environment should be developed and restored.

4. Utilization means the concept that natural resources should be utilized properly.

The Cooperative Committee of Private Rural Development Organization (1989 quoted in Pharung Meeudon, 1996:21-22) offered management system with three important elements:

1. Belief is the most important to link the relationship between natural resources and communities. It may be classified into various levels with supernatural belief included.

2. Regulations are the important patterns that communities should follow and observe to utilize and control natural resources intelligently.

3. Management organizations play a key role to manage public activities of communities, therefore members must agree with activities management, set regulations together and provide power of regulations observation to the representatives of communities.

From above explanation, it can be concluded that natural resources management cannot be separately considered, that is, man, natural and cultural resources should be put together. And all sectors can participate to set regulations to utilize natural resources for the utmost benefit of communities.

## 2.4 The Concept of Community's Self-Reliance

### 2.4.1 Definitions of Community's Self-Reliance

Self-reliance is based on the concept of humanism. It is believed that humans have value, prestige, efficiency and ability to think, speak and make by themselves. This is called self-reliance. If members in society can live with self-reliance, their society will be stable with happiness and peace. It is true that self-reliance development started from philosophy of people development.

Phinit Larbthananan (1985: 27) stated that Chinese scientist-James Yen who took refuge in Taiwan after 1949 revolution initiated the theory of self-reliance development to develop rural areas in Taiwan. He focused on mental value of old society and believed that human beings have inner potential to create but pressured by outside societies they, therefore, cannot show off their abilities. It is concluded that development is expression of potential.

Galtung (1981: 174-196) said that self-reliance is independence and interdependence. Independence means freedom with self-confidence, economic sufficiency and fearlessness. Interdependence means equivalence with great organizations that does not cause new plan of self-reliance.

Among Thai academic persons who defined self-reliance, Sanei Chamarik (1989: 71) regarded the concept of self-reliance as a strategy of development. He viewed that development started from agriculturalists' abilities, however they could not help themselves because of their chance of self development was blocked by natural economic, social, political, administration and cultural factors. He further expressed that rural development is not up-bottom operation, but is the way to encourage agriculture to understand their problems and find out the best way to solve them by using their own abilities.

Kanjana Kaewthep and Kanoksak Kaewthep (1987: 34) used social units as concepts to classify self-reliance into two features: Individual self-reliance and group self-reliance. The first one reflects all activities that are done by individuals and families in order to reach life insurance, while in the second feature self-reliance means society with system management provided so that people can help themselves by cooperating with others who are in the same situation.

Narong Phetprasert (1986: 113-114) defined communities' self-reliance through communities' economic dimension as the pattern of production. He clarified that there are two levels of communities self-reliance. For the first level, communities produce for their sufficient needs. For the second one, communities produce for their best self-reliance. They open their market and have relationship with other communities to exchange surplus productions.

Wichitwong Na Pomphet (1996: 1) stated that in the means of macro economics self-reliance means the balance of capacity of the following things: production and consumption, saving and investment, production value and exporting

and importing services. It is true that the countries with economic self-reliance produce as many goods and services as they need. They can keep balance of goods and services exchange with outside world and can invest to expand production power with local saving money and resources.

Aphichard Thongyod, ed al. (1988: 109) classified boundary of self-reliance into two features : physical and cultural self-reliance. The first one focuses on economic, administrative self-reliance that produces for only consumption while the second one means belief, wisdom and decision making power

#### **2.4.2 The Elements of Community's Self-Reliance**

The Research Institute of Science and Technology, Thailand (1995: 4 – 5) conducted the research project on economic self-reliance in rural area. From this research it has been found that self-reliance of community consists of five terms:

1. Technology: This technology may include local housewhole instruments and new technology one that are suitable for community.
2. Economic: Economic term must be economic system with continuous development. Community has potential to compare with outside world are is able to save, invest, gather for production and marketing and sets a future plan.
3. Resource: Community can utilize the balance of ecological system.
4. Mental: Community has self-reliance consciousness, knowledge and ability, quality. The members in community are religious and diligent.
5. Social: Community is good leader, responsible participant and strong social organization.

There are three procedures to develop capacity of community:

1. Balance of technology, economy, natural resources, mind and cultural society.
2. Ability to analyze, plan and manage community's system.
3. Net-working of community and network organizations.

Yot Santisombat (1999: 129) said that the conditions of potential self-reliance consist of four components: know how to apply local wisdom to modern knowledge, set up participation in making decision and managing community's resources, budget in the form of cooperative or bank to make communities' business, and strength of community's organization without interference of government organizations. And Yot Santisombat (1999: 130) explained further that the main obstacles to block community's potential of self-reliance are four fields of government policy: economy that focuses on industry and ignores agriculture, natural resources management, tax structure and education.

#### **2.4.3 Mechanism of Self-Reliance Procedure**

For the success of this procedure, Dudley Seers (quoted in Pakorn Priyakorn, 1983) expressed the concept of development based on community's self-reliance in the following features:

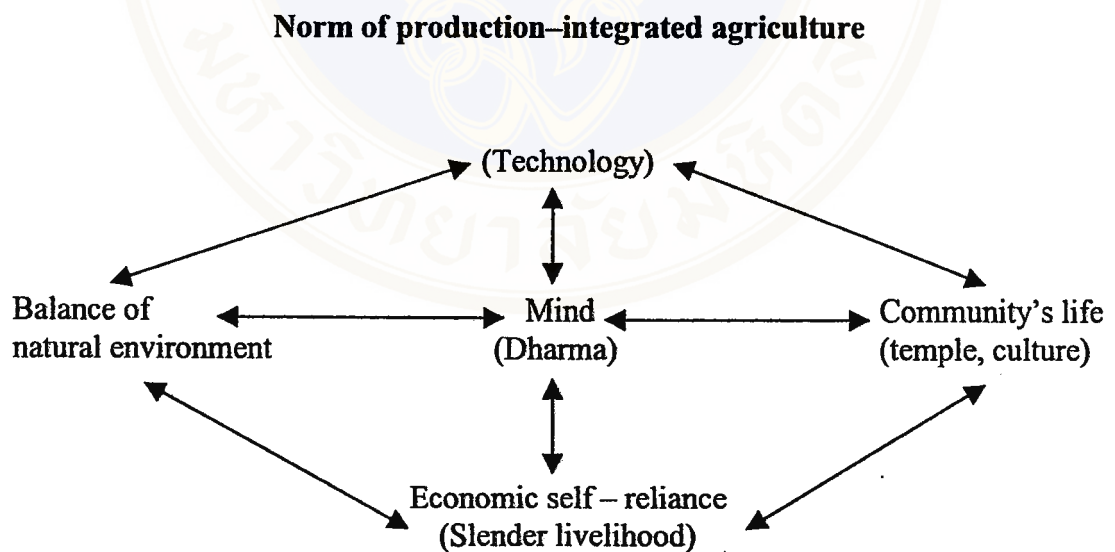
1. Reduce the import of necessary goods and services and decrease helps from foreign professionals.
2. Change the form and style of consumption and increase production ability.
3. Set policy to change the way of life of high income people by using tax policy, price policy, persuasion and so on.
4. In some countries, government may use controlling and possessive policy about natural resources management.
5. Cultural policy to reduce cultural dependence.

Prawet Wasi (1987: 33–35) proposed the concept of the important components of community development and satisfied society. These components are called five aggregates of community:

1. Religious mind
2. Norm of production
3. Balance of natural environment
4. Economic self - reliance
5. Life of community and culture

The relationship of these five components can be clarified in the form of

figure: 1

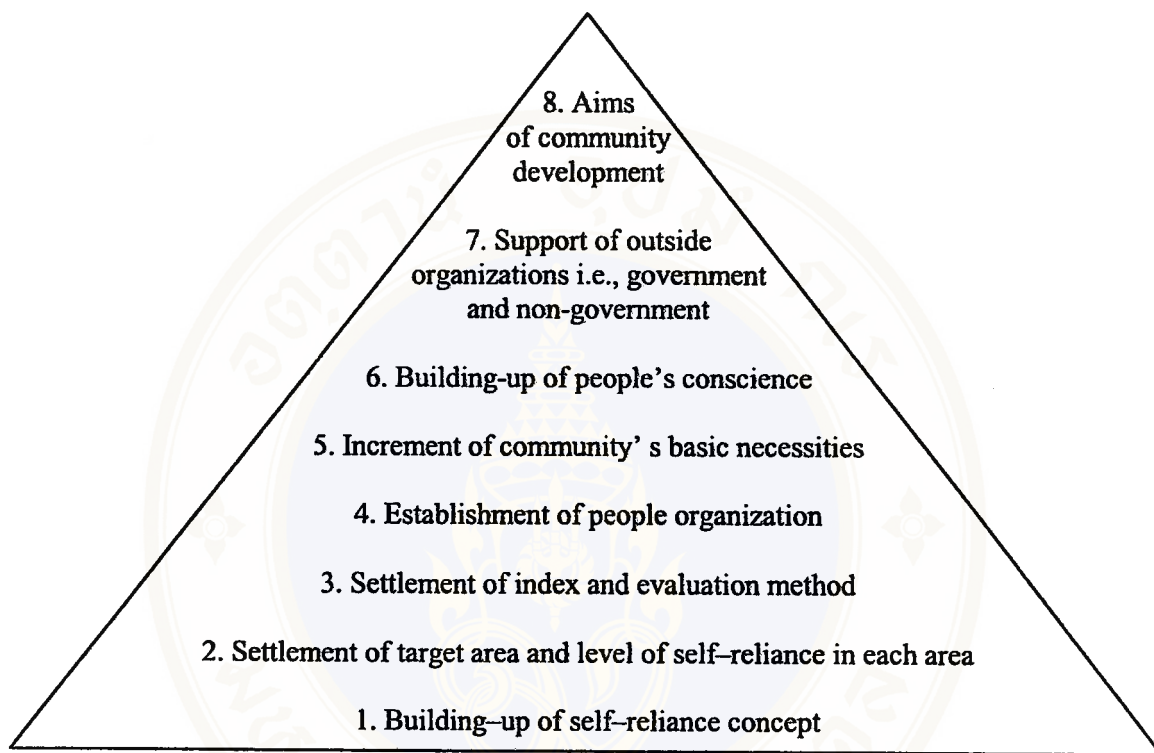


**Figure 1 :** The relationship among five components of community for economic self-reliance

Thawin Kanchanaphiseit (1995: 25–34) presented the concept of procedure of aggressive strategy for the purpose of communities self-reliance and proposed two factors :

1. Internal factor: This factor creates up communities' ability by encouraging them to gather as strong organizations. It also provides basic needs to communities and cultivates their self-reliance conscience.

2. External Factor: Communities are supported by both government and non-government organizations to increase communities' potential. And there are eight steps of communities procedure as shown in figure 2



**Figure 2 :** The procedure of aggressive strategy for self-reliance of community

#### **2.4.4 Measurement of Community's Self - Reliance**

The National Research Council of Thailand set up the measurement of self-reliance by considering the factors of needs and needs response, that is, if community cannot response to their needs, it cannot help themselves. If it can do, its self-reliance would be possible. Development for self-reliance is self-knowledge to solve their problems and to increase their potential and capacity.

Supanni Chaiamporn (1996: 23) stated that individual self-reliance is the most important because self-reliance of all sectors will be possible when individuals try to help themselves. If everyone in society knows how to help oneself, this will bring to self-help in all levels. Measurement of individual self-reliance consists of three factors :

1. Economic capacity can be measured from four basic necessities, balance between income and expenditure, increment of production and utilization of resources.

2. Psychologically self-reliance spirit can be measured from ability to consider self-done effect, self-confidence, responsibility and creation to work together.

3. Political capacity is measured from information knowledge, participation and capacity in solving life problems.

From review of the relevant literature, it is concluded that the concept of self-reliance development of community is regarded as community-based development approach to strengthen communities in all dimensions i.e., economic, political and cultural respectively.

## **2.5 The Concept of New Theory and Sufficiency Economy**

From philosophy and concept of sustainable country development in the stream of new world, a theory of development “sufficiency economy and new theory” initiated by His Majesty the King is an alternative approach that is very suitable and invaluable for Thai society to build up participations and reduce confliction of all sectors in society.

### **2.5.1 Sufficiency Economy as Thai King’s Conception**

On 4 December 1997 His Majesty the King conferred invaluable conception to Thai subjects on sufficiency economy that is suitable for Thai life at present. This conception can be concluded as below:

Sufficiency economy is moderate living. Communities can produce what they need for their life.

From this concept the main point is focused on community’s people development in economic and social aspects in accordance with community’s cultural preservation. People development starts from thought development to learn how to live economically. However, in order to strengthen community organizations, community development should be considered as alternative to develop stable system of country’s economy, politics and society.

### **2.5.2 New Theory as Foundation of Sufficiency Economy**

His Majesty the King found the theory called “New Theory” because of the following reasons:

1. A small plot of land is clearly managed and divided distinctively for the utmost benefit of agriculturists.

2. Quantity of water is academically calculated to be sufficiently preserved for the utmost benefit of agriculturists.

3. Three steps of perfect plan for small agriculturists will be set up :

1) The first step

Residence area and area for agriculture are divided into 4 parts in the ratios of 30 : 30 : 30 : 10. This is regarded as a system of sufficient economic production.

2) The second step

Agriculturalists join hands together as a group or cooperative to help each other proceed the following issues i.e.; production, marketing, livelihood, welfare expenses, education, sociality and religion.

3) The third step

It is a kind of organizations with outside organizations such as banks and private sectors to ask their helps in the matters of budget and investment.

From above explanations it has been found that the first step of new theory causes sufficiency economy in family level, while the second step in community level and the third one in country level respectively. Thai King's conception of this theory puts the importance on development of attitude and the way of living of people in society for the purpose of great organizations among people in community. They should help each other in developing livelihood and social welfare to strengthen community and get ready for the great competition. This theory also focuses on development participation of government, foundation, non-government and business with different weak and strong points. If all these sectors can cooperate and help each other. The success of development activities will be reached as expected.

### **2.5.3 Contribution of New Theory**

The followings are contributions of new theory to agriculturalists and country:

- 1) According to this theory agriculturalists will be integrated, that is, cultivation and raise livestock's are mingled. And the main production is food for living. So it is alternative to release affects from economic crisis in country because of world economic change.
- 2) This theory is a strategy of new development plan to solve basic problems of small poor agriculturalists in Thailand.
- 3) This new theory is the first step to lead Thailand into sustainable development strategy because integrated agriculture is proceeded for the utmost efficiency of people at present time without destruction of opportunity to utilize resources of next generation.

### **2.5.4 Great Dimension of Concept of New Theory**

New theory of HM the king is a principle and new method with nine great dimensions of concept as below (Chai-anan Samutthawanit, Education Ministry, 2000: 170 – 171):

- 1) This theory goes beyond the western concept that has influenced Thai society and the other societies for a long time.
- 2) This theory goes beyond dialectical concept. It accepts living together of different things, for example, self-reliance agriculture can exist with industrial production or high technology industry without changing from self-reliance agriculture into other forms of production.
- 3) It is not just only theory, but also practical one with steps of practice from basis to advance.
- 4) It is not complicated theory but easy one to understand and can be brought into practice by people.
- 5) This theory is concluded from Thai experiences, environment, weather, change of seasons life way and economic status, etc. by putting importance on water.

6) This theory is introduced in the proper time to advise important figures who pay key roles to administrate and proceed policy and development plan.

7) This theory implies the philosophy of living and nation protection. It is not economic theory but holistic one to promote ethics and enough subsistence.

8) It is powerful theory to motivate the poor to fight with their plight and live happily with contentedness.

9) This theory is free from politics and profit but based on loving – kindness and ethics, It is the relationship between humans and nature without destruction each other.

This new theory , therefore, can be concluded into nine elements called The Enneagram of His Majesty's New Theory i.e., multiple, co – existing, thinking – doing, simple, integration, timely, holistic, inspiring and universal.

## 2.6 The Concept of Five-Party Organizations

For the last thirty-five years industrial sectors have been grown that affect the growth of city, white rural areas, the resources of forest, water, minerals and labor are utilized as low capital by big cities. Because of this there is no balance between cities and rural areas in the form of income, life condition and life quality. Rural people move to cities. This causes city slum and various problems.

One cause of these problems is motivated by Thai government policy on capitalism as development strategy. This strategy is inclined towards philosophy of free economic system or opened development strategy called “strategy of globalization development”. It seeks profit from globalization without intention on environment problem and other effects. In order to decrease this crisis the alternative called “people strategy” is proposed. This strategy is not part of capitalism or socialism but based on community system. (Thianchai Wongchaisuwan, 1996: 34–35)

The followings are strategies to link up general principles of globalization and people strategies:

1. Objectives of people development are specified.
2. Natural resources and environment preservation as part of sustainable development is focused.
3. Participatory democracy and decentralization to strengthen community organizations are promoted.
4. People government is built-up to connect state with people.
5. Harmonious society called five parties organizations i.e., community, government, academic, non-government and business organization is established.

From this concept, it has been found that development strategy puts importance on community by encouraging people in various communities, who have the same objections and ideals, to form organization in order to help solve their problems and develop economics, mind sociality, culture and environment. Community organizations should have free hands and efficiency to direct their future for balanced and sustainable development. They are also linked up with different supporters i.e., government organization, non-government organization, business organization, community organization and academic organization to strengthen communities. This is a good start of development process to increase people's

potential to get ready for life development and quality (Office of the National Economic and Social Development Board, 1996: 13).

The concept of five -party organizations is regarded as interactive learning through action with powerful and meaningful objectives and visions of society and future (Anuchart Phuangsamli,1996). Five parties i.e., communities, non-government, business government and academic must cooperate and learn from each other in order to achieve life quality of people in society. All these five parties have their own strong and weak points. They can remedy their weak points with their strength to help each other, For example, non-government organizations understand well culture of working with people, academic are capable to analyze and research people's problems and needs, business have power of management and provide efficient resource services.

This five-party organizations is sometimes called "multiple organizations" because in some real situations of working, numerous parties are needed.

In this study a researcher has focused on five parties organizations as a case study : government organizations, non-government organizations, business organizations, academic organizations and community organizations.

## **2.7 The Relevant Research Works**

From the relevant research works and theses on learning networks of natural resources and environmental management, the results of this study can be concluded as follows.

Korbkarn Photchanachai (1993: Abstract) conducted a research on "Learning Network and Community Management of Community Forest". From this study it had been found that the levels of villages learning network is divided into four. The first level is individual learning network. It is network of family and kinship system headed by village headman. The second level is groups' learning network that is classified according to villages and occupation groups. They always contact and talk to each other in their groups. The third level is communities to communities learning network in Tambol. These communities contact and exchange their regulations to protect forest. The fourth level is institutions learning network by which two institutions i.e., religious and educational institutions are given important roles. Communities join hands with temples and schools, talk to each other and proceed same activities to cultivate conscience of forest preservation.

Chomchuan Bunrahong (1994: Abstract) carried out a research on "Network of an Alternative Marketing in the Upper Northern Part of Thailand". The outcome had been concluded that agriculturalists thought that agriculture by focusing on selling production needs to be based on capital goods, technology and unfamiliar information. This causes numerous problems. In order to solve these problems agriculturalists as consumers gather as small groups with 15 members and connect to each other as horizontal organization network with equal right and freedom. This

causes the process of alternative marketing with formal and informal activities. It focuses on multiple concepts and performance of members in groups.

Choochart Liamwanit (1994: Abstract) conducted a research on "Learning Network and Health Care of People in Village Communities". The results had been found that this network started from family and kinship and expanded to neighbors in or out of communities. For a case of general health care network of people will be proceeding as usual. However, learning network in taking care of serious ailing is knowledge inheritance from local doctor in and out of communities. At present learning network of local doctors is limited since young generations ignore and are not keen to learn because it takes time to be professional local doctors and is not supported by government to promote local wisdom. The most important conditions and effects to cause villagers' learning network are the relationships between individuals and communities, that is, relationships of family, kinship and neighbors, the time of individuals, frequency of meeting, exchange and dependence on each other.

Prayad Chaturapornphithakkul (1995: Abstract) did a research on "Learning Network about Agricultural System as an Alternative of Communities through Qualitative Research: A Case Study at Community of Panot Village, Tambol Maetha, King-Amphoe Mae-on, Chiangmai." From the results of this study, it had been found that learning network has relationship with four components in community i.e., object of knowledge, chief network of knowledge, organizations who provide learning management and process of learning transmission. This network depends on direct and indirect conditions. Direct condition or direct learning condition is complex social relationship of individual, frequency and continuation of meeting, time of meeting, knowledge information to exchange equality and sincerity. Indirect conditions is social relationship of community, problems solution, local culture, strength of community organizations and network, capacity of chief network and leaders development of transportation and mass communication, local and national democratic politics, good support from outside organizations.

Pan Kimpee (2000: Abstract) conducted a research on "Development of Learning Network of Non-Formal Education for Self-Reliance of Communities". From the outcome it had been found that learning network has developed from problems realization and economic needs of communities. The distinctive features of this network are: communities have the leaders, communities' social network is used as center in communities, communities' connections to outside organizations are supported to motivate learning process and continuous participation of communities. The factors of successful learning network of non-formal education are external and internal sectors. External sectors are campaign of new concept about development and of state continuous and important policy on communities' self-reliance, organizations and support from relevant outside organizations. Internal sectors are communities' problems realization, capable leaders of communities to set up learning process of groups, management of suitable activities to solve communities' problems, capacity to cooperate with network organizations by focusing on learning process of self-reliance.

Wimolluck Chuchart (1997: 193 – 205) carried out a research on “Presentation of Processes of Learning Network Establishment for Forest Resource Preservation”. From this study it had been found that the main components of learning network are humans, knowledge and resources. The potential of learning network depends on leaders who can link up old and new knowledge about forest and encourage communities to protect and preserve forest. The process of learning network has been developed from individual network and group network respectively. This process starts from building-up leadership to solve communities’ problems and to strengthen communities’ organizations. It also encourages members of network to join learning activities, to develop their potential and to expand their learning network.

From research and development project on “Learning Network for People Education: A Case Study in the South”. (quoted in Samart Chantharason and Pratheep Insaeng, 1998 : 42 – 43), It had been found that learning process of villagers results from horizontal relationship. Selection of local wisdom transmitter affects local wisdom transmission. For the objects of knowledge, it has been found that process and villagers’ learning network in the past and at present were taken from other communities and adapted until these became communities’ object of knowledge. There are numerous methods to transmit local wisdom and to set up network of local wisemen. Dependence on each other is the main pillar to administrate and manage organizations without contents, activities, areas, religious and cultural boundaries.

## 2.8 Conceptual Framework of Research

From above concepts, theories and relevant research works, the conceptual framework of research on a study of learning network of resources and environmental management for self – reliance can be concluded as below:

**2.8.1 Conceptual Framework of Sustainable Development:** Rio Declaration on Environment and Development (Michael Keating, 1993: Preface) proposed the important content that the progress of world economics and equilibrium of ecological system, environment and natural resources in the long run depends on promotion of holistic development, that is, economics, sociality and environment must be developed in parallel. This holistic development will occur if there is connection as network to build-up combined learning. Therefore the researcher has taken the concept of learning network as basic concept to conduct this research.

**2.8.2 Conceptual Framework of Self-Reliance Development:** This concept focuses on development in all dimensions, that is , economic, social, cultural, administrative and environment. It is self-reliance development that consists of five terms, and one term out of five is natural resource and environment (Thailand Institute of Scientific and Technological Research, 1995: 4 – 5). In order to use this term as self-reliance development, it is necessary to establish working network of combined learning, so that communities will have power to manage and establish balance of their self-reliance.

**2.8.3 Conceptual Framework of New Theory and Sufficiency Economy:**

This new theory and sufficiency economy focus on holistic development in all dimensions i.e., economic, social, cultural, environment and administrative by which people can help themselves with sufficient living (first step). People exchange and help each other to become community and community organization (second step). Community has connection with outside organizations to cooperate and learn from each other (third step).

**2.8.4 Conceptual Framework of Learning Network :** This concept is community-based development approach by which people can take part in self-reliance development. People can think, analyze, find out the way to solve problems, try to practice, conclude and evaluate their performance, therefore, learning network is the main point to develop communities for the purpose of self-reliance. It can strengthen communities in all dimensions i.e., economic, political, administrative, social, cultural and environment.

**2.8.5 Conceptual Framework of Natural Resources and Environment Management:** In order to achieve the goal of efficient environment and natural resources preservation and acceptance from environment preservers, natural resources and environment management must be carried out with laws and regulations, administration and project. In this study the researcher has studied management in three dimensions i.e., policy management, administrative management and practical management.

**2.8.6 Conceptual Framework of Five-Party Organizations:** This concept focuses on brainstorm and organizations of people from all sectors in society to set plans, examine and solve problems together. This causes powerful learning process that leads to development in the future. All organization are communities, academics, non-government business and government organizations (Prawet Wasi, 1992; Anuchart Phuangsamli, 1996). In this study the researcher applied five-party organizations by focusing on numerous organizations in society i.e., government organizations, non-government organizations, business organizations, academic organizations and community organizations.

## **CHAPTER III RESEARCH METHODOLOGY**

The research's objective was to look at the study of learning networks of resource and environmental management for self-reliance. This study is, therefore, looking to understand social phenomenon by using qualitative research method as applied science to proceed research in real areas which have implemented learning networks of research and environmental management for self-reliance and other fields. It was successful and acceptable as a case study that helps us understand the process of historic education, the basis for choosing areas and communities and points, problems and objective of the study (Benja Yoddamnoen-Adtik, editors, 1988: 112). Besides that it was a study that helps us understand the truth occurring in society, that is, it was a study of learning network of resource and environmental management which has been implemented in a period of time. This procedure was accepted by related external people and organizations. The result of this study gives us real information which can be used as a proper way to develop communities and societies in the future.

In doing this research, the researcher delimited the steps of study as follows :

### **3.1 Study from Textbooks and Related Research**

The researcher studied document, textbooks, research works, thesis and other related works. The researcher also joined meeting and seminar related to the topics and issues: qualitative research, learning networks of resource and environmental management and creation of community strength etc. The researcher then took this knowledge from the aforementioned methods and processes and compiled it into the conceptual framework of research.

### **3.2 Criteria for Site Selection to be Case Study**

#### **3.2.1 Guidelines for Choosing a Case Study**

In choosing a case study which would be successful for the learning networks of research and environmental management for self-reliance, the researcher created the following guidelines for choosing community organization as a case study.

**Table 1 : Criteria for choosing organizations of learning networks of resource and environmental management for self-reliance.**

Area	Choice Guidelines of Learning Networks
<b>Organization of learning networks for self-reliance</b>	It is community organization which is joined and learned together with five-party organizations (government, non-government, business, academic and community) to implement policy, administration and practice relating to utilization of resource and environment. It expands clear and continuous network to solve community problems and develop the community.
<b>The goals of organization of learning networks for self-reliance</b>	Its goals are to develop knowledge for solving problems and developing community for self-reliance with successful management of resource and environment.
<b>Activities in management of resource and environment</b>	Activities are integrated to manage resource and environment and to develop community for self-reliance.
<b>Self - reliance</b>	Community organization has clear goals to strengthen community under the patronage of Social Investment Fund (SIF).

### 3.2.2 Choosing a Case Study

1. The researcher received a list of community organization under support of SIF for the development of experience and network management for self-reliance which have been assessed according to the mentioned choice guidelines. The ten organizations are :

- 1) Agriculturalists' Society for the Development of Agriculture in Nakhonsawan
- 2) Sakhree Community
- 3) Mairiang Community Development and Study Center
- 4) Truth and Asset Collection Group in Chanthaburi
- 5) The Committee of Community Forest Network in Ten Villages
- 6) Srisa - Asok Village
- 7) Herbalist and Herbal Medicine Group in Kudchum district
- 8) Demonstrative Community Conservation Group for Production and Development of Continuity
- 9) Phoophafanarm Community Council
- 10) Thungchang Lover Group

2. From the list of ten organizations received, the researcher decided on a community study group using purposive sampling to measure organizations, convenience, and safety of the study. As a result, researcher chose Mairiang Community Development and study Center to be a case study by reasons as follows:

Mairiang Community Development and Study Center is a good example of community organization that reflects development of learning network with concrete, clear and accepted management of resource and environment for self-reliance. Development in form of proceeding plan of community development was



carried out in five main ways: education, sustainable agriculture and environment, community public health, community business and industry and community fund in which each way has direct or indirect link with management to preserve environment and natural resource. This is body of knowledge and learning process with aim of integrated self-reliance of all aspects of community. Mairiang Community Development and Study Center is a good example of community organization that developed strategy of concrete self administration for self-reliance. At present this center becomes an example of pilot community where villagers set plan of community development and determine community direction by themselves. This center proceeds systematic, complete and concrete management of natural resource and environment that is based on sustainable management and balance of environment and network resource, with support from and cooperation with other organizations (five – party organizations) in the form of learning networks of resource and environmental management. This center also expands learning networks to other areas and communities in different regions and becomes the learning center in the form of both cooperation and spread of concept of self-reliance in resource and environmental management in accordance with the principle for sufficiency economy under the context of Thai society at present.

### 3.3 Methodology of Research

The researcher used documentary research at first in order to get a clear understanding of the basic data and overall picture of a case study. After that, the researcher used qualitative research, which brought in true facts and figures in order to get true data and answer of research. The researcher used several qualitative research methods, including in-depth interview, participation observation, non – participation observation, group interview, focus group and other methods. These were all used to get the truth of study and to reduce the space between the researcher and the target groups, so that the researcher and the target groups will facilitate real communication as if the researcher was an insider. This made the information collection and opinion sharing peaceful and easy while doing research. The basic methods used for this research are:

#### 3.3.1 In-Depth Interview:

The research used this method with key informants. In choosing the informants, the researcher used the criteria that the informants should be directly involved and important in the creation and implementation of learning networks. For these in-depth interviews, the researcher classified them according to Suphang Chanthawanit (1996: 82 – 84). These four classifications are: pre-interview, interview, interview recording and post-interview.

#### 3.3.2 Informal Interview :

The researcher used instructed questions and made the interview as easy as possible without formality or officiality, neither strictness in the steps and questions leveling. It did not, however, cause the researcher to lose interesting and important study data.

### 3.3.3 Non – Participation Observation :

The researcher used this method with posted activities of learning networks for example ; board information, result of implementation and project procedure etc.

### 3.3.4 Focus Group :

The researcher used group dynamic to encourage the member to express their opinions and feelings in an open forum. The opinion of one member of the group could cause others to speak in turn, want to voice their opinions, share their own views and experience about learning, learning transmission and learning networks of resource and environmental management for self-reliance. This tool was used after in-depth interview, group interview and observation to bring further information to group discussion.

## 3.4 Sample Group of Research

Because the study group used as a case study varied in several dimensions of resource management, the researcher therefore set a sample group for the baseline data used in the study with a specific method as detailed below :

### 3.4.1 Mairiang Community Development and Study Center

- a president of Mairiang Community Development and Study Center  
(1 person)
- a secretary of Mairiang Community Development and Study Center  
organization (1 person)
- board members Mairiang Community Development and Study Center  
(5 persons)
- members of Mairiang Community Leaders Council (15 persons)
- members of Mairiang Community Development and Study Center  
(10 persons)

### 3.4.2 Mairiang Community

- mayor (1 person)
- vice – Mayor (1 person)
- village chief (1 person)
- sub – village chiefs (8 persons)
- village seniors (5 persons)
- sub-district administration organization chief (1 person)

### 3.4.3 Five–Party Organizations which of Resource and Environmental Management for Self–Reliance.

- officials, individuals involved in government organization  
(11 persons)

- officials, individuals involved in non-government organization (5 persons)
- officials, individuals involved in business organization (2 persons)
- officials, individuals involved in academic organization (5 persons)
- officials, individuals involved in community organization (5 persons)

#### **3.4.4 People who Live in Mairiang Community (8 persons)**

### **3.5 Research Instruments**

The following various instruments of research were used :

1. Guideline for in-depth interview
2. Guideline for group interview
3. Guideline for focus group
4. Guideline for informal interviews
5. Observation form

### **3.6 Data Collection**

The researcher collected data in the field by using several methods from various groups in order to get correct and believable information which can be classified as follows :

3.6.1 The researcher entered the area to survey data of community used as a case study and then coordinated with the president or board of that group to announce the aims and methods of the study and request permission for the study.

3.6.2 The researcher took official documentation from Mahidol University to the province, districts, sub – districts, villages and community organization to introduce goals of the study.

3.6.3 The researcher went into the field to collect data and built a good rapport with the community by introducing as a student. The researcher would be staying in community and collecting my own data in the field. If that data was not sufficient, clear or consistent, the researcher might return for additional data.

### **3.7 Examination of Data**

When the data had been collected as mentioned before, in order to collectly analyze the data, the researcher examined the collected data for completeness and consistency of research objectives. The researcher also examined the data under every critical point by using Denzin's triangulation data examination method (John P. Keeves, 1988: 512):

#### **3.7.1 Data Triangulation**

The researcher inspected the collected data that consisted of time, place and person. The researcher also looked at the data in various time, in various places

and by various people whether it was the same data or not. If the information is the same or repeated, the researcher held the data as trusted, true data and then recorded it.

### **3.7.2 Methodological Triangulation**

The researcher used both participation observation and non-participation observation in all activities. questions, interviews, group conversation and documentary study were also used.

### **3.7.3 Investigation Triangulation**

This is the examination of field data by which the researcher had people from the center of community study check the data with the researcher every step of the study.

Besides examination of the data by these three triangulation methods, the researcher would examine the data once more, after which analyzing and of synthesizing the data into research report form. The researcher then submitted the draft research report to leader of Mairiang Community Development and Study Center by asking for opinions and suggestions. After that the researcher took these opinions to modified them for completeness and truth as long as they were within the goals set forth.

## **3.8 Data Analysis**

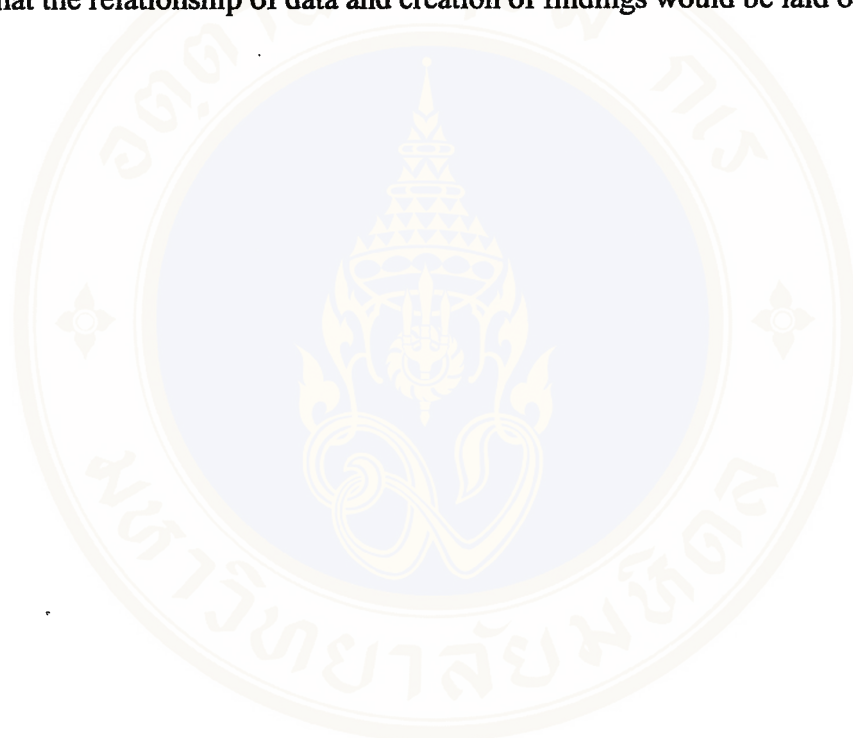
The researcher analyzed the data for the study by dividing the data into various points which have been laid out, by using documentary information, in-depth interviews, participation observation, non – participation observation, focus group, informal interviews, group interview and others. After that the data was brought into the analysis process by systematizing and looking for sets and groups of data which were related.

For analyzing data, the researcher brought in an analysis method for summarizing the conclusion, by using typological analysis which was not theory proposed by Supang Chanthawanit (1996: 136 – 137). The data to be analyzed was separated according to its appropriateness by using the knowledge and experience of the researcher to assist, combined with the suggestions of the community sages. The separations are simple and performed before deciding on correlation of data. The relationship of data was described by using analytic induction which will interpret and conclude the form and phenomena received. From there a unified analysis was performed by using constant comparison and looking the relationship of each group according to comparisons as below:

1. Compare various incidents from the filed data, dividing it into various categories and amending as set forward.

2. Compile the types and properties of the data as collection of findings and minor conclusions received from compared events in the field by pointing to inter and intra-variables of the data laid out.

3. Broaden the comparison and choose an important key cause by choosing among the various causes which occurred in the community which were not related to the variables laid out. This will help get abstract findings and find what is the key or most and lest important point to this study. The different data was cut out and the related data which was meaningful to learning development of network was kept. After that the relationship of data and creation of findings would be laid out.



## **CHAPTER IV RESULTS**

This research studied learning networks of resource and environmental management for self-reliance of Mairiang Community Development and Study Center located in Mairiang sub-district, Chawang district of Nakhon Si Thammarat province. The main purposes were to study contextual database of Mairiang community, development of each period and factors affected the occurrence of the center. The study also features of resource and environmental management learning process and participation on and environmental management of the center by the five-party organizations. The research will be applied for the policy formulation of natural resource and environmental management (technical implementation and operation) of organizations and agencies concerned in accordance with national development plan.

In this chapter, The researcher presented the details as follows:

4.1 Contextual database of the community comprised general characteristics, infrastructure, population, natural resource and environment, economy, society and culture.

4.2 The developmental period of Mairiang Community Development and Study Center information and factors related to the developments were described.

4.3 The detail of resource and environmental management for self-reliance of Mairiang Community was presented into and four study center parts:

Part 1 Policy, administration and practice of resource and environmental management for self-reliance of Mairiang Community Development and Study Center

Part 2 Activities group of resource and environmental management for self-reliance of Mairiang Community Development and Study Center

Part 3 Learning process in resource and environmental management for self-reliance of Mairiang Community Development and Study Center

Part 4 Five-party organizations that take part in resource and environmental management for self-reliance with Mairiang Community Development and Study Center

### **4.1 The Context of Mairiang Community**

#### **4.1.1 General Characteristics of the Community**

Mairiang is one of ten sub-districts under the governing of Chawang district, Nakhon Si Thammarat province. Mairiang is located in the north of the district (5 kilometers from the district office and 80 kilometers from the provincial office) with 43 square kilometers. (approximately 22,220 rai)

The sub-district of Mairiang location

North connected to Kabiad sub-district

South connected to Nakacha and Chawang sub-district

East connected to Nawae and Chawang sub-district

West connected to Nakacha and Klong Se sub-district

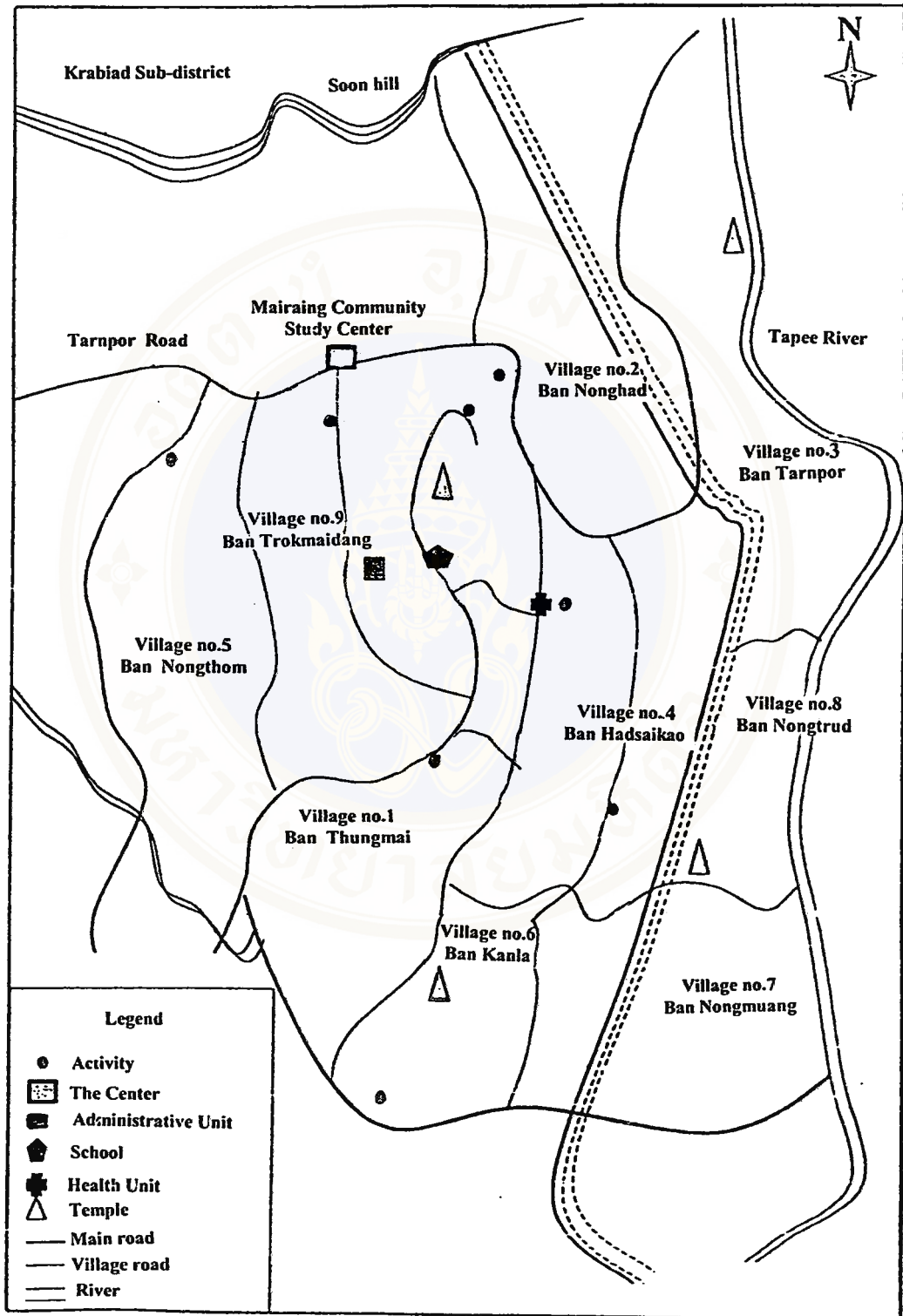


Figure 3 : Map of Mairiang Sub-district, Chawang District, Nakhon Si Thammarat



### 1) Landscape

Mairiang sub-district is located on the northern plateau of the district with 100 to 300 meters over the mean sea level (Soon plateau) and inclining down to the middle and the south of the sub-district with 30 to 40 meters over the mean sea level down to the Tapee River Basin. The landscape is suitable for growing nice, rubber plantation, orchard and other farmings.

### 2) Climate

Mairiang sub-district is influenced by monsoon so there are two seasons, hot with humidity and rain. Hot season starts from February to April which rain season starts from May to January (during May to October the area is influenced by south-western monsoon and during November to January the area is influenced by Northeastern monsoon)

Under the conditions mentioned above caused the area of Mairiang sub-district to have average amount of rain in hot season at 257.1 millimeters with the average temperature of 29.15 celsius while average amount of rain during May to January at 920.6 millimeters with the average temperature of 27.88 celsius.

### 3) Transportation

There are two main ways to communicate and transport in Mairiang sub-district: by car and by train. Many routes of roads are connected to every village with all types of roads; concrete, asphalt and lump laterite roads (concrete roads with 12,130 kilometers long, two asphalt roads with 12 kilometers in length and lump laterite roads with 36 kilometers long)

### 4) Background

Being deeply reviewed from the documents and interview of community seniors, the researcher found that Mairiang sub-district was established by local governing Act in 1798 during the reign of King Rama V \*

The ancient name of Mairiang sub-district (about 100 years ago) was "Toong Dok Mai" (Flower Field) since the area was covered by natural flowers. The flower field was burnt in the hot season and naturally grew when the rain season came from year to year. The groves were cut away and replaced by rice field when the villagers came to settle down. The name "Toong Dok Mai" was changed to "Toong Fai Mai" (Burnt field) and deviated to "Ban Toong Mai" later.

In 1897, King Rama V decentralized the system of administration to regional and local areas. The governing local area units were categorized into village, sub-district, district and province. When the number of people increased and became a large community with four to five villages,\*\* the community then was upgraded to the status of sub-district named "Tambon Mairiang". They named the sub-district "Mairiang" because of the natural growth in line of trees along the hill. (Tuan Meesai, interviewer; Wong Somnuk, interviewer; Haong Silathep, interviewer)

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\* District database in mola model Volume 2 Chawang District Office, Nakhon Si Thammarat Province dated October 30,1998

\*\* The conclusion of lesson learned by Mairiang Community Development and Study Center (2) described that the expansion, and growth of Mairiang Community owing to both internal and external factors. Internal factor was the spitting of big families and external factor comprised the immigration of people from neighboring communities and the transformation of environment due to: the forest concession in the community area and the construction of southern route railways

With its potential of having plentiful natural resources and qualified people, Mairiang sub-district was continuously developed with sustainability and stability by the co-operation among public and private agencies (Mairiang Community Development and Study Center, 2001: 5)

#### **4.1.2 Infrastructure of the Community**

As the community was established for a hundred years, Mairiang sub-district is a large ancient community with complete infrastructure.

##### **1) Public health**

There are two health care units for primary health care; Tam Por Health Care Unit located in village number eight of the sub-district led by Mrs.Arune Senathipbodee and two community health officials, Mrs. Patraporn Jina and Mr.Watcharachai Carl, another unit located in village number five led by Mr.Nipon Ratanakod

##### **2) Education**

Six public schools were established to serve the children of ten villages in the sub-district.

(1) Wat Mairiang School located in village number one: The school is under supervision of National Primary Education Commission led by Mr.Songwut Jornjarat as a school director. The school offers compulsory education, kindergarten level one to primary education level six. The total enrollments are three hundred and seven and ten teachers are assigned to teach twelve classes. (Wat Mairiang School's profile, copied document, 2001)

(2) Ban Nong Tom located in village number 5: The school is under supervision of National Primary Education Commission led by Mr.Amnach Jitsuparp. Five teaches teach forty two students in eight classrooms ranged from kindergarten level one to primary education level 6 (Ban Nong Tom School's profile, copied document, 2001)

(3) Ban Kanla School located in village number one: The school is under supervision of National Primary Education Commission led by Mr.Suchin Siri as a school director. The school offers compulsory education from kindergarten level one to primary education level six. Seven teachers teach sixty-three students in eight classrooms. (Ban Kanla School's profile, copied document, 2001)

(4) Wat Haad Soong School located in village number three : The school is under supervision of the National Primary Education Commission led by Mr.Songwut Petchrawut as a school director. The school offers compulsory education from kindergarten level one to primary education level six. Twenty teachers teach three hundred-forty students in fourteen classrooms. (Wat Haad Soong School's profile, copied document, 2001)

(5) Mairiang Prachasan School located in village number one : The school is supervised by the Department of General Education led by Mr.Wattana Lachroach as a school director. The school offers secondary education from secondary education level one to level four. Thirteen teachers teach hundred students in eight classrooms. (Mairiang Prachasan School's profile, copied document, 2001)

(6) Haad Sai Kaew School located in village number four : The school is supervised by the National Primary Education Commission led by

Mr.Boonyeun Intabutra as a school director. The school offers compulsory education from primary education level one to level six. Five teachers teach thirty-nine students in six classrooms. (Haad Sai Kaew School's profile, copied document , 2001)

There are three private schools under supervision of Private Education Commission in the sub-district;

1) Chareonmitr Kindergarten School located in village number eight: The school offers courses for kindergarten children.

2) Chareonmitr School located in village number eight: The school offers both primary education and secondary education.

3) Chareonmitr Commercial School located in village number eight: The school offers vocational education.

### **3) Religion**

All of the people in Mairiang sub-district are Buddhist and practice their religion ceremony at the two temples and one monasterial residence: Wat Mairiang of village number one, Wat Haad Soong of village number three and Pacha Pak Larm Monasterial residence in village number three.

### **4) Governing**

There are ten villages in the sub-district. A village headman is responsible for each village except village number three and number eight which are supervised by sub-district municipality.

Names of village headmen are as below:

Village number 1	Mr.Komon Raksonmeun
Village number 2	Mr.Somporn Sanupong
Village number 3	(under sub-district municipality)
Village number 4	Mr.Chanin Tanakarn
Village number 5	Mr.Waipot Tanakarn
Village number 6	Mr.Pradit Khuntong
Village number 7	Mr.Sompong La-or
Village number 8	(under sub-district municipality)
Village number 9	Mr.Sayan Tipsuwan
Village number 10	Mr.Tawee Prommontree

From the first establishment of the sub-district, Mairiang has got 7 village-chiefs. Mr.Somporn Sanupong is in charge of the position at present.

There are two local administration units : Mairiang Sub-district Administration Unit located in village number five led by Mrs.Surangrat Chaichana as a deputy and Mairiang Sub-district Municipality located in village number three led by Mr.Chaisri Meepattana as a lord mayor.

#### **4.1.3 Population**

There are 1,593 household and 7,697 people : 3714 males and 3,983 females. Numbers of population of each village as follows:

**Table 2 : Number of population and family in Mairiang sub-district**

Village number	Number of family (household)	Number of population (person)
1	175	945
2	204	1,017
3	240	979
4	126	607
5	128	604
6	106	522
7	129	674
8	248	1,193
9	122	579
10	115	577
<b>Total</b>	<b>1,593</b>	<b>7,697</b>

The characteristics of the population in each village can be categorized by sex as follows:

**Table 3 : Number of population and family of each village in Mairang sub-district**

Village number	Male (person)	Female (person)	Total (person)	Number of family (household)
1	438	507	945	175
2	523	494	1,017	204
3	464	515	979	240
4	301	306	607	126
5	295	309	604	128
6	239	283	522	106
7	321	353	674	129
8	582	611	1,193	248
9	269	310	579	122
10	282	295	577	115
<b>Total</b>	<b>3,714</b>	<b>3,983</b>	<b>7,697</b>	<b>1,593</b>

#### 4.1.4 Characteristics of Natural Resource and Environment

The area of Mairiang sub-district is 7.67 percent of Chawang district which has 22,220 rais of both plain land and plateau. By physical categorized, we found that (Suriyan Suwanarat, 2001: 72) Mairiang sub-district consists of 13,320 rais plain area. Both plain and plateau areas are used for agricultural purpose (10.89 percent of agricultural area of the district which has 181,339 rais) 2,600 rais of area used for domesticated animals (10.60 percent of domesticated area of the district which has 24,527 rais), 100 rais of area is used as water sources (5.0 percent of the area used for water sources of the district which has 3,795 rais) and 3,800 rais is a forest area (6.47 percent of a forest area of the district which has 58,712 rais). Being categorized the area for utilization (Suriyan suwanarat, 2001: 72) we found that there are 5,750 rais of the agricultural area used for rice field compared to the population of 501 families who are rice farmers. The total product is 2,012 tons per year. There are 10,670 rais used for rubber plantation compared to the population of 525 families who are rubber farmers. The total product is 6,402 tons per year.

There are 2,470 rais used for orchard compared to the population of 1,081 families who are orchard farmers. The three categories of careers are shared by each family as its minor or supplementary career of the family throughout the year.

Orchard farmers career can be categorized by the kinds of fruit: Rambutan, Mangosteen, Long gong, Pomelo etc. for example, and orchard farming can be classified into single kind of fruit planting and mixed planting in the same area.

As the area of Mairiang sub-district is plentiful of diverse natural resource: 10 square kilometers of forest area (national reserved forest) at Kao Soon (The Mountain named Soon Mountain) where valuable kinds of minerals of the country are also found especially, wolfram. The summary document of Mainiang Community Development and Study Center's lessons learned (2) described that there had been mining for wolfram at Kao Soon for years and it effected to economic growth of sub-district. The Regional Army 4 received the situation there and found that Kao Soon area was used for collecting tools and power of terrorist groups who were against the democracy system. Criminal cases happened very often so Colonel Harn Leenanon, Head of Regional Army 4 announced the Peaceful Southern Area 2/1980 to stop the violence of terrorist in Nakhon Si Thummarat province and every area in the southern part of the country so mining for wolfram was no longer produced from the area.

For water sources, there is a river named Tapee with 12,000 meters long along the line between Mairiang sub-district and Na Wae sub-district where plenty of water is used for agriculture throughout the year (Document of Outstanding developed sub-district, 1998: 7). There are also other water sources such as 20 rais of invented reservoir named "Klong Na Kanom" by the Department of Irrigation in village number 9, rubber farmers used tube pipes to carry water from the reserve for sheet rubber production process throughout the year. There are natural sources of water in the area of 11 rais in village number 4 and number 5 used for some purpose for the whole year.

### 4.1.5 Economy

As mentioned earlier that the area of Mairiang sub-district comprised plateaus and hills declining from the middle part to the south at the Tapee River basin. The land was transformed from groves to rice fields.\*

The main career of the people in Mairiang sub-district in the past was growing rice\*\* which depended on natural source of water and rain. There was only one time per year for growing rice without any modern machine or equipment to help. Buffaloes and cows were brought to help prepare rice fields before planting. The season of growing rice starts in August when the monsoon comes with heavy rain. The farmers used hoes to build earthen dyke around rice fields to keep water. The field was ploughed for 2-3 times then, harrowed the field with rakes or a flock of buffaloes was brought into the field and trampled over the field before growing rice. Rice sprout was planted separately and rooted out to grow in the field prepared. When the rice completely grown, the farmer used "Kae" a thin blade of metal put on a small piece of wood to collect an ear of paddy one by one and tied it together in a bunch of one to two kilograms, took it to the stock for consumption and distribution (Tuan Mesai, interviewer ; Somkid Buasakad, interviewer).

When the rice was growing in the rice fields, the farmers caught several kinds of fish, crabs, prawn and shells for everyday meals of their families.

Some years of later, rubber trees were grown and expanded everywhere in the southern region and become economic plant of the region until now.\*\*\* The area of Mairiang community was also adjusted to grow rubbers but still kept some parts of the land for rice fields. (at the same time there was a concession to cut the trees around the mountains and other areas)

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\* The local legend of the south of Thailand mentioned that the people in the upper parts of the region were a group who transformed groves into rice fields. Sangob Songmuang, one of southern historians interpreted that the southern people adopted the way of growing rice from the people in the central region to replace mobile plantation as they did before. (Chattip Nartsupa and Poonsak Channikornpradit, 1997: 56-57)

\*\* In the past there were two a ways of growing of rice in the southern region (Tuan Meesai, interviewer) as follow:

1. Hill rice, it is a way of growing special kind of rice in the hill area or plateau. This kind of rice needs less water to grow and takes only short period to harvest.
2. Flood plain rice, there are several ways to grow rice in flood plain areas depending on types of land and kinds of rice to grow.

\*\*\* Rubber trees have become economic plant and basic product of the southern region since the middle of twenty-fifth of Buddhism century by a group of Chinese. After British government introduced rubber seeds to private section to grow for business purpose at the first time in the state of Perak of Malaysia. Praya Rassadanupradit, the governor of Trang who was very good at governing and doing business took a trip to Perak and studied the way Malaysian people grew and produced rubbers by himself in 1898. In 1901, Thai government negotiated with British government to share good kind of rubber seeds to grow in Kantang of Trang. During 1902 – 1903 Phuket became a place to cultivate rubber trees for the people in the southern region. The first group of people to grow rubber trees was Chinese investors who contracted for southern railway construction. Several areas were covered by rubber plantation from the southern border connected to Malaysia in Songkhla, Yala , Narathiwat up to Nakhon Si Thammarat. (Suthiwong Pongpaiboon, 2001: 90 - 91)

In 1962 there was a heavy windstorm in the south.<sup>\*</sup> Mairiang was also effected by the disaster, rice fields and rubber plantations were destroyed. The Rubber Aid Fund was founded to help rubber farmers for financial support and others.<sup>\*\*</sup> Mairiang people's way of living was then changed to single career as rubber farmers<sup>\*\*\*</sup> because growing rice was limited by some factors while rubber plantation was well supported from the government. It took 8-10 years to produce rubber until the rubber trees are too old to produce liquid rubber, the farmers sold rubber woods to produce furniture and wood container.

Recently, Mairiang' economic community was changed from single career to mixed farm with several kinds of fruit and rice were grown simultaneously.

It was also interesting that the trend of Mairiang community people's main career which increased more income and growth of economy was not rubber. (Prayong Ronnarong, interviewer; Piengpen Srithammasit, interviewer) There were 10,670 rais of land for rubber plantations, 5,750 rais for rice fields and 2,470 rais for orchards. The proportion was 4:2:1 (Mairiang Community Master Plan and Strategies, 2001: 6)

Agricultural products in each year comprised 7,000 tons of rubber, 2,000 tons of rice while products of orchard were not certain because there were many factors effected to different kinds of fruits such as quantity of products and price. The villagers processed some kinds of fruits and kept for long term consumption.

Nowadays, the main career of Mairiang people is mixed. They have rubber plantations with rice fields and orchard at the same time while additional career such as freshwater fish catching, swine and mushroom cultivation are also developed. From the in-depth interview, the researcher found that each family in Mairiang sub-district has got some space around the house to grow different kinds of vegetables for everyday consumption such as cucumber, corn, pumpkin, chili, banana, etc.

There is a central market called "Tarn Por Market"<sup>\*\*\*</sup> for trading the products of the community at village number 3. Products from within and outside the community are traded. Several government offices are established to serve the community including bank, police station, health center and other public service places.

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<sup>\*</sup> The southern region confronted with windstorm disaster for three times in 1962, 1975 and 1988. The first and second disasters caused seriously damage. The mountains collapsed with strong terrene and destroyed all houses, rubber plantations, orchard and rice fields. (Chattip Nartsupa and Pornpilai Lertwicha, 1998: 140-141)

<sup>\*\*</sup> The remarkable change of all eastern regions of the south was the expansions of rubber plantation throughout the region. Main product of the people was rubber and the two largest areas for rubber plantation was in Nakhon Si Thammarat and Songkhla.

<sup>\*\*\*</sup> After the construction of southern railway rout, many small markets were established along the railways such as Chawang Market, Lak Chang Market, Naborn Market, Tarn Por Market and Tungsong Market. The center of public services was also established and expanded. (Chattip Nartsupa and Poonsak Chamnikornpradit, 2540: 108-109)

#### 4.1.6 Society and Culture

As the southern region located between the west and east coasts, so the people in region are able to contact with outside world for a very long period. Diverse experience of the southern people on interaction with other groups was formed and inherited continuously. As Mairiang community was located on the eastern coast, it was also influenced by the interaction which can be observed from close relationship of people within and among other communities. Mairiang people are sensitive for information, challenging, proud of being southerners and the culture inherited. Cultural and social characteristics of Mairiang people can be generally described as mentioned below:

##### 1) Way of Life

Mairiang people's way of life is very simple and plain among natural environments. They are able to adjust and balance themselves to the changes of environments and situations.

There are several kinds of natural grown vegetables for everyday consumption of Mairiang people. The relation of production and way of living are unique. Members of each family are integrated in a household production process.\*

##### 2) House Settlement

Most of Mairiang people's houses are constructed in a cluster and expanded as the number of people increased. The houses are also gathering along the railways and roads. The group of relatives always build their houses close to each other for convenient contact. As the members of people are increasing, they invade to the reserved areas by destroying natural forests for their farms.

##### 3) House Area Arrangement

Generally, the villagers of Mairiang community build their houses under the shadow of the big trees. Space around their houses is tidy and clean to prevent poisonous reptiles to come into their houses. Space around the houses is also used for rest area of the members. Several kinds of herbs, vegetables, fruits and flowers are grown next from the space provided for consumption and decoration. There is a well in the area surrounding by different kinds of trees.

##### 4) Beliefs on Consumption

Consumption culture of Mairiang people is familiar to other southerners who enjoy spicy kind foods with curries and chili pastes. There are different kinds of ingredients mixed for curry paste, especially turmeric (Ka-mint)\*\* is always added to eliminate smell of raw fish or pork. Consumption habits of Mairiang people depends on climate and location where fruitful vegetables are easily grown.

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\* It was found from the survey that there are over one hundred kinds of eatable vegetables consumed in Mairiang community.

\*\* It was believed that turmeric or Ka-mint is a king of herbs to cure all illnesses.

Mairiang people enjoy eating fresh vegetables\* with their spicy foods in almost every meal. "Pak Noh"<sup>\*\*</sup> is what they called for the combination of several kind of vegetables arranged in a tray to accompany the main course.

We can observe that the way they have fresh vegetables with spicy meal because fresh vegetables are available around their houses and they have learned value of vegetables and herbs. (This caused the development of alternative career of the center.)

From the way they consume in their everyday life led to the formulation of Mairiang people's characteristics. Generosity and benevolence are their characteristics that have been transferred which we can observe from the way they invite each other to join the meals at their own houses.

### 5) Illness of Local Wisdom

Different kinds of vegetables and plants have been used widely as foods, medicines. They can be taken directly or after processing into different types of products. All parts of plants can be brought to blend into medicine and food. The survey found that there are over one hundred kinds of plants that can be blended to become medicines (Charoon Ubon, interviewer; Arunee Senatipbodee, interviewer; Prayong Ronnarong, interviewer; Kajorn Tiphaphong, interviewer). Some examples are given below:

Areca palm (Maark) is a kind of palm trees generally that has been grown as a fence of the house in the community. Areca's fresh fruits and dried fruits can be sold. The areca fruit is used to stop bleeding and to help strengthen teeth and gum, to stop diarrhea and to kill parasite in the pets.

Betel pepper (Ploo) is a kind of herbs generally that has been grown in almost every house of Mairiang community. Traditionally betel pepper's leaves are eaten with areca fruit. Betel pepper is grown at the base of other perennial trees which can be a stall for it. The medical properties of betel pepper is to cure painful parts of body, to stop inflamed wound, ringworm, and flatulent stomach etc.

Papaya (Malago) is a kind of fruits generally that has been grown in every family house. Papaya can be taken both raw and ripped fruits. The medical properties of papaya are to help release of urine, gas and leucorrhea etc.

Sugar Apple (Noina) : Not many sugar apples are grown in Mairiang community. Sugar apple fruit is used for food. Medical properties of sugar apple are to use its seeds and leaves as insecticide and to stop bleeding.

Pumpkin (Fagtong) is a kind of herbs that has been generally grown in the community. Fruit and younger leaves of pumpkin can be used for food. Medical properties of pumpkin are to use for killing parasite, curing painful from being bitten by insects etc.

Bitter Cucumber (Mara) is a kind of herbs generally that has been grown in the community. Medical properties of bitter cucumber are to use as a laxative or balm for skin decease.

\* Most of the southerners like to eat fresh vegetables instead of boiled vegetables because there are available of non-toxic vegetables for all seasons. (Kajorn Tiphaphong, interviewer).

\*\* The reason of having vegetables with spicy food is to balance spicy foods with fresh vegetables. (Kajorn Tiphaphong, interviewer).

**Banana (Kluay):** Many kinds of bananas grown in the community for consumption and trading. Banana trees help block younger plants of Durian, Mangosteen, Rambutan etc. from the strong sunlight. Medical properties of banana are to use ripped fruit for releasing excretion system, raw fruit for curing wound and blossom for anemia and gastritis.

**Pineapple (Sapbarod)** is a kind of herbs that has been grown in some areas of the new rubber plantations or along the fence of each house and used for food in the household. Medical properties of pineapple are to use raw fruits to stop diarrhea, ripped fruits to release flatulent stomach, urinate and digestive system.

### **6) Valuation of Relation System**

Social and cultural characteristics of Mairiang community people stress mainly on relation within each family and among their relatives. Value of nature and environmental conditions are other important factors that influence Mairiang people. Social and relative system of the community is under the belief in the way of Buddhism.

Valuation of relation system in a family, relatives and community of Mairiang people reflected in the form of their ceremonial practices. The Tenth Month Traditional Festival and Nora Rong Kru\* are good examples:

**The Tenth Month Traditional Festival:** Ancestors welcoming and farewell is the most important festival in the southern part of Thailand. It is believed that at the end of the tenth month of each year, the dead ancestors and relatives will be released from hell to meet their relatives in the human world. They will arrive on the first day of the tenth month and go back on the fifteenth day of the month (usually in October). The people always prepare many different kinds of food for their dead ancestors and take the foods to the temple in order to dedicate to all dead ancestors and relatives. During this period, members of each family who live or work in other areas will come back to join together at their houses in their hometown to take part in the ceremony. Different kinds of foods and biscuits are arranged in a big bamboo basket called "Sam rab" or "Homrab"

The first layer of bamboo basket contains rice, onions, garlic, chili, salt, sugar and other necessary ingredients for cooking. The second layer contains dried foods such as ; fish, meat, vegetable, sweet and different kinds of fruits. The third layer contains coconut oil, kerosine, matches, borneol and the fourth layer contains a pan, plate, needle, thread, then a set of household utilities, such as cigarette, medicine, drug candle and incense-sticks.

The top layer is the most important part, there are five kinds of biscuits: pieces of fried rice in diamond shape which mean growth and prosperity and it can be a vehicle for the dead person to travel for the next life. The second kind of biscuit of the top layer is a piece of handkerchief shape of flour with honey fried in coconut oil (Kanompla) symbolizes clothes for the dead people.

The third kind of biscuit, small round coin shape fried flour symbolizes coins to spend and small flat round fried flour with sesame symbolizes toys

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\* Nora Rong Kru is the word used in Nakhon Si Thannarat and Krabi while "Nora Long Kru" used in Songkhla. (Tuan Meesai, interviewer)

for them to play. The traditional ceremony and festival demonstrate the gratitude of alive people to their dead ancestors and relatives.

It was assumed that the traditional ceremony was originated before Buddha era and it was adjusted to making merit by giving sets of food to the Buddhist monks.

**Nora Long Kru Traditional Ceremony:** It is also one of the ceremonies held to pay respect to the dead ancestors in the middle part and upper part of the south such as Chumporn, Suratthani, Nakhon Si Thammarat, Songkhla, Trang and Krabi. The ceremony is hold only for a group of people who are in the family of Nora (traditional and local Thai play). Long Kru is organized by inviting dead person or spirit to haunt in one of the relative to become "Kru Mor" who will take care of the family members to live peacefully and successful in their lives. The leader of the ceremony is a senior Nora (Nora player) of the troupe who has got holy magic, virtue and ability of excellent dancing. The senior Nora will invite the spirit to haunt in one of the relatives and there is a dialogue between the spirit in the body haunted and other relatives for a while. The relatives will pour water to accuse their ancestor before the spirit leaves the body. The owner of that body will become a body of the spirit until the end of his or her life. The ceremony will be hold in every one, two or three years depends on the spirit's command. It takes three days to finish the ceremony which usually starts on Wednesday and ends on Friday. The songs sung in the ceremony describe goodness of ancestors and the stories in the past. The master or senior Nora will mention the name of each ancestor in the song he sings. At this time, all members of the families and community are able to meet each other to recall the history of their ancestors and to learn each other's recent life.

Nora Rong Kru Ceremony strengthens family relation and unity of all relatives who respect the same senior person. They can count other people who respect the same senior person as their relatives.

There are several groups of careers who express gratitude to their ancestors or the senior master who passed away in the similar way as Nora group does; Kru Nang Talung, (Puppet shadow), Mor Tum Yae, (Traditional accoucheuse) and Mor Tee Lek (Iron forger). They believed that their master (Kru Mor) is a holy person in the knowledge taught. If the master of each career dies, one of his children will succeed to the position as a "Master" in the ceremony of appointing (Rab Kru Mor) hold in public where many people join. If the master who passed away do not have his children, the one who can succeed to the position will be one of the closed relatives. If the one who is selected for the position refuses, he or she will be punished by having serious illness. Whenever he or she agrees to take the position, he or she will get well. The succeeding to the position of "Kru Mor" or "Master" of each career is a cultural mechanism to help transmit body of knowledge to the next generation of the community, especially the knowledge that does not relate to the production process and consumption.

The valuation of relation system among the members in the community can be demonstrated by joining together to finish some specific works which can not be done by each family alone at the limited time. The people are willing to help each other as a tie of benevolence and responsibility. The traditional way of helping each other is called "Ork Park", "Kin Ngarn", "Sor Raeng". or "Sor Mue". The

host will ask their neighbors to help finish the job without paying but to serve some meals after the job is completed.

The traditional way of asking to help from the neighbors still happen up to present but not very strictly do as they did before.

Another example of the valuation of relation system among the members in the community is to share some parts of the big job to other neighbors or "Kin Ngarn". It happens when each family holds any festivity or ceremony at his or her house such as wedding, funeral and ordination etc. Members of other families in the same neighborhood will go to the host's house and help do any job they can do. They sometimes take something from their own houses to share with the host's house such as vegetables, chicken, pork, fruit, knife, etc. to help the host willingly.

### **7) Dignity and Renown**

Diversity of culture, climate, landscape and natural resource are important factors to shape Mairiang people's mind to become unique, proud of themselves as southerners.

We can conclude that Mairiang community is a historical community founded over one hundred years with 7,697 populations in 1,593 families. The community is abundant of diverse natural resources, including plants, animals and minerals. Economic structure of the community depends mainly on rubber plantations, rice fields and orchards while social structure is closely tied with harmony and relationship of rural life. Mairiang people's way of living is slightly changed from the past. Their houses were built in clusters to help close contact and communicate. Cultural structure is parallel to social structure and become unique which can be observed from different symbols such as the beliefs on food consumption, curing illnesses, growing herbs, valuation of social relation, realization of dignity and renown of localism. Traditional festivals, local ceremonies and beliefs have been persisted until nowadays.

Therefore it might be said that Mairiang community has community context that supports development in order to get self-reliance or to be self-reliant community (Office of the National Education Commission, 1996: 11 – 12). This accords with the scholars' concept (Kanjana Kaewthep, 1998: 237 – 255 ; Ekawit Na Thalang, 1996: 3 ; Organizing Sub-Committee of Structure of Educational System and Networks, 1990: 30). It also tallies with the research of Thailand Institute of Scientific and Technological Research (1995: 4 – 5). The result of this research indicated that communities that are able to be self-reliant must have five terms of self-reliance: technology, economic, resource, mental and social. Fortunately Mairiang community holds all these five terms with details given below:

**1. Technology:** Mairiang community has the characteristic of village society. People in this community use local and proper technology that was collected from their experience to make production.

**2. Economic:** Economic structure of Mairiang community is self-reliant in the process of production, marketing and distribution. Villagers are able to make balance of this process according to their demands and limited capacity of

supply their demands. They are also able to save and gather for the purposes of production and marketing.

**3. Resource:** There are various and plentiful natural resources in Mairiang community such as forest, water resource and minerals. Villagers can utilize these natural resources in accordance with balance of natural ecology and capacity of natural renovation.

**4. Mental:** Villagers in Mairiang community have consciousness of learning, development and self-reliance. They are able to apply all things to utilize them in community. They also like to seek for new knowledge and news in order to follow situations of outside world.

**5. Social:** Mairiang community has able leaders. Social relationship of villagers in community is very close. Traditional culture that goes along well with changing society is also prominent.

Besides this it has been also found that all these five terms of self-reliance help support learning of Mairiang community in order to establish learning process in various fields : occupation, living, local wisdom development, gathering of organization that affect real self-reliance of Mairiang community with details given later.

**Table 4 : Conclusion of the context of Mairiang community**

Context of community	Details
1. General characteristics of the community	The community is located in Mairiang sub-district, Chawang district, Nakhon Si Thammarat province with forty-three square kilometers. General landscape of the community is plateau and inclines down to the Tapee River Basin. The weather is hot with humidity. There are only two seasons : hot and rain as in other areas of the south.
2. Infrastructure of the community	The community has almost complete infrastructure. For public health, there are two health care units : Tarn Por Health Care Unit and Ban Nong Tom Health Care Unit. For education, there are one kindergaten, six primary schools and two secondary schools. For religion, there are two temples : Wat Mairiang and Wat Haad Soong. For governing, there are ten villages in the community by which eight villages are supervised by local administrative organization and the other two are supervised by Mairiang sub – district municipality.
3. Population	There are 7,697 populations from 1,593 families with 3,714 males and 3,983 females.
4. Characteristics of natural resource and environment	There are several plentiful natural resources such as forest, animals and minerals.

**Table 4 : Conclusion of the context of Mairiang community (cont.)**

Context of community	Details
5. Economy	<p>The main career of people in the past was growing rice that depended on rain. There was only one time per year to grow rice without any modern tools. Buffaloes and cows were the main helpers to prepare rice fields. Everyday consumption was the main aim of production. After rubber trees were expanded widely to the southern areas, rice farm was changed into rubber garden. However, rice farm was still the main career. In 1962 there was a heavy windstorm in the south. Because of this effect, the Rubber Aid Fun was found to help farmers that changed the main career-rice farm of Mairiang community into rubber plantation since then. However after 1992 Mairiang people's career was not only rubber tree plantation but also integrated agriculture-rubber tree plantation, rice farm, fruit garden and animals breed.</p>
6. Society and Culture	<p>As Mairiang community is located in the south and is closed to sea, Mairiang people are able to contact and trade with people in other regions continuously. So they are sensitive for information, brave, challenging, proud of being southerners, care of friendship and culture interited. They also believe in the following traditions: lifestyle, house settlement, social relationship, belief of consumption, wisdom of illness treatment, value focus of family relationship, relatives, community and consciousness of pride and dignity.</p>

## 4.2 Mairiang Community Development and Study Center

### 4.2.1 Development of Mairiang Community Development and Study Center

Mairiang Community and Development Center was located in village number 9 of Mairiang sub-district, Chawang district, Nakhon Si Thammarat province. The center was founded from the forming of Mairiang Agriculturalists' Group adjusted to be Mairiang Gardeners' Group and became the center until now.

#### 1) Origin

Since the landscape of Mairiang sub-district comprises plateau and declines to plain land at Tapee River Basin, it causes hot and humid weather with rain throughout the year. There are two seasons, hot and rain which are suitable for agriculture, especially, rubber plantations, rice fields and orchards. Mairiang people's way of living ties with rubber from the first generation to present generation and the ways of producing rubber has been improving with experience, knowledge and skill. Local intellectuals of the rubber production process were crystallized and belong to the community.

In 1962, the windstorm disaster destroyed lands, forests, rubber plantations, orchards, rice fields and farms in Mairiang sub-district and other areas in the southern part of Thailand. Mairiang people lost almost everything. They earned their living with the products of rice fields and annual crops grown after the disaster. The concession to cut big trees in the forest was the main cause of damaged areas and plantations. The damaged land was rehabilitated by growing special kinds of rice and rubber with the support from Rubber Aid Fund. The forest areas were replaced by rubber plantation, except, the rice field land so Mairiang sub-district became single agricultural system and rubber was the main economic plant.

"In 1962, Laem Talumpook windstorm disaster destroyed almost everything in Mairiang, Chawang district. One hundred-year trees, rubber plantations, farms were destroyed. The weather was changed by the disaster. It was dry which caused long time conflagrations. .... The people lost everything.....  
..... The only way to earn their living was to grow rice and some crops in the fire-burnt areas. Rubber Aid Fund came and supported with new breed of rubber so all areas were covered with rows of rubbers."

(Prayong Ronnarong, interviewer)

In 1969, the newly grown rubbers were ready to produce liquid rubber while the rubber price was very low. It was about 5-7 baht per kilogram. Since there was only rubbers that they can sell so they have to accept it without bargaining to the mediators. Most rubber farmers were in trouble and became bankrupt. A group of twelve people then joined together to study causes of problem. The group of twelve people are: 1) Mr. Prayong Ronnarong, 2) Mr. Prayoon Ronnarong, 3) Mr. Kovit Singkarn, 4) Mr. Arom Ratpiboon, 5) Mr. Anan Suwanno, 6) Mr. Prapas Pongsakul, 7) Mr. Preecha Riyapan, 8) Mr. Jamras Sanpet, 9) Mr. Chareon Ratpiboon, 10) Mr. Naow Somsaeng, 11) Mr. Rieng Yaso, and 12) Mr. Kosol Singkarn

The group of twelve people analyzed causes of problem and the ways to solve. They found that the causes of problem were: Mairiang people had limited capital to invest, they did not have information of local and world market's demand of their product, they used the old way of rubber processing with no regard on quality or production process to respond the market demand.

" In the past, each family managed the rubber plantations separately on their own ways without joining to improve the products"

(Arom Ratpiboon, interviewer)

After the group of twelve people found the causes of the problem and trouble, they realized that they needed to join together and set their main goals to get rid of being taken advantage from the mediators who always set the price and weight of rubber products.

The group of twelve was advised by District Agricultural Unit to improve quality of their raw sheet rubber and collect their products together for wholesaling by bidding. The group of twelve people named their group "Mairiang

Agriculturalists's Group" and separated into two units of working, rice farmer unit and rubber farmer unit.

In the first phase, the rubber farmers group had sixty-two members. They met together with the aim at rubber quality improvement. Mr. Arom Ratpi boon (a person who was trained by Nakhon Si Thammarat Rubber Organization and won the first prize from sheet rubber competition at the District New Year Festival) led the group to improve the products and provided space to stock sheet rubber at his own house. Every fifteen day, 15,000-20,000 kilograms of rubber were taken out for bidding by local and other merchants. Several problems still happened; quality of rubber, selection process of rubber for bidding of the working group.

For the rice farmer group, there were some problems happened to this group, the failure of managing system of rice farmer group committee because of unclear and misled policy which focused on business benefit. The members of the group borrowed some money to buy fertilizer but they could not pay back on time.

Due to the problems happened to the group, both rice farmer group and rubber farmer group split the two units of the group into two separated groups in 1972 after three-year operation. (The farmer group was discontinued in 1982)

"Prior 1984, we registered the group as Mairiang Agriculturalists' Group but the main career was rubber plantation. We split rice farmer unit and rubber unit from the same group to solve specific problem of itself after some problems happened in each group differently. The administrative committee of rice farmer unit borrowed money from Thai Farmer Bank and distributed to be borrowed by the members to buy fertilizer for the rice fields. The group management system was not practical because it focused on business profit."

(Prayong Ronnarong; Arom Ratpi boon, interviewers)

The results of the separation of the two independent groups under the group led by twelve people can be summarized as follows:

1. Quality of the raw sheet rubber was improved with the suggestions provided to the farmers. The price of rubber was raised as the quality of its was improved but it still did not reach the standard quality.

2. The quality of rubber in Mairiang sub-district was different depending on the ones who produced because it was produced by the different machines at each member's house. The liquid of all rubber should have been collected and process at the same time in the same place.

3. The way they invited the mediators to bid for their rubber at the group stock was to facilitate the mediators not to facilitate the members because the mediators still set the price and weight of the rubber without bargaining by the farmers.

In 1982, the Department of Agricultural Promotion supported rubber farmers to improve quality by organizing rubber competition at the New Year Festival in Chawang district. Many farmers sent their rubber to compete including Mairiang people. After the competition, the mediators bought all rubber with higher price than the market price. The situation made the farmers to learn that they had to produce good quality of rubber with large quantity to meet the requirement of the markets. The

problem was that how to produce good quality of rubber with large quantity because Mairiang people could produce only 1-2 sheet of low quality rubber per day by traditional way.

They joined in a group and discussed the way to overcome the obstacles and agreed that they had to produce air dried sheet rubber factory. The group of people agreed to bring a new idea of producing rubber and decided to introduce the idea to all rubber farmers in the sub-district. The group leaders expose the innovation to Mairiang people by joining to help them finish their jobs in the villages where they always met together. The message was sent to almost every family in the sub-district until the innovation was understood and accepted widely at the same time the price of rubber was very low at the price of 12 baht per kilogram.

The new start began with the selection of Mairiang sub-district committee. The new committee comprised twelve people: 1) Mr. Prayong Ronnarong 2) Mr. Prayoon Ronnarong 3) Mr. Kovit Singkam 4) Mr. Arom Patpi boon 5) Mr. Preecha Riyapan 6) Mr. Anan Suwanno 7) Mr. Naow Somsaeng 8) Mr. Prasert Kongsit 9) Mr. Rieng Yaso 10) Mr. Jamras Sanpet 11) Mr. Prapas Pengtrakul 12) Mrs. Piengphen Srithammasit.

The committee studied in details of air dried sheet rubber by asking for suggestions from Agricultural District Unit of Chawang and taking a trip to Naborn Rubber Organization again. They were told that Naborn Rubber Organization had got a factory with old machines and equipment so the group should have visited a modern factory owned by a private company named "Naborn Rubber". The group agreed to take a trip to the factory but they were refused by the owner of the modern factory. They asked the Agricultural District Unit to help them. The unit then officially requested the factory to allow the group to visit. The group prepared to get everything they saw from the factory although the factory did not allow them to get much information of rubber production process from their factory. A few people were allowed to come in so they tried hard to memorize each part of production process by assigning each person to study each part separately. They were able to go back to learn more two to three times later.

"We visited Naborn Rubber Company to have a look at all processes of rubber production and tried to memorize every process carefully. The factory we visited was very big so we needed to have the smaller factory with some necessary machines and equipment for our own factory. We did not have much information from the visit because they were not willing to explain in details".

(Suchart Tipsuwan, interviewer)

After studying the information collected from the visits they met and discussed for their investment. They agreed to develop a smaller size of factory because of the limited capital to invest. (Naborn Rubber Company invested with 11 million baht to produce ten tons of rubber per day). They planned to invest with 500,000 baht for a five-hundred kilograms per day capacity of production factory. From careful study on market situation and capital to invest of air dried sheet rubber production, they found that the construction of rubber factory with the capacity of production of at least 1,500 kilograms per day, they needed to distribute rubber to the market in every 15 days with a thirteen-ton truck for the factory. The basic machines

and equipment cost 250,000 baht with 500,000 baht for revolving fund and the total of capital investment was one million baht.

The implementation of the idea started when Mr. Prayong Ronnarong donated one rai of his land for the factory. The members of the committee persuaded their relatives and friends to join so the number of members increased to thirty-seven people. They collected shares for the first time on February 10, 1984. Twenty-five percent of capital to invest was collected from all members (250,000 baht) and it was deposited at Thai Commercial Bank.

At the same time the committee met continuously to assure self-confidence to all members of the shares they paid. In January 1984, they contacted to the province and asked for registration. Agricultural Province Unit did not want the group to register because many groups were failed and became bankrupt. If Mairiang group was allowed to register there might be one more group to get into trouble. The group leaders met the provincial governor and asked for his assistance to register the group by promising not to deal with business benefit. (not to borrow money from the bank and distribute to the members). The governor met with the group at the site and agreed to help by assigning Agricultural Province Unit to instruct them with the knowledge on agriculture and cooperative to assure that the group understand the reason for registration. The group of thirty-seven members decided to register with the name "**Mairiang Gardeners' Group**" which was approved on June 1, 1984. The first committee of the registered group comprised:

- |                          |          |
|--------------------------|----------|
| 1. Mr. Arom Ratpiboon    | chairman |
| 2. Mr. Prayong Ronnarong | member   |
| 3. Mr. Prayoon Ronnarong | member   |
| 4. Mr. Kovitt Singkarn   | member   |
| 5. Mr. Anan Suwanno      | member   |

(Mr. Prayong Ronnarong and Mr. Arom Ratpiboon took turn the position as a chairman for several times while the main members shifted to be advisors and seniors members until now)

## 2) Expansion

After Mairiang Gardeners' Group successfully registered as an official group, the second time of another 25 percent share of the capital to invest was collected. All member were informed to understand the objectives of forming a group which focused on improving rubber quality and reducing working process on producing with rubber with the old way for other jobs to increase more income.

"Strong intention of all members in joining for developing good quality of rubber was needed, not to join for benefit purpose but to improve rubber quality and time consumed for producing rubber".

(Prayong Ronnarong, interviewer)

The second time of share collecting went very well because the members understood objectives of the group. 250,000 baht was collected and paid for additional construction of the factory (after the first construction on February 10, 1984)

with necessary machines and equipment. A few months after the second share collecting they collected the third time but the members could not pay because the rubber plantations were not old enough to produce liquid rubber. They tried to produce air dried sheet rubber with the machines and equipment they had at the factory. (the liquid rubber from the twelve people's plantations)

At the early period of their factory operation, the group applied the processes learned from the visits to private factory in the form of trial and error ways. The quality of air dried sheet rubber was not as good as the one produced by the private factory so they could not sell to the market and lost for 2-3 times. They did not give up their plan and decided to seek for more suggestions from academic official, Mr.Decha Meesuan from Naborn Rubber Organization. The quality was then improved and met the demand of markets and merchants. From the lessons learned, the group of farmers brought liquid rubber from the members to produce air dried sheet rubber at the factory. The rubber products increased to 500 kilograms per day. \* The price of rubber set by the group was equal to the price of second class rubber announced at Haad Yai central market, Songkhla province which was higher than the local price so more liquid rubber was taken to the factory.

Third and fourth times of share collecting from the members were completed with full amount but it was not enough for the revolving fund to hire the employees. They tried not to spend revolving fund but to have the members bring liquid rubber to the factory. The factory produced and distributed to the markets and took the money to pay the members. The problem happened when they could not collect enough money to pay the members. They borrowed 500,000 baht from Thai Commercial Bank with the condition to increase number of members from thirty-seven members to fifty-two members and to have the land of the five members of the committee for guarantee.

The group used 500,000 baht as a revolving fund to hire the employees to work at the factory from 1985 while at the first period of operation they did not hire any employee. The five members of the committee helped each other after they were trained to produce good quality rubber. They recorded every procedure of production process carefully for fifteen days and hired five employees to take the duty of air dried sheet rubber production after transferring skills, knowledge and techniques. The duties in charged of the first five employees were: liquid rubber control, diluted liquid rubber control, chemical use control, sheeting rubber control and grading.

In 1988, Mairiang Gardeners' Group sold their rubber with higher price (33 baht per kilogram) while the local market bought at the price of 27 baht per kilogram The group could gain more benefit by raising the price of their rubber but they decided not to do. They fixed the price at 33 baht per kilogram and collected eighty tons of rubber in the stock for one month to assure the confidence of the factory operation to the members.

"When we formed the group in 1994, we focused on rubber by joining to construct a small factory with thirty-seven members. The group registered to solve quality and price of rubber. We are able to control quality, price and weight of rubber..."

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\* In October 1954, the factory produced 500 kilograms of air dried sheet rubber per day, In 1985 the capacity to produce increased to 1,000 kilograms per day. In 1986-1988 the factory produced 1.5- 2 tons and in 1994 the quantity increased to 4-5 ton per day.

we operate our factory by collecting liquid rubber from every plantation, process it and distribute our products with desirable price, higher than the first grade rubber at Haad Yai Market".

(Prayong Ronnarong, interviewer)

During 1988, the group gained 700,000 baht for benefit. They increased their products from two tons to three tons and spent some money as a revolving fund to the members for their liquid rubber on time. All people in the community accepted the operation and management of the factory so they applied to become group members to sell their liquid rubber to the group. One hundred members were accepted to the group as special members who could not vote or be shared the group dividend. If quantity of liquid rubber was over demand, the special members might be asked to produce their own sheet rubber.

In 1994, the group was supported from the government to build a factory with the capacity of four tons per day production so the one hundred forty special members were accepted as general members.

When number of members increased, the management of factory was complicated. After the new factory was built with the capacity of four tons per day production, the group produced five tons per day and it was over the demand of rubber market. The group could not sell their rubber in advance as before while they have to pay cash for all members.

There was a difficulty on marketing to serve their products so they had a meeting to discuss and concluded that the private factory, Naborn Rubber Company, could be one of the market to distribute the products. The company bought their rubber with 40 Satang (100 Satang equals to 1 baht) higher than the first grade smoked rubber's price announced at Haad Yai central market so they sold their products to the company until 1984.

The group tried to contact the markets outside to buy their products at a better price. They contacted through Mr. Preecha Ronnarong (Mr. Prayoon Ronnarong's brother) and Mr. Kosol Singkarn (Mr. Kovit Singkarn's brother) who lived in Bangkok. The two people searched the names of rubber exporting companies after the group sent a medium grade of 4 x 4 piece of air dried sheet rubber as an example of their product to each company. Only six companies were interested and replied to the group. They were: Inter Rubberatex Bangkok Company, Seng Mui Rubber Bangkok Company, Thai Hua Rubber Bangkok Company (export company) Thong Thai Company (one of its branch was in Naborn) and Hua Thai Rubber Company (Thai Hua Rubber Bangkok's network).

The group determined three selling conditions as follows:

1. Price of the rubber to be distributed should not lower than the price of the first grade smoked rubber announced at Haad Yai central market plus 2.20 baht as a lowest price. The group will sell their products to anyone of the six companies which gives the highest price.
2. The company that agrees to buy the products should transfer the money to the group's account for at least two days in advance.
3. The price set is a factory price, the company has to pay for transportation.

The group dealt with the six companies for a short period because the world market on air dried sheet rubber was uncertain. The group decided to deal with only one company that understood the group situation by not to pay much attention on

profit. Thai Hua Rubber Company was the only one company considered to deal with the group under the agreed conditions as follows:

1. The price of rubber should depend on the world market and not lower than the first grade smoked rubber at Haad Yai central market plus 2.20 baht.
2. The group and the company will inform each other fifteen days in advance if the group can not sell the air dried sheet rubber to the company or the company can not buy the products.

The group dealt with the company continuously until the crisis on economic downturn in 1996.

### 3) Dissemination

The operation of Mairiang Gardeners' Group on air dried rubber processing factory was well accepted by members and other villagers in the community and outside. The success of the group happened from sharing idea, experience, thought and mind of group leaders and members.

In 1991, Mr. Prayong Ronnarong, one of the group leaders was selected to join the trip on agriculture and cooperative, community fund and community industry in European countries for one month. From the experience he gained, the group got much self-confidence that they followed the right direction for their factory operating. They learned that western way could not be applied to their management system. They believed that they had to compete with other countries in the future and Thai people have potential to do with available resources, especially, rubber which was ranked number one of the world. However, Thailand could not set the price of rubber as the central world market does.

The group realized that Thailand should develop a proactive long-term policy and plan to support rubber farmers of the country by joining in a group and constructing air dried sheet rubber with systematic quality control on both quality and price. The rubber gardeners' group has to search for markets to export the products by itself or cooperate with foreign investors to establish a factory in order to produce rubber products in the country, not only raw products.

During 1991-1992, the concrete organizations in a group to have an air dried sheet rubber factory was successful. Several partners joined the group such as Provincial Agricultural Unit, Village Foundation under Rural Development Institute and Association of Institute for life Development. They organized a workshop to find potential groups who were ready to have their own factories. They found that there were seven groups in six districts. The six groups proposed their projects for provincial support\* which were approved by Nakhon Si Thammarat Provincial Development Committee. Twenty-two million baht was allocated for seven factories construction in 1993 and four factories in 1994.

The seven proposals approved were:

1. Mairiang Gardeners' Group, Chawang district

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\* The community leaders of the seven communities visited Mairiang Gardeners' Group and decided to propose their projects to Provincial Development Committee under the name "Nakhon Si Thammarat Agricultural Development Institute Project". The proposals were prepared by the villagers with clear information and necessary data required, including number of members, working plan, budget, account system and anticipated outcomes. It took time to prepare the proposals for the villagers because they had to do it by themselves. The first five proposals were approved in 1993 before the other four proposals were improved later in 1994.

2. Sairah Rubber Farmer Group, Chawang district
3. Klong Se Agriculture and Cooperative Limited, Thampannaraï district
4. Naborn Rubber Farmer Group, Naborn district
5. Ban Toon Rubber Farmer Group, Cha-uat district
6. Ban Nikom Agriculture and Cooperative Limited, Bangkhun district
7. Nikom Khao Kaw Cooperative, Tungsong district

The seven projects were financed differently depending on their potential : Mairiang Gardeners' Group, Sairah Rubber Farmer Group, Klong Se Agriculture and Cooperative Limited and Naborn Rubber Farmer Group were allocated 2,842,000 baht for each group to construct additional drier room in the factory. (In the following year, Nakhon Si Thammarat Provincial Administrative Unit financed 1.5 million baht for machine and equipment. Suan Toon Rubber Farmer Group, Ban Nikom Agriculture and Cooperative Limited and Nikom Khao Kaw Cooperative Limited were allocated with 3,498,000 baht for each project to construct their factories and buy machines or equipment. After eleven projects of nine districts in Nakhon Si Thammarat Province were financed, the preparation phase started with factory construction and training. Field trips on factory management, waste-water treatment and revolving fund management were also included in the training session. "Rubber Network" was formed to develop concrete collaboration to help each other in ever task required, including, networking, revolving fund management and marketing. Learning process of Nakhon Si Thammarat Rubber Network was written in a book named "Complete cycle Manual for Rubber Farmers"

The manual collected structure of world market, structure of Thai rubber market, formula to produce air dried rubber, factory system, rubber industry, small and medium enterprise management in rural area and mixed farming in rubber plantation. Mr. Prayong Ronnarong, one of Mairiang group's leaders served as a secretary to the network. Mairiang Gardeners' Group also upgraded its old factory and equipment used in 1984 to serve the production process of 5,000 kilograms of liquid rubber per day. The new factory was constructed in the area of more than six rai with one kilometer far from the old one. The new factory started to operate in 1994.

"Our new factory was supported by the Provincial Administrative Unit with 2.8 million baht for construction and 3 million baht for materials, machines and equipment. It was 1993 fiscal year budget when Mr. Chuan Leekpai was a Prime Minister. Machines, equipment and materials were installed in 1994 with the capacity of production at 5-6 tons per day. When the rubber trees produced more liquid rubber, the factory had to produce over its capacity because we could not fix the quantity of liquid rubber. There was 6,000-7,000 kilograms per day but sometimes there was about 15,000 kilograms per day when the rubber trees were in its good conditions"

(Chamnan Sooksang, interviewer)

The joining of the villagers for networking and dissemination of Mairiang Gardeners' Group was well accepted by public and private organizations. At the same time, the group became a learning source for other groups since 1987. Some



groups developed better than Mairiang group. Rubber processing factory model of Mairiang group was expanded to other districts and provinces in the region such as, some districts in Suratthani, Pipoon district, Thasala district, Sakaew district in Nakhon Si Thammarat Province.

However, many communities were failed to have their own factories because of not enough money to invest, lacking of strong group leaders and uncertainty of the alternative chosen. The importance of working together helped create good relation to each other and gain more experience in different fields.

" The rubber factory in other communities are more effective than ours because they learned from us and improved the weak points. We told them all about factory operation they needed to know".

(Prayong Rommarong, interviewer)

The joining of the groups in developing rubber plan to put into government policy was one of the important roles of the rubber network. Lessons learned from Mairiang Gardeners' Group and other rubber groups revealed that there was no policy and concise plan for rubber plantation development career. The groups drafted a plan after analyzing problems and concluded lessons learned in order to permanently solve the problems happened. The drafted plan was presented to Nakhon Si Thammarat Rubber Farmers Association and National Rubber Federation (Twenty-two provinces joined as members). There were six public hearings\* before proposing to the National Rubber Committee where the plan was divided into five parts as follows:

**Program and measure on industry:** As Thailand was ranked the first country to produce rubber and exported more than 90 percent of rubber while only 10 percent was processed as rubber products for exporting.

**Program and measure:** The committee suggested that there should be a joint venture if the three partners: mediators, government and farmers to help develop central rubber market system for advance buying. Local market should be established to cover every area and allow rubber farmers organization to participate in management.

**Program on organization development:** The committee suggested that the government should support on setting rubber farmers organization to strengthen rubber farmers to have their role in processing, marketing and community industry including the participation in policy and plan formulation in provincial and national levels.

**Program on research and development:** The committee suggested that the research and development institute should be established as a source of technical assistance, information system, technological transferring and research works.

"After running the factory, we found that some problems happened. We analyzed causes and learned that we did not have a long-ranged plan for rubber development. We drafted a plan to solve the problem in long term so the government did not need to

\* There were six public hearings on drafted rubber master plan: four times in the Southern part, one time in the Northeastern part and another one time in the East.

interfere the rubber price every year. We finished the drafted plan and asked some advice and suggestions from Nakhon Si Thammarat Rubber Association, professionals, lawyers, and the National Rubber Federation. Six public hearings were held, four in the south, one in the northeast and another one in the east. Finally, the plan was proposed to Nakhon Si Thammarat Rubber Committee... but we failed. I told the villagers that I wanted to stop now.... because when it was announced as a Royal Gazette we can not do anything".

(Prayong Ronnarong, interviewer)

The rubber development master plan was widely accepted by all rubber farmers but it could not be pushed to the national level. The rubber farmers changed their point of views by not to depend on rubber but to depend on themselves by utilizing their land more useful. They applied the Royal initiative on self-sufficient agriculture for sustainable agriculture. The idea was to reduce family's expense by gaining more income from minor and supplementary careers.

The group adjusted their group into community organization named **"Mairiang Community Development and Study Center"**

#### 4) Existence

The air dried sheet rubber factory with 4,000 kilograms per day capacity to produce liquid rubber of 176 families of Mairiang community had been operated until there was an economic downturn at the end of 1966 (Suriyan Suwannarat, 1991: 88). Rubber business was effected by the crisis, price of rubber was very low because it was produced by several groups of rubber farmers and price of the world rubber market was not very high. The group has lost for two to three years which could be observed from their account: in 1998 they lost 288,364.11 baht and in 1999 they lost 112,289.18 baht. To reduce capital of investment, the group changed the rubber products from air dried sheet rubber to crapped rubber which could be produced by the same factory and machines. The crapped rubber was produced and sold to Southern Thai Rubber Company (Tek B. Department Limited) in Tungsong district so they could operate continuously with reasonable income.

From 1984 until 2001, it was proved that the community reached their highest success as they were born as rubber farmers with compulsory education level but their specific characteristics of team work, leadership and challenging, they won the difficulties and obstacles. They got the first prize as an outstanding farmer group in 1995 and other honorary prizes from their potential.

The result of their successful development expanded to community development on complete cycle resource development with the establishment of "Mairiang Community Development and Study Center" in 1992.

Therefore it might be said that for development of Mairiang Community Development and Study Center as an organization of learning network for self-reliance in this study, the pattern of process in establishing learning network has been developed from the gathering of twelve Mairiang villagers who had the same concept and came to consult each other. This led to the gathering of Mairiang Agriculturalists' Group, then was changed to be Mairiang Gardeners' Group (person-person), and became Mairiang Community Development and Study Center with the

gathering of villages' network (group-group) that was entitled as Council of Mairiang Community Leaders later. This process of establishment of Mairiang Community Development and Study Center accords with the concept of academic persons (Prawet Wasi, 1993: 29 ; Ekawit Na Thalang, 1996: 30 ; Arun Kaewtapi, 1998: 18-20) and the research of Wimolluck Chuchart (1997: 193-205) on Presentation of Pattern of Process in Establishing Learning Networks for Forest Preservation. From this research it has been found that the pattern of process in establishing learning networks should be developed from networks of person-person to person-group and group-group respectively. Creation of acceptable leaders was priority. Then gathering of community organizations to solve problems together was expanded. Finally existence of networks was considered, emphasizing on participation of members in learning activities, development of members' quality and expansion of networks.

**Table 5 : Conclusion of Development of Mairiang Community Development and Study Center**

Development	Details
1. Origin	<p>Because of good environment to plant rubber trees, villagers in Mairiang community put their lives on rubber trees, so main economic structure of the community depended on rubber plantation. Unfortunately rubber price was uncertain and fluctuated according to marketing mechanism and mediators. Therefore twelve people gathered to set up "Mairiang Agriculturalists' Group". However the procedure was failed. Fortunately there was meeting to determine the future destination of Mairiang community and the conclusion was carried out that para rubber processing factory should be established. In order to make credit of administration of this factory, local agriculturalists' group was registered as "Mairiang Gardeners' Group."</p>
2. Expansion	<p>Having established factory of dry rubber sheet, production was tried out but failed. However Mairiang Gardeners' Group used the following techniques : intention, experience of wrong and right try out, field trip, asking advices from learned people, collected local wisdom of rubber plantation and capacity of seeking market for their products, then they could carry on their procedure successfully.</p>
3. Dissemination	<p>In 1997 Mairiang Gardeners' Group became source of field trip of other communities and sectors. At that time one leader of community took a study tour in foreign countries. From the result of this trip, he thought that it was necessary to set up long term plan to solve problems of rubber gardeners. Then three ways of plan were determined : rubber gardeners were encouraged to gather for the purpose of establishment of para rubber processing factory, these groups were supported to carry on network relationship covering almost areas and policy on para rubber should planed.</p>

**Table 5 : Conclusion of Development of Mairiang Community Development and Study Center (cont.)**

Context of community	Details
4. Existence	From the success of para rubber business operation, Mairiang Gardeners' Group received budget from several places to establish new factory. Process of production started from 1994 onwards. And because of economic crisis, awakening of leader, demand for self-reliance and failure of policy on para rubber, the pattern of gathering was changed, that is Mairiang Gardeners' Group was changed into "Mairiang Community Development and Study Center" since then.

#### 4.2.2 Factors Affect the Occurrence of Mairiang Community Development and Study Center

Mairiang Community Development and Study Center was originally formed by a group of twelve villagers named "Mairiang Agriculturalists' Group", changed into "Mairiang Gardeners' Group" and finally developed to a learning resource unit named "Mairiang Community Development and Study Center". The process of development was affected by many factors during almost 20 years period (1969-1992) which can be described as follows:

##### 1) Internal Factors

###### (1.1) Social Relationship

As the center located in a rural area, the relation of the members was considered as a primary relation. There are very close to each other as they are relatives who share the same ancestors. There are four old different family names: Nowatana, Mairiang\*, Torrarit and Ubon. (Huang Seelathep, interviewer; Somnuk Mairiang, interviewer; Wong Somnuk, interviewer; Tuan Meesai, interviewer)

Social relation of Mairiang community based on occupational relation as they have the same career under the same economic structure. They have shared idea, experience and local intellectuals appropriately to suit with the community conditions in order to find the practical ways to solve the problems with integrated ideal. The example of concrete way can be observed from the situation that the group joined together to solve low price of rubber by using their potential teamwork who share the same interests. Mairiang rubber farmer group joined together as a group to help solve low price of rubber. Group work was proved to be a powerful tool to overcome obstacles and difficulties. Social relation in the form of interaction among relatives and career led to understanding, caring, depending, and cooperating. The result of close relationship was the establishment of Mairiang Community Development and Study Center. Traditional ceremonies, culture and beliefs were transferred from generation to generation. It was interesting to learn from the study

\* From the in-depth interview, the researcher found that the family name "Mairiang" was given by Krom Luang Pidsanulok Prachanart to one of his workers who lived in Mairiang

that the southerners are optimistic, courageous, benevolent, firm and open minded. (Suttiwong Pongpaiboon and others, 2001: 130). These characteristics of Mairiang people help develop the group to be stronger and sustainable.

Therefore it might be said that social relationship is one of internal factors that affects the occurrence of Mairiang Community Development and Study Center. This accords with the concept of academic persons scholars (Chartchai Na Chiangmai, 1990: 209-214; Suthep Sunthonphesat, 1992 : 391 ; Phimphawal Preedasawat, 1990: 346-347) and the research of Kanjana Kaewthep (1998: 237-255) on Establishment of Thai Community Networks. The result of this research indicated that establishment of networks or pattern of organizations establishment would be in horizontal and vertical expansions. Horizontal expansion is sometimes called horizontal solidarity. It is the establishment of network of people who are in the same society. Its limitation is emphasis on kinship, cousin and people in the same community. This accords with the research of Chuchart Liamwanit (1994: Abstract) on Learning Networks of Health Care of People in Rural Community. From the result of research it has been found that learning networks of health care of people were learning networks according to rural society that started from family, relatives and expanded to neighbors in and out of community.

### **(1.2) Lesson to face problems together**

As they were confronted with the obstacles in 1963, the time when the first national economic development plan was started to implement (1961-1966), Mairiang people were in trouble with the problems of being bankruptcy, no land to earn their living. They fought with difficulties together with the attempts to have brighter future by developing rubber plantations. Rubber Aid Fund was a government enterprise to encourage and support the rubber farmers both capital to invest and new breed of rubbers.\*

Growing rubber tree as a single plant caused a lot of trouble to Mairiang people since they have to wait for the rubber trees to grow and to be able to give liquid rubber while they have to live with enough foods and facilities to consume. Mairiang people were controlled by external factors such as world market, mediators, climate, etc.

"Six to seven years of new planted rubber trees were ready to produce liquid rubber but the price of it was very low, at 5-7 baht per kilogram. The rubber farmers were in trouble, they became bankruptcy. They have to sell rubber at a low price without bargaining with the mediators who took advantage from them."

( Arom Ratpiboon, interviewer)

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\* In 1899, Praya Rassadanupradit took South African rubber tree to grow in Trang province for the first time after that Luang Rat Maitree took the rubber trees to grow in Chantaburi province where the landscape and climate are similar to the climate in Trang Province. The rubber trees are grown widely in the east and the south of the country. Another name for rubber tree is "crying tree" because of white liquid rubber from the trees after the farmers cut for the liquid. After long time of being cut, the liquid reduces which would make trouble to the rubber farmers. Rubber Aid Fund was established in 1960 when Field Marshal Sarit Tanarat was a Prime Minister. The purpose of the Rubber Aid Fund was to support rubber farmers everywhere and introduce new breed of rubber trees.

The disaster and difficulties happened to Mairiang people were important lessons learned. The lessons gave them much experience, knowledge, and skill to live in the world with alternative ways to solve any problem may happen to them.

Therefore it might said that lesson of co-encounter with problems is one of internal factors that affects the occurrence of Mairiang Community Development and Study Center. This accords with a study of Anek Nakhabuttra (1990: 29) that the occurrence of learning networks was caused by people who encountered various problems together and solved these problems by themselves. The successful and failed experiences caused the occurrence of potential in learning how to solve problems together. It also accords with the concept of academic persons (Prayad Chatupornphithakkul, 1995: 122 ; Sunantha Phutthima, 1996: Abstract ; Pan Kimpee, 1997: 94-110) and the view of Parichart Walaisathian (1999: 315-316) that learning networks of villagers in community caused the exchange of knowledge among people, activity groups and communities that would lead to analyze problems and needs of community.

### **(1.3) Local Culture Background**

As the landscape of the southern region is different from other regions' landscapes of the country. This made southern people able to contact with the outside world easily for a very long time. (Chattip Nartsupa and Poonsak Chamnikompradit, 1997: 45). Learning process development and cultural exchange with other groups of people happen continuously. Many provinces in the south are places for trade centers, ports, and transportation terminals. Diverse experiences have been collected by southerners and become skillful on management, trading and leading.

" We are discussing on having only rubber plantation for our career and we agree that we should have more things to do. There are many things that we can not do such as to make community economy better. We lost everything to other people. We have been done everything for other not for ourselves. We do not want our future to be controlled by others.

(Prayong Ronnarong, interviewer)

Mairiang community is accepted as the first community to develop the community masterplan which became "Original Model of Community Master Plan" to other communities. (Wichit Nantasuwana, copied document). The master plan was drafted in 1995 And implemented during 1997-2001. The plan is terminated in October 2001. And the community second development plan is in the process of developing.

Therefore it might said that local culture is background one of internal factors that affects the occurrence of Mairiang Community Development and Study Center. This accords with the concept of academic persons (Anek Nakhabuttra, 1990: 38-53; Chuchart Liamwanit, 1994: Abstract) and the research of Prayad Chatupornphithakkul (1995: Abstract) on Learning Networks of Alternative Agricultural System of Community. The result of this research indicated that learning

networks of alternative agriculture of community was established under the condition of context change of community by which local tradition was the main condition to support the occurrence of learning networks of alternative agriculture of community.

#### **(1.4) Leadership**

The group of twelve people was the good example of being potential leader of the community. They are brave, self-confident, risky and trustful. They are information seekers, information providers and facilitators. Their critical thinking to create alternatives and solutions always solved problems and difficulties happened. Their performance can be seen from their initiatives on developing new minor careers and supplementary jobs for the members.

" The idea of developing the center is good, we have a good leaders who can bring people to work together by his learning process of sharing experiences. They used activities based to develop teamwork".

(Suwit Pewnuan, interviewer)

"I think that it is nice to have the center which we can think together, work together and share the ideas with each other. Mr. Prayong is the great pusher and a good model of young people. He is always invited to share his idea and experience by other people outside the community".

(Teerapong Bannarat, interviewer)

However, the group leaders are also flexible to the situations and environments. Many evidences proved that they are outstanding leaders especially, Mr. Prayong Ronnarong who is an important leader of the group. He won many prizes of honor. Therefore it might be said leadership is one of internal factors that affect the occurrence of Mairiang Community Development and Study Center. This accords with the concept of some academic persons (Prayad Chatupornphithakkul, 1995: 280 ; Pan Kimpee, 1997: Abstract)

## **2) External Factors**

### **2.1) Single Economic System with Emphasis on Export**

In 1962 Mairiang Sub-district was hit by windstorm, then villagers were supported by state to cultivate *Hevea brasiliensis* as economic plant. So this rubber became main occupation of Mairiang villagers. They used almost plots of land to cultivate this plant. Unfortunately price of this plant was uncertain, changed up and down and depended on world market price and middlemen. Villagers could not know situations of world rubber market, so middlemen controlled rubber price freely. In 1969 rubber price was very low. However villagers had no choice but sold their product without bargaining with mediators. At this time they were in serious trouble because they had not enough money to spend for living and for their children's education fees. Some of them encountered life crisis, big loan and became bankrupted. This caused their gathering together to solve all problems and establishment of community organization.

“At that time government encouraged people to cultivate rubber as main product. There was only rubber cultivation. Chemical fertilizer, weed and grass killers were used..... Rubber was planted in long line. All families spared their plot of land for rubber plant and rice farm was reduced gradually.”

(Prayoon Ronarong, interviewer)

Therefore it might be said that single economic system that emphasized on export is one of external factors that affects the occurrence of Mairang Community Development and Study Center. This accords with the concept of academic persons (Prayad Chatupornphithakkul, 1995: 122 ; Sunantha Phutthima, 1996: Abstract ; Thongphon Jetanawanit, 1993: 72 ; Wichit Nanthasuwana, 1999: 88 – 89) and the research of Pan Kimpee (1997: Abstract) on Development of Learning Networks of Non – Formal Educaion for Self –reliance of Community. The result of this research shew that distribution of new concept about state development by focusing on export promotion of single agricultural products was one factor that affected development of learning network of non–formal education for self–reliance of community.

## 2.2) Monopoly of Mediators

Since villagers in Mairiang community emphasized on single agriculture for export, economic structure of Mairiang community depended on mediators who were the middlemen of producer and consumers. These mediators were rich and knew how to do business and information about demands of para rubber marketing both in and out of country. This helped them know marketing condition and mechanism. And because of this rubber gardeners in Mairiang community were advantaged by them by forcing rubber price down, hoarding for speculation and by ganging up to propose prices that were power than market prices. All these factors caused the gathering of villagers to set up Mairiang Agriculturalists’ Group that was changed to be Mairiang Gardeners’ Group and becomes Mairang Community Development and Study Center at present. The aim of villagers’ gathering was to overcome being taken advantages by mediators and to cut the step of mediators out of business, allowing producers contact with distributors directy.

“It was true that for the first time we organized group because we expected that low price of rubber was caused by mediators. These mediators used various techniques to force rubber price down..... They bought for cheapest price but sold at a high price. They got big profit, while gardeners got big lost.”

(Piangphen Srithammasit, interviewer)

Therefore it might be said that monopoly of mediators is one of external factors that affected the occurrence of Mairang Community Development and Study Center. It is regarded as continuous factor of single economic system that emphasized on export as explained earlier. (Prayad Chatupornphithakkul, 1995: 122; Sunantha Phutthima, 1996: Abstract; Thongphon Jetanawanit, 1993: 72; Wichit Nanthasuwana, 1999: 88 – 89).

### 2.3) Support from Outside Organizations

From the analysis of factors that affected the occurrence of Mairang Community Development and Study Center, it has been found that getting support the following outside organizations: government organization, non-government organization, business organization, academic organization and other community organizations affected the occurrence of Mairang Community Development and Study Center.

These organizations supported the center by giving assistance, cooperation and coordination in the forms of knowledge, equipment, place, budget, suggestions, field trip, training, seminar and others. This caused the motivation of gathering of villagers to establish Mairaing Agriculturalists' Group, Mairaing Gardeners' Group and Mairang Community Development and Study Center respectively. (as details given in 4.3.4)

Therefore it might be said that support from outside organizations in one of external factors that affected the occurrence of Mairang Community Development and Study Center. This accords with the concept of academic persons (Anek Nakhabutra, 1990: 38 – 53; Somphan Techa-athika, 1994: 78 – 81 ; Wichit Nanthasuwan, 1996: 45 ; Arunn Kaewtapee, 1998: 18 – 20) and the research of Prayad Jatuphornphitakkul (1995: Abstract) on Learning Networks of Alternative Agriculture of Community, as well as the research of Pan Kimpi (1997: Abstract) on Development of Learning Network of Non-Formal Education for Self-reliance of Community. The result of this research indicated that support from related outside organizations was one condition of occurrence of learning networks.

**Table 6 :** Conclusion of factors affect the occurrence of Mairiang Community Development and Study Center

Factors	Supporting Evidence
<p><b>1. Internal factors</b>  <b>1.1 Social Relationship</b></p>	<p>The relationship of Mairiang community is a primary relationship that can be seen in the forms of kinsfolk relationship and occupation relationship. This causes the identical structure of economic and society. It is the relationship of people who have the same occupation and similar experience, concept and local wisdom. It is a primary factor that leads to meet, talk, consult, gather and develop to be Mairiang Community Development and Study Center.</p>
<p><b>1.2 Lesson to Face Problems Together</b></p>	<p>In 1962 Mairiang community was hit by windstorm. At that time rubber plantation was the main plant. Unfortunately price of rubber was fluctuated. This caused the problems of living, debts, education fees of children and sale of inherited plot of land for rubber plantation. Because of these problems villagers gathered to develop Mairiang Community Development and Study Center.</p>

**Table 6 : Conclusion of factors affect the occurrence of Mairiang Community Development and Study Center (cont.)**

<b>Factors</b>	<b>Supporting Evidence</b>
<b>1.3 Local Culture Background</b>	Since geography in the south is peninsular, so it is easy to contact with outside world. People in the community can also learn and interact with other people continuously. So Mairiang villagers are idea leaders, brave to express their ideas, not backward in practice, accept the truth and dare to find out the way to solve problems by themselves. This causes the gathering of them to develop Mairiang Community Development and Study Center.
<b>1.4 Leaders</b>	The followings are qualifications of leaders of Mairiang community : leadership, clear concept of working, open-minded to accept other people's ideas, flexible adaptation to different situations, ability of administration. These characters of leaders are accepted by villagers that affect the gathering of villagers' group to develop Mairiang Community Development and Study Center.
<b>2. External factors</b> <b>2.1 Single Economic System with Emphasis on Export</b>	When Mairiang community was hit by windstorm and later was encouraged to plant para rubber. People in the community then changed their economic system into single economic system that emphasized on only export. This impacted economic stability of villagers that caused economic crisis in the community. Because of this villagers gathered to develop Mairiang Community Development and Study Center.
<b>2.2 Monopoly of Mediators</b>	Since economic structure of Mairiang community emphasized on export, it was monopolized by mediators. Villagers did not know about marketing and distribution. They were only producers. But Mediators were mechanism to link between producers and distributors, so they could fix the prices freely. Because of advantage being taken by mediators, villagers gathered to develop Mairiang Community Development and Study Center.
<b>2.3 Support from Outside Organization</b>	Because of accomplishment of operation of Mairiang Gardeners' Group, other organizations realized the potential of these villagers, so they were supported in various ways: knowledge, suggestions, budget and others. This support motivated them to gather to develop Mairiang Community Development and Study Center.

### **4.3 Resource and Environmental Management for Self-Reliance of Mairiang Community Development and Study Center**

As this study aimed at studying learning network of resource and environmental management for self-reliance : a case study of Mairiang Community Development and Study Center. The sub-objectives were to study characteristics of Mairiang Community Development and Study Center, learning process of Mairiang Community Development and Study Center, five-party-organizations' took part with Mairiang Community Development and Study Center and the ways of sharing experiences of each other. The details of each topic described as follows:

### **4.3.1 Features of Resource and Environmental Management for Self - Reliance of Mairiang Community Development and Study Center**

After reviewing literatures in chapter two, the researcher set the theoretical framework to study the methods of resource and environmental management in order to develop them to be accepted by the conservationist.

It was suggested that laws and regulations with systematic administration are needed for resource and environmental management. Therefore, the researcher decided to apply three principles of resource and environmental management namely; policy formulation, administration and practice of projects and activities.

Mairiang Community Development and Study Center was founded in 1962 by a group of rubber farmers with the single purpose, to solve the problem of low-price rubber and expanded to multi-purpose to deal with some other problems related to resources including plants and animals in 1992, so features of resource and environmental management presented two phase which can be described as follows:

#### **1) The First Phase (1961 – 1991)**

In the first phase, a group of rubber farmers managed their natural resource and environment at the policy level, administration and practice as follows:

##### **(1) Policy**

The new way of planting rubbers started after the windstorm disaster in 1962. After the disaster rubber farmers grew the rubber plants with well support from the government and rubber plantation became their main career and income. The new ways and innovative approaches were introduced with the selection of new rubber breeding, the introduction of other plants to grow in the rubber plantation and fertilization.

Many steps of the process of producing sheet-rubber were to please the customers but it was not enough since the most important factor influenced the price of raw sheet rubber was the world market on rubber which always depended on world economic situation. The farmers were seriously influenced by the situation because the first products from the rubber plants were very low, five to seven bath per kilogram. They decided to form a group of twelve farmers to find out causes of the problems happened to them. They found that the problems of limited money to invest, lack of information were the main causes of low price of rubber since the price of rubber was set by the mediators. The purpose of a group of farmers was to have power of bargaining over the mediators who always took advantage from them by setting the price of rubbers.

Problems of management still caused problem to happen so the group of twelve farmers separated into two groups after working together for a while. The first group was named "Mairiang Agriculturalists' Group. Another group was "Mairiang Gardeners' Group. The purpose of forming a group was similar to the first time, to solve the problem of low price products. In 1994, they successfully constructed a rubber factory to process liquid rubber from the plantation to become dried sheet rubber, Having their owns factory, the farmers could control the quality of their product and the price without the mediators.

“We have been operating our factory successfully, We are proud of it and happy with it, We are able to set the price and quality of our own rubber, we did it well”

(Arom Ratpiboon, interviewer)

The low price of rubber caused by less demand of the market could not be controlled by the group as before. They tried to analyze and found that the rubbers plantation had been done for years by their ancestors without any plan, policy, clear target and appropriate direction. In order to improve the way of managing rubber plantation the group joined with some other groups of farmers to develop the rubber plantation region plan. The main purposes of the plan were to determine policy framework and direction of rubber plantation in order to reduce problem of different quality of rubber and eliminate the profiteers who always caused low price of rubber.

“We developed rubber plantation plan based on the lesson learned from Mairiang and other rubber plantation groups in Thailand. It is our long ranged and sustainable plan that can help forecast own future without dealing with political issues concerned”

(Prayong Ronnarong, interviewer)

The development plan was then introduced to different agencies concerned to ask for support in order to propose to the parliament and constitution court. The attempt was failed because of several obstacles, however, the participation in developing rubber plantation plan of the group of rubber farmers proved that they potentially learned and analyzed information concerned to determine their own direction and future of rubber plantation.

In conclusion, at the beginning of Mairiang Community Development and Study Center started with the managing of resource and environment due to the problem of low price products and mediators. Finally, they found that the problems of low price products and main factors are mediators. There were more factors such as the demands and fluctuations of the rubber domestically and internationally.

To solve and handle the fluctuations of rubber situations, the master plan of rubber plantation was developed but it was unable to announce.

## **(2) Administration**

The group of Mairiang rubber farmers was formed in 1984 after the joint of two groups, rice farmers and the unit of agriculture 2. The purpose of the group was to improve quality and the price of sheet rubber with the advice from the office of agriculture, Chawang district. Without strong intention of the members and sensibility of market situation, the group of farmers could not control quality of the rubber and finally the group was collapsed.

The group of twelve people joined together once again to analyze causes of failure and concluded that controlling quality, weight and price of sheet rubber was very important to bargain with the mediators. They decided to produce dried sheet - rubber which was to invest on some modern machines.

The idea was shared among the farmers by the core members of the group of twelve. At that time, the price of rubber was very low so the majority of rubber farmers agreed on the idea proposed and registered a legal group on June the first of 1984.

"Prayong Ronnarong is one of rubber farmer in Mairaing Group who confronted with a low price crisis caused by mediators, he tried to overcome the problem and found the way how to solve it ... he had been to The Rubber factory at Naborn Rubber Organization and leaned the production process in detail with his friends. They come back home happily and decided to apply the idea from the way. He searched for support and acceptance from other farmers wherever they joined each other. The idea was being shared for almost two years before it was accepted widely since the low price situation of rubber happened at that time."

(Khondee Si Sangkom Magazine, 1995:38-40)

We can observe that the way of resource and environmental management in administration was created by a group of twelve members. The principle of the operation was integrated through traditional way of living, belief and culture of the community. Innovation was introduced to more groups of people and individuals by talking among them continuously and was accepted at about 3 years.

### **(3) Practice**

With the purpose of forming a group to solve the problem of rubber farmers. Mairaing group collected money from the members to buy materials equipment, machines and to construct a factory to produce good quality of sheet rubber in order to improve the price of rubber set by the mediators. There were 20,318 shares of 1,015,900 bath for constructing of a new factory to produce dried-sheet rubber at 2.5 tons per day (In the first year, 50 per cent of shared, 500,000 bath was spent and three years later 100 per cent of share was collected). In October of 1984 the factory started to operated and produced 2-5 tons per day in 1987.

The production process was successful so the core leaders of the group and the members paid more attention on marketing. They studied rubber market situation and found that the price of qualified dried sheet rubber at the Bangkok Port and the raw-sheet rubber sold by the farmers were 6 bath different so that they tried to produce qualified rubber and sold directly to the exporters at the port.

After some basic problems of rubber plantation were solved, thought of the way to develop a long - range plan with the purpose to promote Thai rubber farmers in every area of the country was introduced.

The policy and plan was implemented in coordination with public and private agencies. The potential groups were formed to have their own factory to produce good quality product. They organized a meeting to select 7 potential groups in 6 districts of Nakorn Si Thammarat province before proposing the project to the province for budget. The province approved their proposal and seven factories were constructed in the first year and four factories were constructed in the following year. Eleven factories have been operated until now.

## 2) The Second Phase (1992-2001)

The methods of second phase of resource and environmental management at policy level administration and practice were as follows:

### (1) Policy

As mentioned in the first part that the land in Mairiang district was transformed from forest area into rice field area during 1897 to 1962, then the rice field area was changed into plantation during 1962 to 1992. The changes made community economic structure depend mainly on rubber plantation. The farmers way of living and income depended on the price of rubber until the experience was learned and development of group as a center of study for all rubber farmers in every region of the country to learn and apply for themselves was made.

Mairiang group leaders had learned how to succeed with many problem solving based methods. They started from analyzing the cause of problems although some problems were unable to solve such as problems dealing with political issues, business and illegal power.

"When we failed to develop the master plan for Thai rubber, we went on analyzing causes of problems. Sometimes the problems are beyond our capability to solve for examples: world market, climate and government's policy. We could not determine these factors"

(Prayong Ronnarong, Interviewer)

The group realized that rubber plantation was an uncertain career. They decided to change from being a rubber farmer group with single purpose, rubber oriented to be a multi-purpose group named " Mairiang Community Development and Study Center" but still kept rubber plantation activity as one of the main activity of the Center.

"The most important thing that we can determine is ourselves, we don't need to depend ourselves on rubber. If we think about our ancestors in the last 20 years they did not have rubber but they could live ... to compare with our lives which we can forecast the future ... it made us to think of establishing Mairiang Community Development and Study Center."

(Prayong Ronnarong, Interviewer)

It was suggested that Mairiang Community Development and Study Center was an organization established to solve any problem happened in Mairiang Sub-district. The main policy was to support any people to help themselves using education as a tool to develop people, so the Community Learning Center was established to support them to learn and solve their problems by themselves effectively. There were three ways of learning at the Center:

1. Basic general education learning (provided by Non-formal Education Department). It was to support people to study general subjects up to at least secondary level (M.3) because general subjects were needed to use in every day life of new era.

2. Providing different careers responding to community interest with training places and knowledge required for skills needed.

3. Providing modern knowledge needed for the new era such as economy, politics, laws, co-operative and management.

1) Economy: People needed to know economic system of family, community, district, province, region, country and world since we are in the global world.

2) Society: People needed to understand each other and live peacefully together.

3) Politics: People needed to know their rights, responsibilities and values.

4) Laws: People needed to learn necessary laws to protect themselves from being cheated by others.

5) Co-operative: Co-operative system is useful for the members to solve their problems dealing with every career.

6) Management: Systematic management of oneself would help facilitate people to have well plans of doing anything in their lives, and basic accounting system for their own career in particular.

## **(2) Administration**

Mairiang Community Development and Study Center was administered by a nine-member board.

- |                                |                                   |
|--------------------------------|-----------------------------------|
| 1. Mr.Prayong Ronnarong        | chairman                          |
| 2. Mr.Uthai Torrarit           | vice-chairman                     |
| 3. Mr.Arom Ratpiboon           | vice-chairman                     |
| 4. Mr.Kajorn Tipaphong         | member                            |
| 5. Mr.Manote Promkum           | member                            |
| 6. Mrs. Piengphen Srithammasit | member                            |
| 7. Mr.Somkiat Tipsuwan         | member                            |
| 8. Mr.Suwat Maneemas           | member and secretary              |
| 9. Ms.Watcharaporn Mairiang    | member and assistant to secretary |

Each member was selected to represent his/her village while one of the member was selected from one who was able to work as a secretary and responsible for district development plan and implementing.

Mairiang Community Development and Study Center managed under the framework of Mairiang Gardens' Group. All activities are managed by the Center of learning to facilitate the coordination with both public and private agencies. The activities provided started step by step in order to make the villagers understand the change and participate freely with positive attitude.

Courses offered by the center were widely determined.

1. General Subjects: The non-formal education curriculum was used.

2. Compulsory Subjects: Information and knowledge needed for the changeable situation of the society and environment would be considered.

3. Alternative Subject: Knowledge and skills required by villagers would be provided with prioritized process.

After the operation under Mairiang Community Development and Study Center, the members had learned by activity-based learning and they were able to initiate knowledge by themselves by using information to support. They could analyze causes of problems, choose the ways to solve and prevent problems to happen in the future. The Center could collect data related to community's needs and brought them to develop community development plan.

In 1992 the Center organized a forum to share the idea and experience among the members. They established Mairiang Gardens' Group, constructed a rubber factory after organizing the forum. However, the problems could not be eliminated but became more serious at the period of economic downturn in the country.

The group agreed to form Mairiang Community Leaders Council in October 2, 1998 in order to manage their projects and activities effectively.

Mairiang Community Leaders Council was established as a body to systematic management of the Center with concrete plan and suitable people to be responsible. Five people from each village were selected as the leaders so there were 40 people represented 8 villages in Mairiang sub-district. The leaders started their jobs by surveying each family in detail. The result of their surveys was used to set a problem solving process in order to develop self-reliance community.

The purpose of establishing the council was to share the ideas, transfer knowledge and experience of local persons in different fields related to community of life. It also served as an information center collected problems and demands of villagers from every family of the sub-district

"We established Mairiang Community Development and Study Center as a macro body where Mairiang Gardens' Group was one of the activities under the Center... After implementing for a while we learned that nine people were not enough. We asked each village to recommend ten people to be their representatives, 5 people as representatives and other five people were temporary representatives."

(Prayong Ronnarong, interviewer)

In Mairiang Community Leaders Council, there were two sections : administration section and council affairs section.

1. Council Affairs : There were 45 members with names of the committees listed below ;

- |                          |                               |
|--------------------------|-------------------------------|
| - Mr. Arom Ratpiboon     | chairman                      |
| - Mr. Pradit Khoontong   | 1 <sup>st</sup> vice chairman |
| - Mr. Manote Promkhum    | 2 <sup>nd</sup> vice chairman |
| - Mr. Suchart Narkthewan | secretary                     |
| - Mr. Satit Chantamas    | assistant to secretary        |
| - 40 Members             |                               |

The forty members of the committee were selected from each village to the position of four year-period with the responsibilities as follows:

- Formulate policy.
- Appoint administrative committee.
- Appoint other committees as required.
- Approve plans and projects proposed by administration committee.

- Approve annual budget proposed by administration committee.
- Approve of the amendment of regulation concerned.

2. Administration Section: There were eight people in the administration committee listed below:

- |                            |                               |
|----------------------------|-------------------------------|
| - Mr. Somkoan Tipayasuwan  | chairman                      |
| - Mr. Kriangsak Chuchart   | 1 <sup>st</sup> vice chairman |
| - Mr. Ponthep Rampuey      | 2 <sup>nd</sup> vice chairman |
| - Mr. Nongrak Buadam       | 3 <sup>rd</sup> vice chairman |
| - Mr. Sangad Thepaksorn    | member                        |
| - Mr. Chawarit Singhaboong | member                        |
| - Mr. Teera Raksawong      | secretary                     |
| - Mrs. Suchin Jamjaras     | assistant to the secretary    |

The administration committee remained in the positions for 2 years period but after one year in the position half of the members would leave the position by randomly chosen system. The committee divided into 2 sub-sections, administration and development.

Administration sub-section was divided into 6 groups :

- 1) Development and networking
- 2) Budgeting and Account
- 3) Education and Learning of Community
- 4) Recovering sustainable farmers and environments
- 5) Funds and Community Welfare.
- 6) Business and Community Industry

The six-committee of the groups were appointed by the Council while development, networking, budgeting and account group were under supervision of vice-chairman for administration. Education and learning of community and recovering sustainable farmers and environments groups were under supervision of vice-chairman for education. Funding and welfare and business and community Industry were under supervision of vice-chairman for economy.

Development sub-section was divided into 5 groups:

- 1) Education
- 2) Recovering sustainable farmers and environments
- 3) Community health
- 4) Community fund
- 5) Business and community industry

The principles of the center management were: (Suriyan Suwannarat: 2001: 104-105)

1) The administrative committee was authorized to administer community plan and projects approved.

2) Administrative management was controlled by Mairiang Community Leaders Council selected from members of each village to approve plan, budget and appoint committee to monitor and evaluate the plan.

3) The Council analyzed the proposed projects in accordance with five areas: education, agriculture, community health, business and community industry, and community fund.

4) All administration and management system of the center were operated by members of the council. Representatives from the public sectors were invited to give advice and suggestions when necessary.

Besides, the administration and management of the Center mentioned earlier, the center also established "Mairiang Village Bank" in 1999. The bank was established as a mechanism of the Center to operate effectively with some funds to support. (Printed material)

Village Bank was a saving bank of the village managed by village people for village people. The principles of establishing the bank were to support themselves and guarantee the stability and progress of the bank. The bank board was respected by all members as honest, sacrifice, transparent and accountable group of people.

To form trustfulness of the bank to the members, the bank used fair principle to guarantee corruption including framework and participation of the different groups of member.

Rules and regulations set for the bank were to form the stability and progress of the bank business of the bank focused mainly on community economy, not to deal with high profit sharing. Village bank was a small learning organization for all members related to the king's idea on community development which was stressed on the community's strength. The strength would be built by members themselves not by the outside organization. The academics agreed that teamwork was needed.

To strengthen the community, the members should follow strictly on the rules and regulations or resolutions of the meeting, respect to the other members, thoughts, opinions and treat each other equally. The learned persons were responsible to give wisdom, advice and suggestions to members in order to help them have good and stable careers. Money would be spent reasonably without any way to destruction.

Mairiang Village Bank was managed by 12 village bank committee with the chairman, Mr.Sangad Thepaksorn. Name list of the committee members was as follows :

1) Mr. Sangad Thepaksorn	chairman
2) Mr. Tawee Siritat	vice-chairman
3) Mrs. Suchin Jamjarat	secretary
4) Mrs. Chawewan Puntong	assistant to secretary
5) Mr. Thammarat Jina	treasurer
6) Mr. Ponthep Rampeuy	assistant to treasurer
7) Mr. Satit Chantamas	registrar
8) Mr. Charoun Ubon	inspector
9) Mr. Kriangsak Chuchart	dept pursuing
10) Mr. Sunee Panalee	receptionist
11) Mrs. Nongrak Buadam	1 <sup>st</sup> public relation
12) Mrs. Orrawan Jamjarat	2 <sup>nd</sup> public relation

Rules and Regulations of Mairiang Village Bank are as follows:

#### 1. Membership

1) General members: Anyone who wants to apply as a member needs to fill an application form with 20 bath for first registered fee.

2) Specific members: Anyone who is invited to join as an advisor to the Bank without any share held.

3) Extra-members: Any organizations both juridical person and non-juridical person can apply as a general member with the approval of the group in written document.

2. Share holder : Every share of Mairiang Village Bank costs 10 bath.

- 1) First entry : The first share of Mairiang Village Bank costs 10 baht.
- 2) Income share: the members trust on themselves that they will add at least 10 shares if they gain more income.
- 3) Debenture: the borrower should hold at least 10 shares.
- 4) Special share: members are able to add more shares without limit.

3. Withdrawal: the members who withdraw their shares within twelve months will not get their dividend.

4. Deposit –Withdrawal

- 1) Mairiang Village Bank opens for deposit and withdrawal both saving and fixed deposits on official Bank day.
- 2) The Bank determines the ratio of interest as follows:
- 3) Fixed deposit for 12 months : percent per year (1baht higher than Saving Bank)
- 4) Fixed deposit for 6 months : percent per year (1baht higher than Saving Bank)
- 5) Withdrawal should be informed 3 days in advance.

5. Borrowing: Any members who want to borrow would be able to borrow not over three times of their share hold and they have to follow the criteria below :

- 1) Short period borrowing (urgent) will be allowed to borrow not over 3000 baht and return within 3 months.
- 2) Medium period will be allowed to borrow not over 10,000 bath and return within 12 months.
- 3) Long-term borrowing will be allowed to borrow not over 15,000 baht and return within 18 months.
- 4) The authorized borrowers are the members of the Bank who apply to borrow by themselves with two guarantees and they should follow the criteria given above. The amount of money will be approved by the committee within 15 days.
- 5) Payment of capital and interest due will be at agreed date in the contract.
- 6) The Bank sets the ratio of interest at 1.25 per month.

6. Dividend: March 31 of the year was the last account date and the dividend will be given as the criteria set below :

- 1) Dividend depends on number of shares in twelve months with 13 percent of the capital.
- 2) 10 percent of the rest of profit is arranged as reserved fund.
- 3) 20 percent is allocated to education fund.
- 4) 50 percent is allocated to welfare.
- 5) 10 percent is for the committee compensation.

6) 10 percent is for office maintenance.

7. Release from being membership. The members will be released for the reasons below:

- 1) die
- 2) resign or hold less than 10 shares
- 3) dismiss by the resolution of the committee
- 4) being bankrupt person or being sentenced to jail
- 5) being inefficient person

8. Operation of the bank

1) The Bank opens on every second and seventeenth days of a month from 10:00 to 15.00 hours.

2) The Bank's manager has to inform the bank's performance to the chairman in order to circulate to all members monthly.

9. Committee voting and advisory committee appointment

1) Members of the bank vote each other among themselves for 6 person-committee and 3 specialists of non- members.

2) The meeting appoints at least 3 inspectors from the members or non-members.

3) Three members of the committee are selected randomly out of the position and 3 members are voted to replace in the following year.

4) Members of the committee with good performance can be voted to the position when the period terminates.

5) Any member of the committee who is voted 3 periods continuously will be changed the statue to be a permanent member of the committee until the age of 65 and will get compensation at the amount of the last salary until dead.

6) Members of the Bank select not more than 5 non- members to be senior advisors of the Bank.

10. At the meeting, the agenda of rules and regulations amendment can be set appropriately.

11. Release from the position of the committee

- 1) Terminate
- 2) Release from being the member
- 3) Release by the meeting solution

### **(3) Practice**

The Practice of natural resources and environmental management for self-reliance of Mairiang Community Development and Study Center responded to the policy to promote live long learning needed by the community. Mairiang Community Leaders Council was an effective organization. The details of procedures and process of practice were analyzed below:

#### **1. Adjustment of new concepts**

The board of Mairiang Community Development and Study Center met together and analyzed the Center's framework and direction for the future. They

concluded that Mairiang community people had to change from depending on rubber as their single career to earn their living with more than one career, rubber plantation. The board also reviewed the way of life of the rubber farmers in the past and found that what they have done was to respond to the demands of others, for examples, market demand, politician's demand, academic demand, but not for themselves. In the future, the board agreed that the community people had to do for themselves in order to strengthen their community and be independent.

To adjust themselves, the community people needed to know their status, potential and ability. Their behaviors needed to be modified by not to aim their goals at being rich and sticking on materialism as they did in the past and they should be adaptive with the changing world.

“Our plan started at learning but before we learned we need to adjust and modify our behaviors by not to think only about oneself or being rich which will lead to the future ... and many more people agreed on the idea”

(Sahat Lertkrai, interviewer)

In the process of adjusting to the new pattern of thinking, member of the council discussed among themselves and distributed the idea to each of eight villages in Mairiang sub-district.

## 2. Data Survey

The center organized a community leader forum to collect and learn data in information where the members of the council discussed on the community problems, areas, resources and potential of people in each village. The data and information collected in the first survey were not correct and reliable because there were different among the data from each source so they decided to have the systematic community survey.

“From the monthly unofficial discussion, we found that the same data and information raised by the different groups are not matching... we really don't know the correct data but we need it ... finally we decided to collect again for the concise data of humans, resource, environment to support further actions.”

(Kajorn Tiphaphong, interviewer)

The center collected community data by surveying two levels of data: family level and community level. The members of the Council collected the data of his/her own village using the same questionnaire and forms designed by the council. The data in family level were general information, monthly expense and total of the expense per year (January to December). They categorized details of the expense into nine categories:

Category 1: Social expense; any expense for social activities in the community such as, funeral ceremony, wedding anniversary etc.

Category 2: Expense for foods; any expense for daily meals such as, rice, beef, pork, chicken, eggs, fish, sea foods, vegetables, etc.

Category 3: Expense for ingredients; any expense for ingredients, instant foods such as, sugar, sauce, plant oil, instant noodle, etc.

Category 4: Expense for drinks and biscuits; any expense for water, ice, fruit juice, milk, cigarettes, biscuits, etc.

Category 5: Expense for medicines; any expense for drugs to cure some illnesses.

Category 6: Expense for clothing and daily utilities; any expense for shirts, trousers, blankets, plates, forks, spoon, toothpaste, brush, soap, shampoo, electricity, water supply, etc.

Category 7: Expense for education; any expense for education of children such as fees, transportation, meals, books, clothes, stationery, etc.

Category 8: Expense for production; any expense for fertilizer, labor insecticide, materials, seeds, product transportation, etc.

Category 9: Expense for debt; any expense for paying debt including debt of Farmers and Co-operative Bank, village co – operative, village fund, etc.

The data and information at the community level (of each village) comprised 14 sections:

Section 1: Governing area includes house number, name of village, name of village leader of each village.

Section 2: Family / population include number of village, name of village, number of family, number of population, number of male, female population, number of inefficient people etc.

Section 3: Family data includes number of all members, number of member who finished school, number of unmarried people who work outside the community, number of unemployed, number of elderly, number of sick people, number of babies, number of school children etc.

Section 4: Economic data and occupation include number of family categorized by occupation.

Section 5: Resource / product / land used include number of land, public area, used land, owned land, land for rice, land for vegetable, land for fruit etc.

Section 6: Income data includes number of family and income per month of each family, number of families with single career, number of families with more than one career.

Section 7: Sources of water include number of private underground wells, number of public underground wells, number of water supply units, number of swamps, number of canals etc.

Section 8: Family income includes income per year from different activities of the families.

Section 9: Income and debt data include total income per year, debt per each family from different sources.

Section 10: Infrastructure data includes number of temples, number of schools, number of health units, number of nurseries, number of post offices, number of telephones etc.

Section 11: Groups and community organizations include number of organizations with years of establishment, numbers of members, numbers of revolving fund etc.

Section 12: Problems / causes of problems / solutions include categories of problem, causes and resolutions separately.

Section 13: Local intellect includes name of resource persons, and specification of each person.

Section 14: Herbs include name of each kind, characteristic, method of medicine production and breeding.

The result of the survey revealed that family expense within one year was spent for foods, medicine and health cares respectively. Mairiang Community Leaders Council analyzed deeply on the survey result of family expenses, particularly the expense for foods. They found that food consumed by the people in the sub-district could be produced by themselves so they did not need to pay all of foods consumed. The expense could be reduced and the income of each family would be increased. At the same time, the consumption of medicine and health care could be reduced by well planned management of health care service.

In case of the expense, they also found that people in the sub-district had to pay interest for their debts to the bank, especially, Farmers and Co-operative Bank. There was up to 699 million baht of the debt which needed to be paid, and the council had to find the way to manage the crisis.

“ In one year, the family expense was mostly on foods and health cares. We surveyed and found that half of foods consumed we could produce by ourselves. Within two years, we also found that Mairiang people were killed by cancer, heart disease and diabetes, accident respectively. We can observe that consuming behavior of the people caused illness, so we should have a well plan for health care.”

(Kajorn Tiphaphong, interviewer)

### 3. Planning

The Council also found from the survey that the reason of losing much expense on food, medicines and health cares, and debt repayment because the people were not developed to gain any knowledge and skills on managing their own lives. To help them learn and be able to manage themselves, the council needed to understand the demands and characteristics of them and information concerned were necessary. By analyzing the survey, the council classified the people into three groups based on the demands to change their lives. (Prayong Ronnarong, interviewer; Kajorn Tiphaphong, interviewer; Sa-hat Lertkrai, interviewer)

1. No need to change group. This was 10 per cent of group of the people in the sub-district who viewed themselves as a stable group.
2. Need change for better living group. This was 10 percent of group of people who viewed themselves as an unstable group.
3. No need to change but need better living group. This was 80 per cent of group of people who wanted to have better living but did not want to change their lives.

Having considered in details, the council found that the first group was a group of stable social status people who did not need to change while the second group did not enjoy their social status and needed to change for better living. The third group was a passive group, they did not participate in any activities or projects, of the community until they learned that the activities or projects were successful.

From the analyzed result, the second group was a group of people who wanted to change and most of them were the members of the Council. The third group was willing to join the activity if it was successful. The Council decided to search for appropriate methods to manage community based on the result of the survey or basic problems of the community,\* community resources and appropriateness of lands include the failure in the past (cause-effect analysis with solutions). The Council concluded that five-facet operation plan would help sustainable develop of their community. The five-facet plan was as follows:

**1. Learning:** The first important task to do was to determine learning plan for the people in the sub-district because people needed to learn systematically of the correct learning process.

**2. Sustainable Way of Cultivation:** The sustainability of cultivation was required for the people in the community since the environments were destroyed in the past. Integrated agriculture which better care of environments could help develop both income and natural capital to remain.

**3. Traditional Thai Medical Doctors:** Based on the result of the survey, The Council considered that traditional Thai medicine was one of their alternatives to reduce high expense on medicine and health care of the people. The campaign, "Taking medicine as having foods, having food as taking medicine" was promoted to integrated agriculture which supported people to grow non-toxic vegetables and herbs for themselves. The traditional Thai medicine center was opened to serve the community with many services provided.

**4. Community Industry:** The community industry plan was introduced to encourage the people to process their own raw products instead of selling to the factory as they did before. The village and community networks were formed to manage the task.

**5. Community Fund:** Mairiang Village Bank was established with a community fund to replace former source of fund (The Bank for Agriculture and Co-operative) for the people in the community because interests of the bank they borrowed would be circulated in the community. This idea initiated self-reliance economic system of the community.

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\* Basic problems of Mairiang community were as follows: (Summary of Mairiang Community Development and Study Center)

1. Lack of knowledge of youths due to;
  - Low income of family, parents could not afford for further education of their children.
  - Parents needed their children to work in the farms and fields as they have done.
  - Children could not compete in entrance exams for further education.
2. Poverty problems of farmers;
  - Lack of knowledge for the career development and environment reservation.
  - Because of natural crises.
  - Lack of agricultural infrastructure such as water sources, irrigation system.
3. Lack of areas, places and materials for learning.
  - Not enough areas, places and materials for learning both content and practice.
  - Not enough finance to support learning of content, practice and field trip required.

There were many concrete projects and activities operated to serve the five-facet plan:

- 1) Activities/projects related to education
  - community learning unit
  - traditional intellect of Thai teachers
  - community information unit
  - villagers forum
- 2) Sustainable agriculture and environment
  - career co-ordination unit
  - environment co-ordination unit
  - agricultural technology transfer unit
- 3) Community health care
  - traditional Thai medicine group
  - herbs for health group
  - community self-reliance for health
  - basic public health unit
- 4) Community business and industry
  - products processing
  - systematic marketing
- 5) Community funding
  - mairiang village bank
  - community fund

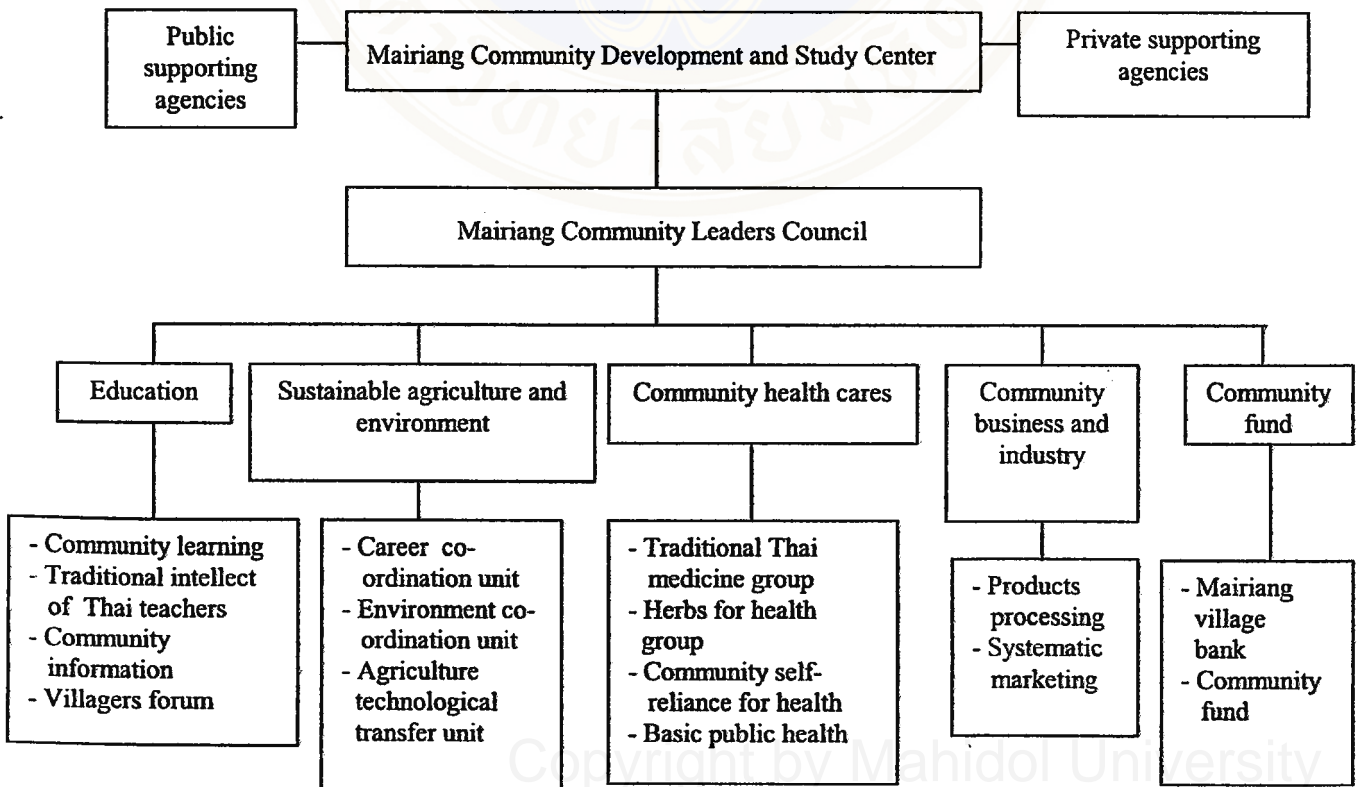


Figure 5 : Structure and plan of Mairiang Community Development and Study Center

#### **4. Training course preparation**

The operation of the Mairiang Community Development and Study Center plan was well developed according to information, base surveyed. The final goal of the plan was to develop sustainable self-reliance community, that started from the problem-based analysis and co-operative implementation. The Council designed the training curriculum to serve the five-facet plan for both community leaders and general farmers in order that they could find their own alternative careers without depending their future on the single career (rubber plantation) as before. About 10 -20 Rais (1,600 square meters equal to one Rai) of land of each family would be made for effective use. The training curriculum was divided into 2 parts depending on the participants attended.

##### **1) Training course for the members of the Council**

This course was to train the members of the Council to become community leaders. Forty participants were equipped with six skills of administration and management in order that they would be able to control and monitor community projects and activities. There were three courses with the details as below:

###### **Course number 1: Development of personnel and network**

The purpose of the course was to train the participants for good communication skill in order to work with other agencies and among other groups in the network successfully.

Content of the course comprised organization structure and personnel, organization management, public co-ordination and communication, co-ordination among other groups.

###### **Course number 2: Finance and accounting**

The purpose of the course was to train the participants with finance and accounting knowledge and skills to be applied for organization administration of each group.

Content of the course comprised types of accounts, the importance of accounts, systematic finance administration and management, principles of basic accounts.

###### **Course number 3: Community learning**

The purpose of the course was to train the participants to possess broad vision and sense of leader.

Content of the course comprised basic information collection, career administration and management, product analysis and research, product processing, marking, community learning process, community information collection and formulating of operational plan

**Course number 4: Recovering of sustainable agriculture and environment**

The purpose of the course was to train the participants to realize impacts of environment by the community.

Content of the course comprised integrated agriculture (new theoretical agriculture) using of non-toxic chemical substance, herbs, natural

cultivation, multi-level cultivation, water system management and economic use of water.

**Course number 5: Fund establishment and community welfare**

The purpose of the course was to equip the participants with knowledge and skills on establishing and managing fund for community welfare.

Content of the course comprised forms of fund, sources of fund, approaches to form community fund, patterns of community welfare.

**Course number 6: Community business and community industry**

The purpose of the course was to equip the participants with knowledge and skills of effective community business and community industry management.

Content of the course comprised community business, community industry, forming community economy by community industry.

The courses conducted by the instructors invited from public and private sectors and within the community. The methodology of teaching included lecturing, demonstrating, practicing and field trip. Name list of instructors was as follows :

- |                               |   |
|-------------------------------|---|
| 1) Mr. Prayong Ronnarong      | project manager                                     |
| 2) Mr. Kiang Kongkaew         | agriculture project owner<br>(Suan Khongkaew)       |
| 3) Mr. Prapat Chantara-Aksorn | village bank specialist                             |
| 4) Mr. Prayoon Chootong       | chairman of suan-nod district<br>saving network     |
| 5) Mr. Chan Sittirit          | multi-level cultivation farmer,<br>Kathoon district |
| 6) Mr. Chareon In-tongkum     | integrated agriculture specialist                   |
| 7) Mr. Fark Tree-tawal        | finance and accounting specialist                   |

Representatives from public sectors and services were;

- 1) Head of non-formal education unit, Chawang district
- 2) District agricultural official
- 3) Sub-district developer
- 4) District domestic animal official
- 5) District co-operative official
- 6) Manager of agriculture and agriculture co-operative bank
- 7) Provincial agriculture official

**2) Training course for general farmers in Mairiang District**

The goal of course designed for general farmers was to develop knowledge and skills of the farmers in seeking appropriate main career, minor career and other jobs required.

The eight courses of training was designed by the council and organized by the center. The study center was responsible for the content section while practicing section was held in appropriate places depended on the administrative team's decision. The administrative team was appointed by the council contacted

professionals, learned persons and intellects in different fields to give lectures and demonstrations. All activities were managed by the administrative team with some advice provided by Mairiang farmer group and directly reported to the council.

The eight courses were supported by the Community Investment Fund under Saving Bank and other sources including Mairiang community. The outcomes expected from the training courses were as follows :

1. Farmers have learned knowledge and skills and are able to develop their own main and minor career.
2. Products exchanged process in the community was initiated by the farmers without mediators.
3. Farmers have learned production process, management, environment reservation, sustainable development, community fund, community industry and community welfare.
4. All projects and activities such as production, processing, marketing would be developed into community business effectively with self-sufficiency.
5. Unemployed problem would be solved.

There were eight courses provided in accordance with land conditions, capability of personnel, and potential of existing resources. The detail of courses was in the following tables :

**Table 7 : Details of training courses for general agriculturalists in Mairiang sub-district**

Name of course	Details	Contents	Instructors
1. <b>Non-toxic cultivation by farmers for environment group</b>	- There were 35 farmers applied for the course and were trained for content for two days at the center before three-day practice at the Moo 2 practical unit	<ol style="list-style-type: none"> <li>1. Compost and organic fertilizer production process and fertilizer use</li> <li>2. Natural prevent and eliminate of insects by herbs</li> <li>3. Methods of breeding</li> <li>4. Net cultivation</li> <li>5. Harvesting, packaging, marketing and processing</li> </ol>	<ol style="list-style-type: none"> <li>1. Local learned person</li> <li>2. Official from the office of agriculture and nakorn Si Thammarat, agricultural college</li> <li>3. Local intellects and learned person from the network</li> </ol>
2. <b>Fresh water fish breeding by fresh water breeding group</b>	<p>- There were 45 participants attended the 2-day course for content at the center before 3-day practice at the practical unit, then 1,000 fish were provided for each participant to nurse at home for 4 months.</p> <p>- There was a monitoring evaluation process fo</p>	<ol style="list-style-type: none"> <li>1. Planning for well arrangement</li> <li>2. To germinate foods for fish</li> <li>3. Natural breeding and pseudo-breeding of fish</li> <li>4. Fish rearing and feeding</li> <li>5. Protection from diseases and care</li> </ol>	<ol style="list-style-type: none"> <li>1. Local learned persons from the network organization</li> <li>2. District fishery official</li> </ol>

**Table 7 : Details of training courses for general agriculturalists in Mairiang sub-district (cont.)**

Name of course	Details	Contents	Instructors
	<p>the participants if they passed and wanted to apply for their career they needed to register in order to have a quota control and price guaranteed.</p> <ul style="list-style-type: none"> <li>- Capital for investment would be facilitated by the group</li> </ul>		
<p><b>3. Traditional Thai chicken by Thai chicken group</b></p>	<ul style="list-style-type: none"> <li>- There were 80 participants attended the 2-day course for content at the center before 2-day practice at the practical unit, then 10 chickens were brought to raise at home of each participant.</li> <li>- Within 22 weeks 20 eggs would be returned to the</li> </ul>	<ol style="list-style-type: none"> <li>1. Shed construction</li> <li>2. Breeding selection</li> <li>3. Nursing young chickens</li> <li>4. Good management and reduce capital</li> </ol>	<ol style="list-style-type: none"> <li>1. District live-stock official</li> <li>2. Local learned persons</li> </ol>
<p><b>4. Growing mushroom with rubber tree sawdust by mushroom group</b></p>	<ul style="list-style-type: none"> <li>- There were 55 participants attended the 2-day course for content before 3-day practice at the practical unit, then the participants were given ten bags of mushroom strain to grow at their own homes.</li> <li>- Report to the practice unit.</li> <li>- There was a monitoring and evaluation process for the participants if they passed and wanted to apply for their career they needed to register in order to have a quota control and price guaranteed.</li> <li>- Capital for investment would be facilitate by the group.</li> </ul>	<ol style="list-style-type: none"> <li>1. Material selection for each kind of mushroom.</li> <li>2. Produce mushroom strain</li> <li>3. Grow and nursing.</li> <li>4. Harvest, package, process and marketing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Local learned persons</li> <li>2. Expert invited from Rajamongala Institute of Technology</li> </ol>

**Table 7 : Details of training courses for general agriculturalists in Mairiang sub-district (cont.)**

Name of course	Details	Contents	Instructors
<b>5. Swine farm by swine group</b>	<ul style="list-style-type: none"> <li>- There were 32 participants attended the 2-day course for content before 2-day practice at the practical unit, then 2 swine were given to each participant to feed at home , after they gave birth the owners would give 2-female swine to the practical unit to guarantee that they were passed the course.</li> <li>- There was a monitoring and evaluation process for the participants if they passed and wanted to apply for their career they needed to register in order to have a quota control and price guaranteed.</li> <li>- Capital for investment would be facilitate by the group.</li> </ul>	<ol style="list-style-type: none"> <li>1. Planning for appropriate conditions</li> <li>2. Selecting and caring of swine</li> <li>3. Decease protection and care</li> <li>4. Management and capital analysis</li> </ol>	<ol style="list-style-type: none"> <li>1. Local learned persons</li> <li>2. District live-stock official</li> <li>3. Expert invited from Rajamangala Institute of Technology, Sai Yai</li> </ol>
<b>6. Animal food production by animal food co-operative</b>	<ul style="list-style-type: none"> <li>- The traditional Thai chicken group, swine farm and fish breeding group worked together to lower the capital of production. They used local materials to produce animal foods by adapting traditional way and applying good quality ingredients to the foods.</li> </ul>	<ol style="list-style-type: none"> <li>1. Five participants were selected to train for five days at Rajamangala Institute of Technology, Sai Yai.</li> <li>2. Five volunteers were allowed to produce animal foods and sell by the animal and food co-operative.</li> </ol>	<ol style="list-style-type: none"> <li>1. Local learned persons</li> <li>2. District live-stock official</li> <li>3. Expert invited from Rajamangala Institute of Technology, Sai Yai</li> </ol>
<b>7. Rice processing by rice farmer group</b>	<ul style="list-style-type: none"> <li>- There were 300 families of rice farmers in village number 1,4,6,7,8 who had rice fields around 7-15 rai per family but their products remained only little after family consumption.</li> <li>- The resolution was to process rice into some other kinds of products</li> </ul>	<ol style="list-style-type: none"> <li>1. Methods of producing husked rice for trading</li> <li>2. Produce noodles from low quality rice</li> <li>3. Process sweets and biscuits from rice</li> </ol>	<ol style="list-style-type: none"> <li>1. Agricultural and housing officials</li> <li>2. Officials of non-formal education</li> <li>3. Officials of community development</li> <li>4. Local learned persons</li> </ol>



**Table 7 : Details of training courses for general agriculturalists in Mairiang sub-district (cont.)**

Name of course	Details	Contents	Instructors
	to raise more income. - The 2-month training course for rice processing of 25 participants was held every two months.		
<b>8. Traditional Thai medicine by herbs for health group</b>	- There were 28 participants attended the 2-day course for content at the center before 3-day practice at the Health Care Unit. - Four traditional Thai medical doctors were invited to teach, (two of them were herb experts, one was traditional Thai masseur, and another one was an expert on bones connecting.	1. Characteristics of herbs and properties 2. Herbs and health cares 3. Using herbs for basic sicknesses	1. Local traditional medical doctors 2. Local traditional pharmacist

**Remarks:**

1. All activities emphasized on developing continuous relation and co-ordination.
2. All activities focused on learning process, analyzing skill, planning and monitoring.
3. All activities paid the most attention to closest markets and expanded by closed relations to stable business in the future.
4. All activities focused on necessary products responded to social needs.
5. All activities focused on sufficient produced with well planed in production process, processing under appropriate quota and lower price.

**5. Establishment of Activity Group (Unit for practice)**

The training for two groups of people, members of the council and general farmers in Mairiang sub-district started with forty community leaders from eight villages (five persons per a village). The course took three times to train two subjects. The training course took place indoor for one day and one or two-day outdoor training. There were 302 members attended eight courses. After the courses, the farmers brought with them meaningful lessons to practice in their real lives. The Center issued a certificate if they were successful in practice at their own land and they were registered to guarantee the low price of their products. Sources of finance were introduced if they needed. (The Center established Mairiang Village Bank in June 1999 to support operational plan of the Council)

The training courses instilled learning process to both members of the Council and general farmers. They have learned and gained valuable knowledge, experience and practical skills, so they were able to solve their own problems correctly.

The eight activities operated in different villages were under the condition below:

1. The most suitable setting of the unit for practice of each activity was to set in one village.

2. The setting was suitable for activities held and allowed to utilize for at least 15 years with written agreement.

3. The setting was not in flooded area.

4. The setting was well planed and away from slum.

5. The setting was convenient to travel in every season.

6. The environment around the setting was taken good care all times.

The unit for practice was responsible for:

1. Arranging the unit as a center of learning for all people.

2. Maintaining number of animals and plants adequately to respond demands of members and markets.

3. Preparing reports of the unit and submitting monthly to the committee.

4. Maintaining tools and materials to be in good conditions.

5. Registering materials, products and other assets systematically.

6. Studying, collecting data, doing research and co-operating with agencies concerned.

7. Updating every account and submitting to the committee in order to monthly report to the members.

In every project or activity, the capital might revolve to become benefits to the operation.

1. Benefit of any activity which the community joined to invest was allocated as follows;

1) Not more than 10 per cent was allocated to the committee.

2) Not more than 10 per cent was allocated to public fund.

3) Not more than 60 per cent was allocated to the shared holders.

4) Not more than 20 per cent became reserved fund.

2. Benefit of any activity supported by the Community budget was allocated as follows;

1) Not more than 10 per cent was allocated to the committee.

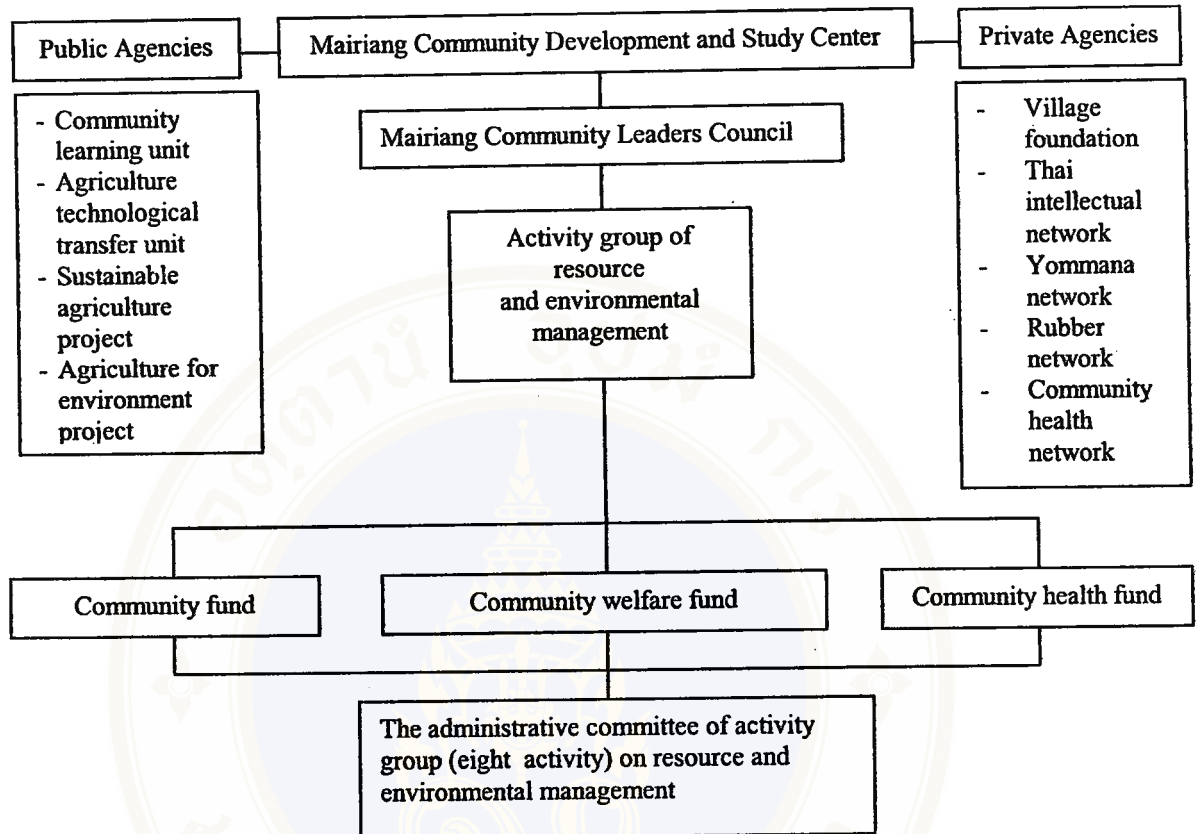
2) Not more than 60 per cent was allocated to the community

fund.

3) Not more than 20 per cent was allocated to the shared holders.

4) Not more than 10 per cent became reserved fund.

The appropriateness of places, personnel and resources selected by the Mairiang Community Leader Council eight activities will be discussed in more details in 4.3.2



**Figure 6 : Administrative structure of activity group of resource and environmental management for self-reliance**

For resource and environmental management of Mairang Community Development and Study Center as mentioned earlier it might be said that this center has the following distinctive characteristics: systematic management of resource and environment, clear policy and objectives of procedure, administration in the form of organization with clear job descriptions, accordance with community context and performance in accordance with policy and administration. This accords with the concept of Sewall (1975: 1) that natural resource management should be human activity that influences the quality of resource and environment. It also goes along with the idea of Letey J. (1973: 3) that natural resource management is natural activity of human beings to proceed natural resource management. This activity should be the whole object that helps preserve and protect balance of nature and ecological system.

**Table 8 : Conclusion of features of resource and environmental management of Mairiang Community Development and Study Center**

<b>Management</b>	<b>First Phase (1962 – 1991)</b>	<b>Second Phase (1992 – 2001)</b>
<b>1. Policy</b>	<p>The policy of the center focused on single agricultural system- rubber plantation. Mairiang Agriculturalists' Group had policy on how to solve the problem of low price of rubber and reduction of mediators' interference. While Mairiang Gardener's Group had policy on how to solve the problem of low price of rubber by establishing para rubber processing factory.</p>	<p>In this phase the policy of the center focused on both flora and tauna resources as integrated agriculture. It gave importance an solving all problems in Mairiang community, for example, Mairiang community Development and Study Center had policy on people development to help themselves through education, so community learning center was established to educate people. This led to solve problems and develop community effectively.</p>
<b>2. Administration</b>	<p>Initially it was idea administration by using integrated administrative technics through culture and tradition and technics of mouth to mouth spread. Later Mairiang Gardeners' Group was established and administration in the form of committee was introduced by using technics of meeting and talking to each other that cause good understand among the committee.</p>	<p>Mairiang Community Development and Study Center was administrated in the form of committee. And at the same time the Council of Mairiang Community Leaders was established. Forty members of the council were selected from five leaders from five villages out of eight villages to administrate the council by following up the operation of Mairiang Gardeners' Group, that is three courses were introduced: general course, compulsory course (learning what should be learned) and alternative course (learning what is necessary to learn).</p>
<b>3. Practice</b>	<p>In this phase, para rubber processing factory was established and long term plan was made in three ways :</p> <ul style="list-style-type: none"> <li>- Rubber gardeners were supported to establish the factory of Para rubber sheet. Because of this support, eleven factories wren established in Nakhon Si Thammarat province.</li> <li>- Groups of gardeners were supported to carry on the relationship of network in almost area. Because of this, Nakhon Si Thammarat rubber network and Yomana network were established.</li> <li>- National policy on Para rubber was</li> </ul>	<p>In order to accomplish policy and principle of administration that villagers learned what should be learned and what is necessary to learn, three steps of operation were determined:</p> <ul style="list-style-type: none"> <li>- New concept of villagers should be adjusted by not putting their lives on rubber only.</li> <li>- Basic data of community should be surveyed in levels of both family and community. From the conclusion of data survey five terms of plan should be introduced: education, sustainable agriculture</li> </ul>

**Table 8 : Conclusion of futures of resource and environmental management of Mairiang Community Development and Study Center (cont.)**

Management	First Phase (1962 – 1991)	Second Phase (1992 – 2001)
	<p>planed. Master plan of Thai Para rubber development was also drafted and presented to government. Unfortunate it was failed to announce as national plan.</p>	<p>and environment, community public health, community industry and community fund.</p> <ul style="list-style-type: none"> <li>- Eight course (theory and practice) were provided to the members of the council of Mairiang Community Leaders and general agriculturalists in Mairiang sub-district.</li> <li>- Eight activity groups were established to train and to provide alternative ways to villagers in development of minor and supplementary occupations.</li> </ul>

#### **4.3.2 Activity Group of Resource and Environmental Management for Self-Reliance of Mairiang Community Development and Study Center**

After the training courses for general farmers in Mairiang Sub-district, The eight activities were expanded with well supports from both government and non-government agencies.

The Department of Non-formal Education, Ministry of Education supported both finance and technical assistance. The department helped establish Community Learning Unit and provided professional training to respond the demands of Mairiang community.

Department of Agriculture Promotion and Co-operative Ministry of Agriculture and Co-operative established Agriculture Technological Transfer Unit for technology transfer and service.

Community Investment Fun Project under Saving Bank supported finance for the proposed projects.

DANCED was a project under collaboration of Thailand and Denmark supported both budget and technical assistance for sustainable development of Mairiang community.

Agriculture for Environment Project under supervision of Department of Environment Quality Promotion supported both budget and technical assistance to the projects proposed by the community.

Village Foundation was a private agency support on co-ordination with other agencies required.

Thai Intellectual Network was a private agency operated in 33 provinces of Thailand helped facilitate co-operation and supported both budget and technical assistance related to local wisdom.

Yommana Network was a private agency formed by three groups of people, rice farmers of Pak Panang River, rubber farmers of 14 southern provinces and Fruit Farmers Club in Nakorn Si Thammarat province. The network shared knowledge and experience on organization administration and management.

Rubber Network was a private formed by rubber farmers in Nakhon Si Thammarat. The agency supported both budget and technical assistance.

Community Health Network was a private agency supported activities related to health promotion, herbs and other matters to develop community health. They also provided both budget and technical assistance.

The details of each activity group are as follows;

#### **Activity Group 1: Mushroom Cultivation with Rubber Tree Sawdust**

The group was established under career development framework in accordance with Mairiang community master plan (first phase). Pattern of natural resource and environment management for self-reliance was in the form of rotating utilization or re-use of natural resources. The group was supported by both public and private agencies.

“We do everything as we are willing to do, not to follow others but to earn our lives. We started cultivating mushroom by collecting sawdust, made it as a lump and grew mushroom. After harvesting the products, we brought the used lumps of sawdust to mix with animal’s droppings in order to produce compost for non-toxic vegetables. we do not need to buy anything from outside community, everything is available”

(Suchin Jamjaras, interviewer)

The Council supervised the group by appointing a five-member administrative committee to the group. Name list of the committee is as follows :

- |                          |                  |
|--------------------------|------------------|
| 1. Mrs. Suchin Jamjaras  | chairman         |
| 2. Mr. Preecha Piansawat | vice-chairperson |
| 3. Mrs. Orawan Jamjaras  | registrar        |
| 4. Mr. Thammarat Jina    | treasurer        |
| 5. Mr. Komon Yaso        | secretary        |

There are 77 members of the group from 56 families. Most of them (75.32%) live in Village number 5 and other villages in Mairiang Sub-district such as village number 9 (9.09%), village number 1 and village number 2 (3.89%), village number 3 and 6 (2.59%), village number 4 and 8 (1.29%).

Main purposes of the group are;

1. To be a unit for mushroom cultivation technology transfer.
2. To be a representative body of every career to collect information, problems, demands and community resource and environment for the community development plan.
3. To be a unit of co-ordination of the Mairiang Community Development and Study Center.

Principles of group management respond to economic sufficiency and self-reliance on health care as follows:

1. Administration of the group follows the plan developed by the members.
2. The group focuses on integrated thinking, learning, sharing benefits but separated working.
3. The group is free to participate in activities of other organizations.
4. Management of the group is operated by committee.
5. Return capital to society, distribute opportunity and benefit to society are the ideal of the group.
6. Rules and regulation of the group are determined by the members.

There were six functions of the mushroom cultivation group:

1. To train the trainers, survey any information on mushroom production, capital/interest, control quantity of products, analyze market and market planning.
2. To collect information of the group, village information, participate in community planning, propose project into community plan, form community fund and community welfare fund in accordance with the community master plan.
3. To continuously organize workshops or seminar by inviting resourceful persons to instruct or give lecture to the members and people in the village on any topics related to politics, laws, administration, health care and environment.
4. To promote establishment of organization in community with natural leaders and strong management to negotiate with other organizations or agencies on career development, public health management, people welfares as announced in the constitution in collaboration with other agencies in order to instill correct value, and ideal of self-reliance on community problem solving
5. To promote collaboration with sources of fund to help solve financial problem of the community
6. To develop the community to become community business and industrial community within three years.

Being a member of mushroom cultivation group as a shareholder (founding member), the member might agree to the principles of the group and be a native district. The groups regulation required the members to have a ten bath share at least five shares but not more than two hundred shares.

Welfare and sharing dividends depended on the regulation of the group. The benefit was allocated as follows:

- 50 percent to the community fund (community fund regulation)

- 10 percent to community welfare fund (community welfare fund regulation)
- 10 percent to fund for health (community health regulation)
- 10 percent to the committee (number of shares hold)

Conditions of being a member of the group are as below:

1. Members are able to withdraw their shares at anytime and re-apply to be members after one year of withdrawal.
2. Resigning of the member during the year will not be shared the dividend.
3. Members who borrow or guarantee a loan of the Welfare Fund have to close their loan account before resigning from membership.
4. Members who borrow or guarantee a loan but refuse to return in due time without the reasonable reason allow the group's committee to announce their status in every public place.
5. Members who are absent from the meeting 3 times continuously will be deprived from being members.

Procedures of enrollment of the group's member are as follows :

1. Inform the group and apply for one-day content training and one-day practice, then, bringing with them some mushroom lumps to look after with carefully recording and report to the group for approval.
2. Success members will be allowed to buy mushroom groups in members' price.
3. Successful member need to register to the group for controlling the quota of products
4. Members of the group have to sell their products not less than the guaranteed price determined by group.
5. The members are able to participate in the projects of product processing marketing management, and community business.
6. The members have to cultivate only non-toxic lumps of mushroom.

The members will be deprived unless they follow the rules and regulations of the group.

### **Activity Group 2: Traditional Chicken Cultivation.**

Traditional chicken cultivation group was founded within the Mairiang community master plan (first phase) on minor career promotion and The goal of self-reliance on natural resource and environmental management. The group started with eggs incubating, chicken feeding until the chickens were able to lay their eggs. The group established a demonstration shed with the support both from public and private agencies at village number 1 of Mairiang sub-district. The group was led by Mr. Kriangsak Chuchart as a group leader.

“The goal of our group is to produce chicken for the household consuming. The first phase of the activity was to train our members to learn how to do it appropriately and gain enough knowledge and experience”

(Kriangsak Chuchart, interviewer)

Main purposes of the group were :

1. To develop minor career for youths group
2. To develop learning experience on animal rearing.
3. To encourage the youths group to spend good use of their times.
4. To encourage the youths group to develop their own career in the

future.

There was a five-member administrative committee under supervision of the council comprised:

- |                                |               |
|--------------------------------|---------------|
| 1. Mr. Kriangsak Chuchart      | chairman      |
| 2. Mr. Ampon Kongkaew          | vice-chairman |
| 3. Miss. Patcharaporn Yothakan | registrar     |
| 4. Mr. Suthin Torrarit         | treasurer     |
| 5. Mr. Teerasak Prommee        | secretary     |

The principle of group activity was “Team thinking, separated implementing and joined distributing”. Target groups of youths were in the village number 1, 2, 5 and 9 but youths in other villages were allowed to join.

Anticipated outcomes were:

1. Create minor career; increase income and reduce family's expense.
2. Permanent career for the youth was prepared.
3. Adequate protein food to consume for each family.
4. Problem on unemployed of youth was reduced.

### Activity Group 3: Swine Rearing Group

The group was formed in accordance with Mairiang community master plan (first phase) on minor career promotion. The pattern of natural resource management and environment management aimed at self-reliance by rearing the breeders of pigs. The process of solving problems of pig's rearing and develop to be a minor career of families. Mr. Rattana Thaworn was a group leader of about 20-member group. The demonstrative sty was built in village number 3 of Mairiang sub-district with financial support from public and private agencies.

“We used to have 2-3 pigs, then after becoming the members of the center and train in different provinces, we thought that we would join as a group to share the idea and solve the problems. It's better not to try with error”

(Rattana Thaworn, interviewer)

Administrative committee was formed under supervision of the Council. The five members were:-

- |                                |               |
|--------------------------------|---------------|
| 1. Mr. Rattana Thaworn         | chairman      |
| 2. Mr. Chawakit Singhaboonpong | vice-chairman |
| 3. Mrs. Ratchanee Sumon        | registrar     |
| 4. Mr. Prayong Pongsakul       | treasurer     |
| 5. Mr. Somchoke Plaikaew       | secretary     |

#### Activity Group 4: Freshwater Fish

This group was formed under Mairiang community master plan (first phase) on minor career promotion. The pattern of natural resource and environmental management aimed at self-reliance of the community on fresh water fish rearing. The main purposes of the group were to train procedures and methods of freshwater fish rearing, to experience any problem happened and how to solve which would help develop the permanent minor career in the future. Mr. Siri Cheewa led about 30-member group of fresh water fish rearing. The demonstrative unit of fresh water fish was established with support from public and private agencies

"Our group started with the discussion of 5-6 people on several freshwater rearing fish both in concrete and earth well adjusted from rice fields. We confronted with many problems, we tried many ways, including adding bio-chemical water in the well for injured fish, and it helped."

(Siri Cheewa, interviewer)

The five member administrative committee under supervision of the council consisted of:

- |                         |               |
|-------------------------|---------------|
| 1. Mr. Siri Cheewa      | chairman      |
| 2. Mr. Pradit Koontong  | vice-chairman |
| 3. Mr. Prapat Sangwisit | registrar     |
| 4. Mr. Teera Chaiyapruk | treasurer     |
| 5. Mrs. Nongrak Buadam  | secretary     |

#### Activity Group 5: Animal Foods Production Group

The group was formed under the framework of Mairiang community Master Plan (First phase) which focused on self-reliance of natural resource and environmental management. The purpose of the group was to produce animal foods for other animal rearing groups. Mr. Somkuan Thipsuwan led the group at the demonstrative unit of village number 4. with the support from both public and private agencies.

"In Mairiang Community Development and Study Center, we are free to do anything we want but we should consider the appropriateness of areas and environment... Many minors careers were developed, particularly on animal rearing. Natural foods were not enough for animals, we decided to establish a animal food factory which we can deliver our product to other group conveniently"

(Seri Sirirat, interviewer)

The group was managed by a five-member committee under supervision of the council. Administrative committee comprised-:

- |                               |               |
|-------------------------------|---------------|
| 1. Mr. Somkarun Thipsuwan     | chairman      |
| 2. Mr. Seri Sirirat           | vice-chairman |
| 3. Mr. Ake-kamon Yothakarn    | registrar     |
| 4. Mrs. Piangpen Srithammasit | treasurer     |
| 5. Mr. Tawee Sirirat          | secretary     |

### **Activity Group 6: Non-Toxic Vegetable and Fruit Group**

The group was formed under Mairiang community master plan (first phase) on minor career promotion. Pattern of management focused on natural resource And environmental management for self-reliance and sustainability. Mr. Uthai Muedmid led the group at the demonstrative unit in village number 2 of Mairiang district where many activities were displayed with the support from both public and private agencies.

“Result of the survey revealed that people in Mairiang district were killed by cancer at a very high rate. Main causes of cancer were chemical mixed insecticide and chemical fertilizers. If we use non-toxic insecticides and fertilizers as our ancestors did in the past our lives should be better and we are able to reduce our expense on purchasing chemical mixed insecticides and fertilizers”

(Kajorn Tiphaphong, interviewer)

The council supervised five-member administrative committee.

The name list is as follows :

- |                            |               |
|----------------------------|---------------|
| 1. Mr. Uthai Muedmid       | chairman      |
| 2. Mr. Narathip Sukathip   | vice-chairman |
| 3. Mr. Kasem Kaewkamthong  | registrar     |
| 4. Mrs. Chaweevan Pumthong | treasurer     |
| 5. Mrs. Supanee Tigkana    | secretary     |

### **Activity Group 7: Traditional Thai Medical Group**

The group was formed under Mairiang community master plan (first phase) on minor career promotion focused on self-reliance patter of management of natural resource and environment. Local herbs were basic medicines used to care sick persons in the district. Mr. Charoon Ubon led a group at a Health station, Baan Tan Por where several kinds of herbs were collected for study with the support of both public and private agencies.

“Herbs are available in Mairiang District but we have never brought it for our every day lives. Some vegetables can be both foods and medicines.... Several people of us know how to treat with traditional Thai way of medical doctors, such as

traditional Thai massage. Sometimes we don't need to take any medicine but we can recover from the sickness."

(Charoon Ubon, interviewer)

The group supervised an administrative committee. The name list is as follows:-

- |                        |               |
|------------------------|---------------|
| 1. Mr. Charoon Ubon    | chairman      |
| 2. Mr. Paun Raksayot   | vice-chairman |
| 3. Mr. Prapas Supan    | registrar     |
| 4. Mrs.Lamai Chitrakam | treasurer     |
| 5. Mr.Teera Raksawong  | secretary     |

The group also operated under public health plan with the promotion of community health self-reliance project. The activity of this project focused on training of community leaders for the skill of traditional Thai medicine doctors with financial support for materials and equipment from Community Fund.

The first course of training opened for the community leader who has got some basic skill and knowledge of local medicine doctors and interested people. The group was supported by Tarn Por Health Station, Ban Nong Tom Health Station and, Unit of Basic Health Service and Training Nokorn Sri Thammarat and Local traditional medical doctor Club in Chawang District.

### **Activity Group 8: Rice Product Group**

The group was founded within Mairiang community master plan framework (first phase) on minor career promotion focused on the patters of natural resource and environmental management for self-reliance. Rice was chosen to process in orders to add more value. The processed products of rice were Thai-noodle, sweets, tusked rice. Mr. Somkid Buasakad led the group at the demonstrative unit in village number 6 of Mairiang sub-district with the support from both public and private agencies.

"When I first came into the group, I did not think of anything, but to have a chance to join with friends for learning.... There is a rice mill at home because we are rice farmers. I know how to work with it and fix it... I realized that everyone must have rice for food, no one refuses to eat rice. There are some rice farmers here so it's reasonable to have a rice mill, I called a meeting for the people of village number 6 to ask for their approval on a place to build a rice mill with other materials and equipment for rice product processing which were belong to everyone."

(Somkid Buasakad, interviewer)

Five-member administrative committee was appointed under supervision of the council. Name list of the five-member is as below:

- |                            |               |
|----------------------------|---------------|
| 1. Mr. Somkid Buasakad     | chairman      |
| 2. Mr. Satit Chantamas     | vice-chairman |
| 3. Mr. Thinnakorn Torrarit | registrar     |

- |                         |           |
|-------------------------|-----------|
| 4. Mr. Pradit Kuntong   | treasurer |
| 5. Mr. Ponthep Rampeier | secretary |

All of the eight activities were under Mairiang Community Development and Study Center plan on minor career promotion. After operating for a while, many more activities were expanded out of the original plan. These activities were formed by groups of youths in Mairiang sub-district (Youth Group was established). The pattern of activity in the form of natural resource and environmental management dealing with animals and plants were expanded to natural resource reservation and local arts reservation.

#### **4.3.3 Learning Process in Resource and Environmental Management for Self-Reliance of Mairiang Community Development and Study Center.**

As mentioned earlier that the Center was developed from Mairiang Agriculturalists' Group, so process of learning to change due to duration of time, policy and adjusted administration to be appropriate with community situation on natural resource and environment management for self reliance was made.

From the reasons above, the researcher presented her study results into 2 phases. The first phase started in 1962 to 1991 when Mairiang Agriculturalists' Group was founded, and the second period started in 1991 to 2001 when Mairiang Community Development and Study Center was founded. The detail of each period was mentioned below.

##### **1) The First Phase (1962 – 1991)**

The joint of villagers' leaders to form Mairiang Gardeners' Group with the main target for solving low price rubber and taking advantage of the mediators. The success of the group in solving the problems was accepted and the group became a learning source for rubber farmers in the other regions. They learned principles, administration and operation used by the farmers and applied for their own community context. The researcher analyzed the process of learning happened in natural resource and environmental management of Mairiang Gardeners' Group in different points as follows.

##### **(1) Problem Realization**

After the disaster from a windstorm in 1962, the government promoted growing rubber trees as industrial crop. Mairiang villagers agreed with the government and changed their career from rice farm, fruit plantation and local rubber plantation to modern way of only rubber plantation. Almost of Mairiang land was used for rubber plantation and this was the starting point of Mairiang Community to the new system of agriculture, single farming model with only rubber was the only industrial crop.

The villager's way of life also depended on only rubber as appeared to the farmers in all provinces of southern region. Rubbers were produced largely but the price was not stable. It depended on the mediators who set the rubber

price. It was because the rubber farmers did not know any status of rubber world market.

During 1969, Mairiang villagers confronted with the serious problem of low price of rubber. They had to sell their products although the price was very low without any power of bargaining. Standard of living was lower. They were not able to send their children to study for higher level. Some of them were in debt and became bankrupt.

This caused the forming of rubber farmers to study the problems and try to find the ways to solve.

## **(2) Problem Analysis**

A group of twelve people tried very hard to find the ways to solve the problems because the farmers could not control quality of rubber, weight and price. The forming of a group of twelve people was to reduce and avoid being taken advantage by the mediators. They improved quality and weight of the rubber to meet the demand of market so that they were able to negotiate with the mediators.

At that time, the Department of Agriculture Promotion were also promoting quality of sheet rubber by organizing rubber contest at a New Year festival in Chawang district. Many farmers applied for the contest (including Mairiang villagers). After the contest, all sheet rubber at the contest was sold with one-two bath higher price than the market price because they were all of good quality. This brought the idea to the group that they needed to change the process of sheet rubber production. They went to Naborn Rubber Organization and asked for knowledge and advice on rubber production process.

They learned that good quality of rubber needed to be produced by modern machine instead of producing by hands as before. They agreed to build a factory to process their air dried sheet rubber with the idea that if the quality and quantity of their rubber met the demand of the market, the mediators could not force the price down, The farmers would have more power to negotiate with the mediator on the price of rubber.

## **(3) Determination of Proper Alternative**

After the villagers agreed on construction of rubber processing factory, they calculated the capital of construction cost and machines with the capability of production at 10 tons per day. From their calculation, the estimated cost of investment was about 11 million baht which was very high. They re-considered their plan with the regard conditions of possibility and found that the group of twelve villagers were able to produce rubber at about 500 kilograms per day. The possibility of having a factory to produce their rubber was limited by the cost of 500,000 baht, so they came to the conclusion that they had to choose the alternative way of constructing a factory with the cost of 500,000 bath. The gathering for a fund of 500,000 baht plan was determined.

The group of twelve people met together more often to discuss on every issue related to their plan. They shared ideas, tasks together. Weaknesses that could happen to the implementation of the plan were well protected with the principle of "Any problem happens at the early stage is better than to happen during the implementing stage". The main problem raised at the meeting was a capability of a rented truck to load rubber from the factory to the market. They needed a truck of 13

tons to save the expense on rubber transportation. At the same time the problem of production on timing happened because the factory with capability to produce at 500 kilograms per day took more than 30 days. Even though, they had a truck for 13 tons to transport their products to the market, the farmers could not wait for such a very long time because they needed money to spend. They could wait only within 15 days.

The first lesson to get into small enterprise management of rubber processing factory was to analyze many factors concerned and choose the best alternative. They analyzed deeply on capability of the factory per day, capital to invest and expected benefit. The final conclusion was to build a factory with the capability of production at 1.5 tons per day and at least one million baht required for the first investment.

The group of twelve people thought that they could not afford to invest with at least one million baht so they decided to ask for more people, especially, their relatives to join and share heavy responsibility. Twenty five people joined the group and held a share of 50 baht from 20,000 shares expected to meet the target of one million baht.

The first resolution of the farmers by constructing a factory to produce good quality product was only the first step. They thought that systematic ways of solving the problems that started from integrity of policy, management and operation were needed for effective resolution.\*

The problem was that we did not have a clear policy or framework of rubber development plan (It depended on the politicians who were responsible for rubber plantation at the time they were in the position. Although Thailand has produced rubber for more than one hundred years and rubber was the main goods to increase much income of the country. with 80,000 million per year. Thailand was the number one country. to export rubber.) Mairiang community in collaboration with other groups of rubber farmers in Nakhorn Si Thammarat and other provinces drafted the master plan of rubber development for six times. Finally, the plan was not approved by the parliament. Although they did not succeed in solving their problem at the policy level, they learned how to work together, how to solve the problem by analyzing causes by themselves. They were able to develop their potentials confidently.

#### **(4) Procedure**

Gathering more funds and shares from their relatives was an important task of the group of twelve people and the urgent thing to do was to construct reliability and self-confidence to the new comers. They had to prove construction that their factory would have systematic administration and management and the group of farmer would be formed legally. They got a problem of registration because provincial agriculture unit did not want them to register since there were 126 groups registered at that time and every group confronted with the problem of operation. With their strong intention, the resistance of agriculturists' group was made on the first of June 1984 named "Mairiang Agriculturalists' Group".

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\* Praya Rasadanupradit brought a rubber tree to Thailand since 1899

## **2) The Second Phase (1992- 2001)**

Mairiang Agriculturalists' Group was upgraded and expanded to become Mairiang Community Development and Study Center with the main target on developing human resource to help themselves. The Center was established to facilitate people in the community to learn and apply for their real lives. The Center was well-accepted both in country and internationally as a source of knowledge and skills required. Therefore, The researcher analyzed the learning process of natural resource and environmental management of Mairiang Community Development and Study Center in different stages concerned as follows:

### **(1) Problem Realization**

After their success on producing rubber, they developed themselves from being produced farmers to selling farmers with the attempt to pass their master plan through the parliament. They reviewed their roles and responsibility and learned that the problems solved by them were only short term problem. The main causes of problems were beyond their ability such as the problem dealing with politics and business forces. They changed their views to depend their lives only on rubber by thinking back to their ancestors lives who were able to live without depending on only rubber. They considered both positive and negative ways of being rubber farmers and found that rubber farmers were an unstable and led to become bankruptcy. These caused health problems, destruction of community culture and toxic natural and environment.

The group was aware of the problem mentioned and adjusted themselves by changing the group to be a center named "Mairiang Community Development and Study Center" in 1992. The Center was founded to solve the problems happened in Mairiang sub-district (not only rubber problem but other problems were included). They blended several kind of plants together in the same area and had some animals reared in the area at the same time. This approach was the way to develop their main career to be appropriate with natural surroundings, to develop their minor career for the stability of their families and to develop additional career for regular income.

### **(2) Problem Analysis**

The establishment of Mairiang Community Development and Study Center in 1992 applied the administrative system from the experience of Mairiang Gardeners' Group. The patterns of activities used as the tools to facilitate learning the community were also adopted. The first operation of the Center was not efficient and lack of effectiveness so they formed a council as an administrative unit of center named "Mairiang Community Leaders Council" on the second of October 1998. The council was also a forum for the villagers to share ideas, knowledge, experience and other issues related to community development necessary and

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\* From the seminar on sustainable development of agricultural policy and framework (2001:7.4-7.5), it was mentioned that the effects of having rubber plantation for career was caused by the system of production for trade to develop country. The government promoted to produce agricultural products for exporting and encouraged people to process agricultural products in the southern region. The government policy led to the expansion of rubber plantation to the forest areas. Integrated garden was reduced while single-plant gardens for trade were promoted such as rubber, durian, coffee, oil palm, etc.

information of problems and demands from the community were collected and analyzed for the best solutions.

The forty members of the council represented 8 villages (five people from each village were selected) met together to discuss on community problems. By discussing on community problems and they found the correct ways to solve with deeply analysis. By discussing over and over they found that the data and information brought to the meeting were not correct.

They agreed to survey again by sending the members to their own villages to collect two levels of community data and information: family level and community level (Mairiang sub-district). The data collected comprised income account, daily and month expenses of a family, debt status of the community, health and illness, education and career etc.

The result of the survey at the community level analyzed by members of the council which emphasized on community economy revealed that the expense of most families within one year was spent on foods, health services, and debts respectively. They also found that the expense for foods of the families was mainly on foods that could be prepared by themselves or less value of nutrition while the expense for health service caused by consuming mal-nutrition or toxic food. The expense for debt was for a long term debt. By analyzing, the survey result, the council proposed that they should develop the people in the community on knowledge, ability, skills and experience. They arranged five-facet plan regarding education and learning, sustainability of agriculture and environment, community health care, business and industrial community and community fund. The plan was based on integrated agriculture.

### **(3) Determination of Proper Alternative**

The five-facet plan was converted to the operational plan by setting training course for members of the council and general farmers in the sub-district. Main purpose of the training course was to help the member and general farmers to develop their main career, minor career and regular income without depending on only rubber plantation which would lead to stable life and make good use of their land appropriately and sustainability. There were eight courses related to the five-facet plan : growing non-toxic crops, freshwater fish cultivation, local chicken farming, sawdust mushroom cultivation, swine rearing, animal food production, rice processing and traditional Thai medical doctors.

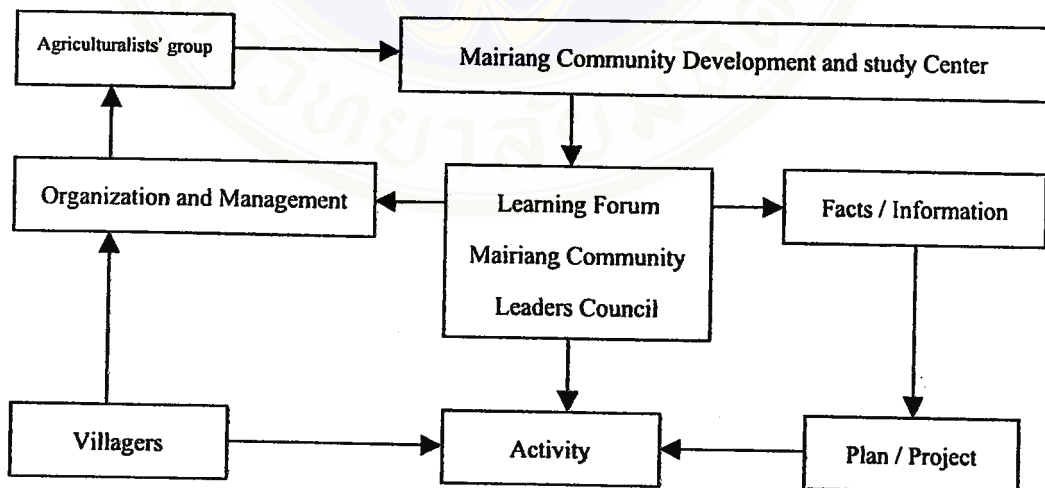
### **(4) Procedure**

Each course consisted of two parts: theory and practice. The Center was responsible for theoretical part with the supervision of the working group appointed by the Mairiang Community Leaders Council. The working group contacted resourceful persons, local learned persons from different networks to be the instructors of the course. The practical part of eight courses were held in different locations in accordance with appropriate surroundings, place, persons resources and lands of each community. The benefit of the courses would cover all areas of the sub-district. The council appointed another working group to take care of the practical activities in each area.

In the course, the council arranged two groups of people separately : the community leaders and general farmers. There were forty people in the leaders' group (five people from each village). The training course took three times to attend two subjects. The training course took place in the meeting room for one day and one to two days fieldtrip.

For general farmers, the training course of theory and practice was arranged for five days, then the trainee were allowed to practice at their own places. The successful trainees were issued a certificate and registered for the quota and guarantee their career. The center coordinated sources of fund for the successful trainees if they wanted to do for their career.

We can observe that learning process on natural resource and environmental management for self-reliance of Mairiang Agriculturalists' Group and Mairiang Community Development and Study Center during the second phase (1991 – 2001) was led by a group of community leaders. The community leaders learned together by opening the forum to discuss and share ideas together continuously. Method of learning was arranged systematically by setting clear agenda to discuss. The systematic way led to the establishment of Mairiang Community Leaders Council, the forum for idea sharing, learning and management. The Council also originated development plans, projects and activities which were converted to concrete implementing with the focus on participating of villagers in the projects and activities. (Mairiang Agriculturalists' Group assisted the operation of activities). The operation of project and activity of Mairiang Community Development and Study Center was shown in Figure 7



**Figure 7 : Operation of Mairiang Community Development and Study Center**

From the experience of the Center mentioned above indicated that learning process was the heart of development which we can observe from organizational learning process on the development of Mairiang Agriculturalists' Group to Mairiang community development and study center, objective learning process of the improving from rubber to blended kinds of crops model learning process to adapting from single crop agriculture to multiple kinds of crops, policy learning process of

development from self-dependent to self-reliance and problematic learning process of solving problem with outside factors to solving problem with inside factors.

Mairiang Community Development and Study Center promoted learning process on content and knowledge development with two main approaches:

1. To facilitate the villagers to learn what they want to learn and group them together on the basis of group interest in order to share idea, knowledge and experience conveniently and effectively.

2. To facilitate the villagers to learn what they should learn in order to develop their potential and vision.

These two approaches are to develop the readiness of the villagers so that they are able to solve their every day problems by themselves and are able to solve the problems of their community and society.

Eight activities of the courses offered by Mairiang Community Development and Study Center to facilitate learning process of the trainees were the models of learning process for Mairiang community plan. The formulation of community master plan based on the eight activities. The recent master plan used by Mairiang Community was the first phase plan (1997 – 2001). The principles of implementing the plan stressed on clearly understand of theory and practice before undertaking in the real situation.

The formulation of the first phase of the community master plan provided opportunities to the villagers in the community to learn basic information of the community such as history, way of life, culture and tradition, natural resource and environment, products of community, local intellectuals, problems and resolution of the community. The participation of the villagers in the process of formulation of the plan helped develop learning process of the villagers on implementing the plan. The master plan is the mechanism to develop self-reliance of the community, to know how to make good use of resource, to develop the villagers' mind and develop management system of community fund and community welfare.

### **Mairiang Strategies of Development:**

1. Learning strategy: Learning process is the heart of every process and learning by one self is very useful. Mairiang Community was facilitated to learn by themselves by collecting data, analyzing, planning so the knowledge and experience will belong to the community.

2. Self-reliance strategy: This strategy was developed from the data collected from the community which indicated that in the past the community depended themselves on the product from outside the community so the activities to produce their own foods and products were arranged.

3. Resource development strategy: The development of these activities based on basic resources and local intellectuals of Mairiang Community. The resources mentioned included natural resources, human resource, social capital and local intellectuals of Mairiang Community.

4. Debt and fund management strategy: All learning activities of the center prepared for the villages were to help them develop their careers and gain more income to pay for debts.

5. Mental Development Strategy: This strategy was to rehabilitate moral and virtue, tradition value and culture with respect to self-sufficiency and adding social capital to the community.

During 1997 –2001 projects and activities of Mairiang community master plan was successfully implemented. All project and activities focused on developing practical skills and ability to solve problems. The first phase of the plan terminated at the end of 2001 so the center organized a workshop for the member of the council to meet and plan for the next phase (2002 – 2006). The workshop was organized in September of 2001 at Rajamangala Institute of Technology. After the meeting they concluded that Mairiang community has to step forward to develop community business based on the eight activities implemented in first phase. The community vision, strategies, and operational plan were made in two phases with details given below:

### **Mairiang Community “Vision” (2002 – 2006)**

#### **Vision**

“ Mairiang people live happily with standardized quality and moral in a unique and benevolent, strong learning society of sustainable agriculture under economic – sufficiency and well balance of environments”

#### **Mission**

The community determined its missions to achieve the objectives and goal as follows:

1. To develop satisfied livelihood of people in the community by adjusting ways of thinking, attitude of their lives to sufficient way and to promote participation of the people in family activities and community in order to keep close relation of each other.
2. To educate people in the community with knowledge on health care, nutrition and consuming.
3. To develop quality of live and basic facilities such as clean water supply, electricity, telephone, health care units, safety of live and assets and communication channels.
4. To develop stable career, sustainable farming under economic efficiency by introducing the approach of adequate consumption, group work and adequate business. To reduce dependency on others by using local intellectuals, arranging new way of agriculture on production process, reducing the use of toxic – substance.
5. To strengthen community by promoting participation in community activity of different careers group of people and encouraging to develop systematic management of business.
6. To build continuous learning society by promoting activities related to changing of world situations to the youths such as organizing forum, public hearing, community internet, community radio and participating in cultural activities.

To facilitate implementation of the mission, Mairiang Community determined five-facet development strategies as follows:

1. Learning strategy: There are a lot more things to learn for people in the community from what they have learned from the activities provided in the first phase.

2. Self-reliance strategy: People are encouraged to produce and consume their own products to reduce family expense and dependency to others.

3. Natural resource development strategy: Products development of the community based on basic resources:

3.1 Human resource: The development of human resource in the first phase of the plan was satisfied because the people are ready to develop other resources after they were developed.

3.2 Community product resources were improved to have quality, to be non-toxic for community consumption and distribute to other.

3.3 Natural resources were recovered with the collaboration of public and private agencies concerned.

3.4 Capital resources were systematically set as tables of development. The resource included financial capital, social capital, community's intellectual capital.

4. Health care and mental development strategy: Process of health rehabilitation and mental recovery were managed under the corporation of health service units, and local intellects.

5. Organization efficiency development strategy: There were ten groups established in the first phase of the plan:

1. Rubber farmers group
2. Non-toxic vegetable group
3. Freshwater fish group
4. Local Thai chicken group
5. Sawdust mushroom group
6. Rice processing group
7. Animal foods group
8. Traditional Thai medical doctor and herbs group
9. Elderly group
10. Youths group

The ten groups worked together as a network and shared necessary information among them.

**Table 9 : The second phase of master plan of Mairiang Community Development and Study Center**

<b>Program</b>	<b>Project</b>	<b>Activity</b>	<b>Group in charge</b>
<b>1. Sustainable Agriculture</b>	1. Plants breeding and reproduction	1. Shed constructing 2. Fish rearing	Sustainable agriculture and environment group
	2. Non-toxic vegetable and fruits	1. Producing bio-water 2. Producing compass and organic fertilizer 3. Training farmers	Sustainable agriculture and environment group
<b>2. Product Management</b>	1. Products processing	1. Rubber product factory 2. Fruit canned and juice canned factory 3. Animal product processing factory	1. Mairiang agriculturalists' group 2. Non toxic crop foods group 3. Animal farming group 4. Youths group
	2. Cold storage for crops	1. Training for product quality development 2. Market and community management	Non-Toxic vegetable group
<b>3. Community Economic Development</b>	1. Rice processing	1. Husked rice mill 2. Processing rice products	Rice processing group
	2. Self-produced products to replace imported products	1. Producing shampoo, detergent, cream 2. Producing knife sharpener 3. Sawing 4. Animal foods producing	1. Elderly group 2. Knife sharpening group 3. Housewife group 4. Animal rearing group
	3. Community food	1. Fish source factory 2. Drinking water factory 3. Mushroom shed 4. Village groceries	1. Sustainable farmers group 2. The Council
<b>4. Health Development</b>	1. Local tradition Thai medical doctors and herbs for health	1. Thai massage 2. Herbs planting 3. Herbs producing 4. Herbs training	1. Traditional thai medical doctors 2. Sub-district, health unit
<b>5. Capital and Debt Development</b>	1. Community fund	1. Saving group 2. Village bank group 3. Welfare fund 4. Health fund 5. Community fund	1. Saving group 2. Village bank 3. The council 4. The council 5. Village committee
	2. Farmers rehabilitation	1. Minor career development 2. Saving 3. Community enterprise	Farmers and Cooperative Bank's customers and the council

**Table 9 : The second phase of master plan in Mairiang Community Development and Study Center (cont.)**

<b>Program</b>	<b>Project</b>	<b>Activity</b>	<b>Group in charged</b>
<b>6. Tourism Development</b>	1. Conservative tourism (Soon Hill)	1. Organizing historical park of the events during 1969 – 1979 2. Soon Hill natural resource conservation	1. Mairiang sub- district administrative unit 2. The council Mairiang 3. Kra-biad sub-district administrative units 4. The communities around the mountain
	3. Tourism for study of original community's way of life	1. Long stay ecotourism 2. Trips to seasonal orchards	The council farmers families
<b>7. Mental Development</b>	1. Community cultural plaza	1. Local artists conservation 2. Elderly and youth party	The Center The Center
	2. Local culture festival	1. Tenth month festival 2. Chak Pra festival	Community, the council and sub-district administrative unit
<b>8. Community Learning Development</b>	1. Mairiang community leaders council	1. Workshops 2. Field trips 3. Producing local researchers	The Center The Center The Center
	2. Village training center	1. Minor career training 2. Village information center 3. Producing community scholars	The Council The Council The Council
		3. Natural university	1. Informal education 2. Non-formal education 3. Local community course
	4. Community learning center	1. Village information center 2. Community internet center 3. Community radio center 4. Co-ordination center	The Council

Beside, the developing of the master plan, the community also organized training courses for primary and secondary students in Mairiang sub-district. The purposes of the courses of training were to teach community history, basic information and data, status of community, economic and social structure, culture of community, main career, minor career and other activities of the community. The two levels of the students were divided into two batches : batch one for primary students and batch two for secondary students.

The four-time course was arranged on Sunday in the morning and afternoon. In the morning the student attended the classroom lecture and left for field trip in the afternoon where they learned activities held in the district and participated in the real situations. Materials were provided for the students who wanted to practice at their home.

The community designed local courses for degree level in collaboration with Rajamangala Institute of Technology. The local courses focused on practical learning in order to produce qualified youths. The community selected students to attend the course with their parents' permission and agreement to donate 2-3 Rais of areas for practice. The course will take place at the Institute for 1-2 days and at the demonstrative area for 5-6 days. After they finish, they will be offered the degree and the credits earned can be transferred to the regular class.

It has been found that this accords with the concept of several scholars (Seri Phongphit, 1989: Introduction ; Anek Nakhabuttra, 1990: 29 – 46 ; Parichart Walaisathian, 1999: 315 – 316) and The Concept of Office of the National Education Commission (1994: 1 – 3) with the conclusion of four important characteristics of learning process development as below :

1. Learning process should be introduced by group that formed by members of community to talk, to exchange of ideas, to criticize, to set questions and to find out answers for self-reliance. This will create new knowledge from brainstorm.
2. Learning process is practical learning. It is an attempt to find out the method to solve problems effectively. This affects the accumulation of community local wisdom.
3. Learning process is learning of problems solution in real life. It is learning to seek the way for self-reliance. It also includes initiative and the way to follow up this idea, as well as methods of problems solution in real life.
4. Learning process is learning of working together in the form of horizontal relationship. It is learning from exchange of ideas and experiences.

Therefore it might be said that several steps of learning process are the ways to create experience of learning to community and to set plan of solution of community problems by community themselves. It is a master plan that was made by community. During research work, it was the first phase to use community master plan (1997 – 2001) and from December 2001, the second phase of community master plan would be carried out (2002 – 2006).

**Table 10 : Conclusion of learning process in resource and environmental management of Mairiang Community Development and Study Center**

Management	First Phase (1962 – 1991)	Second Phase (1992 – 2001)
<b>1. Problem Realization</b>	In 1962 the center was hit by windstorm, then villagers were supported to plant Para rubber. Unfortunately rubber price was uncertain, fluctuated and controlled by mediators. This caused various problems to Mairiang villagers.	When draft of master plan of Thai rubber development was failed to announced as national plan, Mairiang Gardeners' Group revised what they had done, and it was found that the following problems were beyond villager's potential to solve : influence of politics, business and benefit.
<b>2. Problem Analysis</b>	Problems were analyzed by villagers and then Mairiang Agriculturalists' Group was established and developed to be Mairiang Gardeners' Group to bargain with mediators.	Mairiang Gardeners' Group helped analyze problems and found out the way to stabilize their families, not putting their lives on rubber only. They developed and changed Mairiang Gardeners' Group into Mairiang Community Development and Study Center and established the Council of Mairiang Community Leaders. Plan of operation was also made to survey basic data of community.
<b>3. Determination of Proper Alternative</b>	Two ways of problems solution were determined by villagers : establishment of Para rubber processing factory and long term plan of problems solution. (Gathering to establish factories and relationship of network were supported. National policy was planned).	Five terms of plan were set up. Eight training courses were also provided to villagers as alternative ways of careers.
<b>4. Procedure</b>	The factory of dry rubber sheet processing was established. For long term procedure, villagers gathered to establish eleven rubber processing factory. Networks of cooperation : Nakhon Si Thammarat rubber network and Yomana network were set up. And draft of master plan of Thai rubber development was presented to government. (but it was failed as mentioned earhtier.)	Theoretical and practical training courses were provided to two groups : the members of Council of Mairiang Community Leaders and general agriculturalists in Mairiang sub-district. Besides this the center joined hands with Rajamangala Institute of Technology to create local curriculum for graduate degree. This cooperation was in the stage of procedure.

#### **4.3.4 Five-Party Organizations Take Part in Resource and Environmental Management for Self-Reliance with Mairiang Community Development and Study Center**

The five-party organizations consisted of government organization, non-government organization, business organization, academic organization and

community organization. The research classified the participation in the project of each organization with category of organization and method of sharing knowledge. The result of the study in this part was presented in details on the bases of the periods they joined.

### 1) The First Phase (1962-1991)

Mairiang agriculturalists' group was established at this time with the purpose to solve low price of rubber. The management emphasized on rubber and there were three organizations, public, business and community joined. The public organizations, District Agriculture Unit, under the supervision of Department of Agriculture and Co-operative Promotion joined the community to help provide knowledge, idea and advice to the rubber farmer before and after the construction of rubber factory.

"It was very difficult to construct and register the factory but after it was registered, the operation went well and it was one of a few successful groups.... Agriculture Unit tried to support with knowledge, advice, finance and to co-ordinate with some other farmer groups in order to exchange knowledge and experience among each other.... Maybe because the group led by potential leader who had strong intention..."

(Mora Charoensil, interviewer)

Business organization joined the group to assist the members by allowing them to learn the production process at the factory, seeking markets for the products.

"The growth of Mairiang agriculturalists' group was supported by business organization that gave opportunities to the group to join in doing business and deal directly with them without any experience.... We studied the market, contacted them and agreed to trade by ourselves.... It was to show the group ability"

(Teerapong Bannarat, interviewer)

Community organizations joined Mairiang agriculturalists' group to help manage rubber production, share knowledge and experience.

"Alter Mairiang was established and operated to achieve the goals and objectives set. It took quite long time to be accepted by the other communities. From 1987 many agencies and organizations visited and shared knowledge and experience with the group. They got the approaches and methods implemented at the group to apply for their owns, sometimes they succeeded but sometimes they failed."

(Prayong Ronnarong, interviewer)

We can observe that both public and private agencies/organizations joined the group with business purpose. Most of the organizations joined the group to

help facilitate and support the group operation and to share experiences and mutual benefits.

## **2) The Second Phase (1991-2001)**

At this period, Mairiang agriculturalists' group was transformed to the status of Mairiang Community Development and Study Center. The Center focused on human resource development and the learning unit for the community was a place where they learned and shared knowledge and experience before adapting for their own ways. The goal of establishing the center covered other activities, so it was different from the goal set for the Mairiang farmer group which has only one activity to solve rubber problem.

The joint of five-party organizations in the natural resource and environmental management with the center was described below:

### **(1) Government Organization**

Department of Non-formal Education under the Ministry of Education supported the center in both financial and technical assistance. The Learning Unit was established by the department to offer training courses required by the center.

"Non-formal education operated the three-section tasks, section one provided non-formal education, section two supported formal education and sector three supervised the promotion of informal education... what I have been doing for my part is to respond to the needs of villagers ... we know what they want by closely contacting with them and helping them ... we have to participate in the activities they have so we can learn the problems".

(Sahat Lertkrai, interviewer)

Department of Agriculture and Co-operative Promotion under the Ministry of Agriculture and Co-operative supported the center for finance, technical assistance and co-ordination. Unit of Agricultural Technology Transfer was established to transfer technology, offer training course, demonstrate learning experience and give advice to the farmers in the sub-district.

"Basically, Mairiang Community is a group of people who are interested in community development, particularly in agricultural development. As Mairiang Community Development and Study Center was founded, the roles of community development of the center are strengthened. It is very active.... As government officials in public organizations, our role is to respond to the needs of people in the community, especially, Provincial Unit of Agriculture. The unit plays an important role in supporting and promoting of natural resource management related to agriculture".

(Mora Charoensil, interviewer)

Department of Environment Quality Promotion under the Ministry of Science Technology and Environment supported technical assistance on training with the goal of developing integrated agriculture system and local plants.

"Department of Environment Quality Promotion assists the center on training and supports on agriculture and environmental management with finance, suggestions and other requests from the community ... and now the department is approving the community proposals for financial support".

(Piangphen Srithammasit, interviewer)

Department of Technical Agriculture under the Ministry of Agriculture and Co-operative supported Sustainable Agriculture Project in collaboration with Denmark that financed the project.

"The Department of Technical Agriculture is a co-operating unit to facilitate co-operation between the center and Sustainable Agriculture Project of Denmark. The Department also supported on finance, technical assistance, training and fieldtrip to the farmers who joined Sustainable Agriculture Project.

(Kriangsak Chuchart, interviewer)

Social Fund under Saving Bank supported finance as required by the center for the projects proposed including the eight courses of the center.

"The SIF has facilitated the center since 1998 before the termination of the project in 2001.... SIF assisted the center on financial support to the eight activities".

(Prayong Ronnarong, interviewer)

National Institute on Thai Intellectuals and Education supported the activities related to local intellectual, finance, technical assistance, etc.

"National Institute of Thai Intellectuals and Education supports the center on traditional Thai medicines, herbs, local intellects, career development and foods.... The institute also supports activities related to transferring of local intellects among the community".

(Kajorn Tipaphong, interviewer)

Research Institute Public Health System under the Ministry of Public Health supported by offering training courses with 10 pilot projects on health care.

"Research Institute Public Health System assists the center on financial support in order to help the villagers and their families on health and continuous projects... The institute also supports on technical assistance, training and fieldtrip so that the

villagers can learn and adapt the experience learned for themselves".

(Arune Senatipbodee, interviewer)

We can conclude that public organizations play important roles in natural resource and environmental management of the center. Their roles were to protect, assist people in the community.

In this study, the usual activities supported by government organizations will not be mentioned except the activities of the government on natural resource and environmental management.

As Mairiang community was very well-known with outstanding community leaders, many public organizations supported the operation of the community in two levels: central and local. At central level, the public organizations assigned the experts who realized the importance of community development and potential of the center to join the forum, share the ideas and inform government policy. National Education Commission was one of public organizations assisted with financial support to implement the projects on education development.

At local level, there were four parts of local organizations joined the center, agricultural officials, educational officials, public health officials and others. The roles of agricultural officials, educational officials and public health officials were mentioned earlier while other government organizations dealt with the center at the surface level.

"Once there was a man came and asked us whether we have got any problems and how to solve them, then he gave some budget to carry on the project such as the activities for youths".

(Suchin Jamjaras, interviewer)

However, it also found that most of government officials supported the community by top-down commanding. The community did not agree to follow the commands because the projects proposed by government organizations did not meet the needs of people but they had to join the activities unwillingly with the respect to the community leaders. When the projects were terminated these groups of government officials did not pay any attention on impacts of the projects happened to the community.

"If they participate the community activities as they are government officials, the people will treat them as their boss. It leads to the failure of the projects... Once we were led by government sectors, we could not think by ourselves, we did not need ... then the problems happens continuously".

(Suchin Jamjaras, interviewer)

The successful role of government organizations on natural resource and environmental management also depended on characteristics of each government official. If they were interested in community development activities and

they found the right ways to support, the community projects would be operated continuously.

## **(2) Non-Government Organization**

Village Foundation supported every issue proposed by the center especially the co-ordination with other agencies.

"Village Foundation joined the community to assist on basic technical assistance, co-operation with other organizations domestically and internationally related to career development... the foundation is a core unit to co-operate with other agencies and organizations".

(Mora Charoensil, interviewer)

Thai Intellectual Network supported technical assistance, finance and co-ordination.

" Thai Intellectual Network always assists the community on co-operating with other agencies related to local intellects, education and fieldtrip in the country".

(Prayong Ronnarong, interviewer)

Yommana Network supported the exchange of knowledge and experience on administration and management of the center.

"Firstly, I did not think of setting Yommana Network, we had several meetings among different groups of farmers to find the best way to solve poverty problem of the farmers. They said that the poorest group of people in Thailand was in Nakhon Si Thammarat, so I felt very ashamed to lose our identity as I think that the poorest group of people might be a group of people in the northeastern part of Thailand. ... I went to Pak Panang river basin and found that it was true, they were very poor so the co-operation of Yommana Network was formed".

(Prayong Ronnarong, interviewer)

Rubber Network supported both finance and technical assistance.

"Rubber Network was formed prior the establishment of Yommana Network under the collaboration of rubber farmers in Nakhon Si Thammarat. The network aimed at co-operating and assisting the members to solve the problems happened to the group".

(Prayong Ronnarong, interviewer)

Community Health Network \* supported implementing of the projects and activities of the center.

In general, most of private organizations had their clear goals to assist the community to overcome its problems, especially, to develop integrated agriculture and alternative agriculture.

At the first period, Village Foundation joined the community to discuss on strengthening community and played an important role on supporting community activities

By co-operating with other organizations both government and non-government. Many organizations and agencies participated in community activities and learned the process of community development from each other.

National Education Commission and National Culture Commission helped publicize the community performance and reputation.

Most of activities supported by non-government agencies were to open community people's view and worldly outlook by asking the community leaders and members to join the fieldtrips to different areas.

### (3) Business Organization \*\*

The joint of business organization with the center on natural resource and environmental management was not clear because the center was a non-profit agency. The main goal of the center was to develop human resource in Mairiang community. Pattern of development focused on practice in the real situation in order to solve their problems by themselves effectively not to gain benefit from the operation. \*\*\*

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\* Community Health Network based on development of people quality of life with well understanding of natural phenomena, and criteria of life and health. Modern development helped people to have better living in many ways, at the same time it can destroy community way of living for example, medical technology and modern public health care may destroy local knowledge and intellectuals on self-reliance. People left their lives on modern public health system because structure of social system has pushed them to new economic and social system, the system of competition which aimed at seeking for the highest benefit in the consumption culture. The new way of living caused many problems; destruction of natural resources, deteriorated environments, bankruptcy, immigration to the cities, drug addicted, child labors, prostitutes and AIDS. Local intellectuals, traditional culture and ancestors were insulted by the acceptance of new economic and society. Luckily, there were some local learned persons left with stable social structure which would be rehabilitated. The rehabilitation of the culture, society and environment needs a holistic way of development. The holistic way of development was to develop health care system, career, moral and mental simultaneously. The balance of ecology system was the most importance thing to reconsider carefully. Self-sufficient way of living should be applied for the people in the community for their self-reliance in every aspect.

\*\* The research found that business organizations indirectly dealt with the community on natural resource and environmental management. There was a business organization named Unit of Agricultural Information Exchange under Non-toxic Agriculture and Soil Rehabilitation Project organized training courses for the farmers in Mairiang Sub-district.

\*\*\* At the first period of implementing the second plan of community master plan (2002-2006), the researcher also found that the center has developed rice processing industry in the form of community business (rice processing activity). They bought Hommali rice from Barkrue Farmer Group in Yasotorn province and processed into three products, husked rice, brown rice and white rice at the community rice mill. The community business started to operate in 2000 by admitting the members with at least 100 baht share per person to join.

#### (4) Academic Organization

Rajamangala Institute of Technology participated in the center activities and provided training courses, finance and others including eight activities in the first phase of the community plan (1997-2000). Because of the community reputation, there were many researchers, professionals and graduate students in different fields joined to learn the community operational process.

Several education institutions such as, Rajabhat Institute, Technical and vocational college also organized field trips for the community leaders and members to gain more experience from other communities. (Community Visiting Book, 1998-2000)

As professionals and academic persons were from different fields, their expertise and potential helped continuously develop the community.

#### (5) Community Organization

Ten to twenty community organizations visited the center in order to observe rubber processing system, exchange idea, knowledge and experience and participate in the process of developing the center master plan.

"The mobilization of self-reliance has encouraged all Thai people to think of working together in a group, sometimes, I am afraid that money will spoil them out of their tracks... Usually there are about ten to twenty groups of people visit the center each month. We have to be well-prepared of ourselves on management of every activity operated in the community".

(Prayong Ronnarong, interviewer)

Being participated by the five-party organizations on natural resource and environmental management for self-reliance of the center indicated concrete example of co-operation among organizations on community development. The five-party collaborations were expanded to two different networks : Nakhon Si Thammarat Rubber Network and Yommana Network.

#### Nakhon Si Thammarat Rubber Networks

History and background were written in Kondee Sri Sangkom magazine (1995; 36-49) as follows :

The establishment of rubber processing factory made Mairiang community become learning center since 1987. Many rubber farmer groups in Nakhon Si Thammarat and neighboring provinces visited to learn the process of management of the center.

Yangkorm Group sent its representatives to learn from Mairiang rubber factory and they formed their own factory in 1986 with more than eighty members joined the group. Yangkorm Group adjusted Mairiang methods of management to be suitable for themselves and they were able to produced five tons of rubber per day while Mairiang could produce only 1.5 tons per day. Mr. Prayong Ronnarong, Mairiang Rubber leader was invited to give his advice to many groups so the idea and patterns of rubber production were expanded widely throughout the region.

However, many groups were failed to adapt Mairiang way of rubber production because of the limitation on capital to invest and uncertainty of adapting the new alternative chosen but the relationship among Mairiang Group and the unsuccessful groups was satisfied.

In 1991, Mr. Prayong Ronnarong was selected to represent Mairiang community to join a field on agriculture and co-operative in European countries for two months. A year later, the new way of managing co-operative system on agricultural products was introduced starting from agricultural products collecting, processing and trading with co-operative system in order to gain more power of bargaining with the mediators. It was a starting point of proactive career development with the purpose of expanding networks when the meeting of sixty leaders was organized in Nakhon Si Thammarat province. They believed that the joint as networks of people would create power of bargaining which led to the reform of society, political system, bureaucracy, laws and economy.

At the meeting, three groups of successful farmers presented their experiences : Mairiang, Yommana and Sakaew. They concluded that rubber farmers should have more than one career and not to depend on only rubber. They should have fruit orchard, vegetable and animal farms with the systematic process of their products. The networks in every level should be developed and each village was encouraged to have its own processing factory. At the end of the meeting, "Nakhon Si Thammarat Agricultural Development Institute" was formed to collect sub-projects from each village.

The process of information collecting and processing by the villagers was very valuable. They were able to collect basic statistics on their member's products, incomes, investments and profits. The information and data were used for their plan in the future. The province assisted eleven communities of farmers with financial support after the data and information were completely collected. Twenty two million baht was allocated to eleven communities in 1993 and 1994 respectively.

In preparation stage, they prepared for the construction of rubber factories, training the community leaders on resource management, visiting other communities, organizing meetings in different areas and joined as a network called "Nakhon Si Thammarat Rubber Network" with revolving fund and jointed market unit.

The learning process of the network from fieldtrips and training courses was published in a book named "Completed-cycle of Rubber Farmers Manual". The manual consisted of world market structure, Thai rubber market, process and formula for dried sheet rubber production, factory system, rubber industries, small-size enterprise management and mixed farming in rubber plantation. (Mr. Prayong Ronnarong was one of the leaders in Mairiang Rubber Farmer Group and a secretary to Nakhon Si Thammarat Rubber Network)

In 1994, the government put the pattern of rubber network in the government projects and supported rubber farmers in eighteen provinces to have their own processing factories, so three hundred factories were constructed. Mairiang rubber factory was a learning unit for them to learn and Mt. Prayong Ronnarong became a resource person who transmitted knowledge and experience to other farmers.

In 1997, The master plan of rubber development for secured career was drafted. The master plan was reviewed by public from twenty-two provinces. The

public hearing of the master plan was organized to get supports and suggestions. The master plan contents focused on the importance of rubber as an economic plant of the country, so the rubber farmers should find their own ways to solve the problems including the determination of areas for rubber, rubber processing and setting the price.

All rubber farmers approved the master plan but they could not put it to be approved at the national level. Although the basic problems on rubber plantation were solved but some problems that were beyond their ability still remained for examples; the sanction on trade by using ISO of the competitive countries, Vietnam and Indonesia, and higher capital to invest. The master plan was adjusted to social development plan which determined main career and minor career for the farmers. Mairiang Community Leaders Council drafted the social development plan in accordance with the national economic and social plan, volume 8 (1997-2001).

The plan focused on multi-career development by reducing number of land for rubber, mixed farming, balancing of ecology system and reducing capital to invest. The plan also responded to the Royal initiative on new theory : sufficient agriculture.

### **Yommana Networks**

Nakhon Si Thammarat Rubber Network was a beginning of Mairiang community to learn experience outside its community. The relation originated from rubber farmers network and expanded to orchard farmers network and rice farmers network. Yommana Network was then became a provincial new network which formed by three groups. It was a significant change of the relation in the society where the different groups of people joined and depended on each other. The background of Yommana Network can be described below :

Yommana Network was formed in 1995 when the three groups of farmers under Nakhon Si Thammarat Agricultural Office met together at a monthly meeting. At the meeting, the Royal initiative project on development of Pak Panang River Basin was raised to discuss the Royal remark on December 5, 1994 which mentioned that the poorest group of people in Thailand was a group at Pak Panang River Basin. The remark hurt the feeling of the farmers who participated the meeting because they were ashamed to learn that even the King, who was always busy, knew the crisis while other groups of farmers in the same province did not know the problems and how to solve. So the attempt of the two groups, rubber farmers and orchard farmers started.

At the meeting, they concluded that rice farmers group was the weakest group because they observed that rice farmers always mentioned on leaving their own career. They proposed the plan with the idea of helping rice farmers to become wealthy. They brainstormed to find causes of problems of poverty of rice farmers group based on the experience of rubber farmers group. Two people : Prayong Ronnarong, a rubber farmers group leader and Treewoot Pattanaratana, Kiriwong villager leader were invited to find the causes of problems of rice farmers. They found that all land used for growing rice was ruined for a very long time without systematic maintenance so the rice farmers could not produce good quality of rice. They pushed their children to study and work in the different areas instead of helping them at the rice farms. Machines were used in the farms to replace the traditional ways of

farming. The price of rice was controlled by the mediators because the rice farmers did not have enough space to dry the products or a drier machine to eliminate humid from the grains.

Another problem was the low quality of rice grown by rice farmers. Traditional rice strain was grown in flooded areas instead of growing good quality of rice such as Hommali or long grains rice.

From the causes of problems mentioned, the idea of forming Yommana project with three groups of farmers joined after that a rice processing factory to produce noodle from low quality rice was constructed. The factory was systematic designed with well treat of wasted water in order to produce noodle for the whole province consumption. At the same time, rice mill and rice drier factory were built with the support from three groups and donation from Bangkok people. The joint of three groups registered in order to do business by their own.

Recently, community business of the three networks; rubber farmers, orchard farmers and rice farmers have their own factories; one rice processing factory, six rice drier factories, four rice mill with high capacity of production and two cold storages.

The joint of the three groups was a starting point of searching for self-reliance on the basic of understanding and thoughtfulness among each other.

From the study of five-party organizations that participated in natural environmental management for self-reliance with Mairiang Community Development and Study Center, the results of the study have been found that the five-party organizations helped, supported, cooperated and coordinated with the center, by exchanging learning in management of resource and environment for self-reliance with the center. Regular meeting, study trip, training, seminar and creation of consciousness were also made in order to exchange and learn in resource and environmental management for self-reliance of Mairiang Community Development and Study Center.

**Table 11 : Conclusion of five-party organizations take part in resource and environmental management with Mairiang Community Development and Study Center**

Organization	First Phase (1962 – 1991)	Second Phase (1992 – 2001)
1. Government Organization	At the time of establishment of Mairiang Agriculturalists' Group and Mairiang Gardeners' Group with the aims of problems solution of low price of rubber and interference of mediators, only three organizations distinctively participated in resource and environmental management. One out of three organization is government organization who coordinated and cooperated with the center and helped in	It was the stage of changing from Mairiang Gardeners' Group into Mairiang Community Development and Study Center. At this phase government organization supported the center in the forms of training, seminar, field trip, supplementary occupation training, establishment of learning center, giving whole or some budget and others.

**Table 11 : Conclusion of five-party organizations take part in resource and environmental management with Mairiang Community Development and Study Center (cont.)**

<b>Organization</b>	<b>First Phase (1962 – 1991)</b>	<b>Second Phase (1992 – 2001)</b>
	various ways : knowledge, ideas, suggestions before and after establishment of dry rubber processing factory.	
<b>2. Non-Government Organization</b>		This organization supported the center in various ways : providing training course, organizing the stage of view exchange, taking villagers to join seminar and training course. It also helped the center to coordinated with other organizations and sectors.
<b>3. Business Organization</b>	This organization helped villagers by inviting them to visit producing process, processing steps and seeked the market for their rubber before they could find the market by themselves.	The participation of this organization with the center in resource and environmental management was not quite clear. This might be because the center had main aim to develop people and to educate them to learn from real situation and experience. So the framework of this center was to educate people for the purpose of self-reliance, not for business. However in the future business organization took part with the center much more than in the past.
<b>4. Academic Organization</b>		Rajamangala Institute of Technology took part with the center in resource and environmental management by helping the center in various ways: giving knowledge, training, budgetary support and others. Eight activities were provided by this institute, assigning the academics to train villagers and sometimes villagers were invited to join training camp at the institute. Besides this, the center created cooperation with the institute in making local curriculum for graduate level. It is now is the step of procedure.
<b>5. Community Organization</b>	This organization took part with the center in resource and environmental management, paying an important role as media and equipment to create learning to the center by cultivating consciousness of learning to villagers in other communities. Because of this various communities took a study trip, got trained and exchanged experiences with the center.	The participation of this organization with the center in resource and environmental management was the same as in the first phase, however the other concrete expressions were cooperation and expansion to be network of cooperation. These two networks of cooperation were accepted : Nakhon Si Thammarat Para Rupper Network and Yomana network.

## **CHAPTER V DISCUSSION**

According to the research on “Learning Networks of Resource and Environmental Management for Self Reliance” studied from Mairiang Community Development and Study Center, the researcher set up the frame of analysis and discussion of results of research from 1962 – 2001 which was the beginning of Mairiang agriculturists’ group. Nowadays Mairiang Community Development and Study Center were community organization set up by the people of ten villages in Mairiang sub-district where they were located. The main purposes were to develop Mairiang community and to solve various problems, so the results of this study could not be discussed apart from Mairiang Community Development and Study Center. It was activity consideration that covered the scope of procedure, while consideration of Mairiang Community was area consideration. The researcher concluded the result of the analysis as six objectives. The finding of this study led to the following discussions.

### **5.1 The Context of Mairiang Community**

Due to the problems and the crisis of economy, society and politics in last decade, there were excessive changes : the most prosperous and the lowest changes in economy at the same time. They not only affected the specific problem but reflected the lack of balance in learning in Thai society as well. Lacking of local wisdom led to culture trend of the world especially western culture effecting progressive ideas to develop the country in economy, politics , administration, education and the others. The risk in the world society did not only affect the city society but also expanded to local community and led them to the same situation. The social cultural variety which used to be the local identity disappeared or decreased. This condition occurred in Mairiang community.

Mairiang community is located in Mairiang sub-district, Chawang district, Nakhon Si Thammarat province. It has usually been mentioned for a long time in academic meeting about its strength and local wisdom. Its potentiality was publicized in documents, articles, research, audiovisual aids by propagating in academy as printed matter and video tape, a case study of scholars, developers and researcher . It was set as an example or the learning process for researcher of other communities and general students. It was also a community example, experimental community of field trips for government authorities or private concerned in the country or abroad. Mairiang community is excepted as an example of variety of local wisdom. It used to face a lot of crisis problems but it still exist in the midst of changes of economy, society and culture. If fought against the adaptation from the past to present through crisis society with its local wisdom, thoughts knowledge and Mairiang people’s potentiality.

Mairiang community adjusted itself to the influence of changes in economy, society and culture. Nowadays uncle Prayong or 'Loong Yong' or 'Na Yong' is a key person of people among different groups, cooperates government authorities, and private organizations whose activities are in the community. He encouraged people in community to help each other solve and analyse problems. And the board of the Mairiang leaders as administrators also join hands to develop the community to survive in society. It might be said that local wisdom which Mairiang people help each other to solve their problems based on being dependent in the community by learning from their old generation's experiences

From all present showed local wisdom development for self-reliance of Mairiang community through the learning process resource and environmental management from the past to present. In this case Prayong Ronnarong expressed the necessity in developing the original local wisdom plus the new model in order to educate people in community to live together happily and to know the relationship between them and their family, community, resource and environment in balance developed to be sustainable, helping the community adjust culture to be sustainable improve local intelligence stressing on self-reliance develop local wisdom to know what is on globalization tendency and improve and strengthen the community with organizations with government and non-government organization including various groups who supported Mairiang community development to be strong and sustainable in the far future.

## **5.2 Development of Mairiang Community Development and Study Center**

The problems in Mairiang community were the same as in the other places which generally happened in Thai society. There was deep pressure from the outside pushing them to change the way to produce their products which affected the method of thinking and changed their way of life. To give value to the base of local resources and the changed relationship among people in community the following unsatisfied factors influenced community :

1. Market Force
2. Planned change by the government in the form of policy and project
3. Tendency of people movement

The mentioned pressure or tendency of changes flowed continuously to the community without preparing. The result in individual person, family, group and community is to go along with this tendency or influence without surveying potential resources and the real community condition equivalently. Though community organ establishment did not deal with the organizations and good understanding for the necessity. The most important was the lack of the same goal or point of view in the future in Mairiang community. It turned to competition to exist by oneself not trusting any others and contradiction. All became negative power to reduce origin capital "social capital" of Mairiang community which was social relationship, help and pride in the natives, the southern part.

However, the tendency rushing to Mairiang community was not only the market force and government policy called “principle tendency” but development tendency for alternative as well. It was the tendency or factor from the outside which was important to support Mairiang community to get the process for solving problem by development according to the principle tendency. Alternative tendency such as concept in culture community which is important for renewing culture led to make local community people aware of applying their local wisdom, to apply this local wisdom or the concept of social community encourages strong people to support their developer’s potentiality by using the exchanging tools and working process of social capital. The policy of decentralization and the process of the National Economic and Social Development volume book 9 (2002 – 2006) makes people be interested in their local. And the movement of political reform asking for the new constitution copy 1997 caused political alert and created citizenship in society. This alternative tendency changed, infiltrated and supported solving process of the community leading to adjust method of thinking and turned to appreciate local culture and local wisdom. They are alert to assemble and be dependent which can be seen in solving problem process of Mairiang community.

The condition of the same problem in every village of Mairiang community caused the same goal or direction for developing them by the same way. Analysis thinking to create knowledge and understanding problems and ways to solve them is community learning. This learning is the knowledge which clean their minds to care and be responsible to the community. It is the wide concept as mentioned by Prayong Ronnarong “The people can be self-dependent only by themselves but all of them have to be self-dependent as a whole”. They thought together consciously, made the rules for community and set groups of organs with clear structure and role. It appeared in setting up Mairiang agriculturalist’s Group, Mairiang Gardeners’ Group and Mairiang Community Development and Study Center as diagram given below :

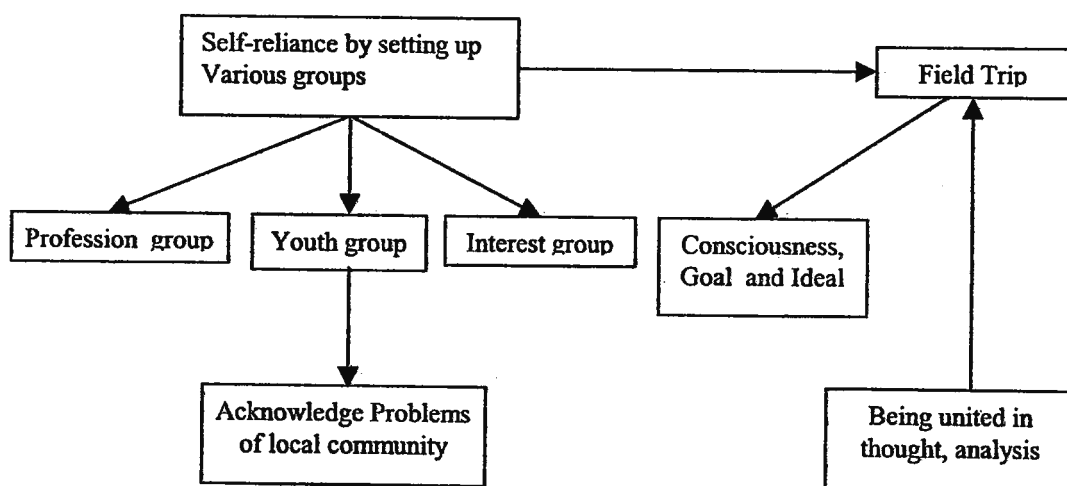


Figure 8 : Process of problems solution of Mairiang community

### **5.3 Factors Affect the Occurrence of Mairiang Community Development and Study Center**

The process to acknowledgement and problems solution at Mairiang community with same aims and consciousness to develop local became social power supporting high potentiality for community responsibility. Skills in giving knowledge or being united in this process public problem, realizing in responsibility for public is new quality in a person which is called personal mastery. These are qualified for leaders, that is, solving problem process or finding the way out of crisis creating leaders or core to change community because to give knowledge and make the people realize in their place are the factors to create leaders. The knowledge given by people in the community makes them responsible for finding the way to solve community problem as mentioned in the fourth chapter. Besides this it is the social process which Mairiang Community has done for community way. It is to set group and participation network to be united in solving problems continuously. The starting point by getting knowledge and understanding with the same concept is to make community people be qualified with high potentiality to change agents and cause social process, that is, to be together to solve the problem in Mairiang based on the old generation's experiences. Little by little they get their experiences for periods of time to find the way to solve the problem. They assembled in groups of farmers, gardeners, and Mairiang Community Development and Study Center respectively. They are also wise enough to gather in groups of the same profession which is Nakorn Si thammarat rubber network. The other profession is called Yommana network. The movement of assembling effected the direction and policy of Thai local development. Mairiang community is the origin pattern for community development plan. It was the pilot community for the projects or activities of the government and private.

Mairiang community found specific way to adjust aims to work together happily with warm family. The community is strong with sustainable resources. The learning process is not backward to the past. It is dynamic by the image of Mairiang Community Development and Study Center which flows non-stop according to social changes along with globalizations or global information. As Office of the National Education Commission (1997: 70 – 72) analyzed adjusting process of the community people which agreed with the changes of Mairiang community as conclusions given below :

1. The process to apply culture for developing, the outside culture especially western world which happened in the past 35 years urging country development caused changes the method of producing products, relation design and beliefs of the people and community. However these changes did not thoroughly happen. General people still keep on using their way of lives or culture and adjusting appropriately from the past to present by origin value system which cannot be seen to develop their lives. They appeared in activities of economy society, tradition and community rituals.

This process could be observed and studied through educated people's lives. They had thinking system by mixing value and worth for production which helped



nature, neighbors and community. They got the economy return substantially. The informal assemble of the people by the leaders who applied what they had and used them appropriately. It was indicated that the method of thinking, direction and model of management agreed with the community culture. Therefore the villagers' way of lives and of the past community based on the generosity between relatives and neighbors aiming to be self-dependent.

2. The process of social and culture development mechanism related to progressive technology of telecommunication helped the local people contact widely. On the other hand it drew people apart from the community and relatives. The community set new model of management in the form of groups or organs with network inside and outside the community such as economical group and various activity groups suitable for the place and response to groups members by cooperating with their leaders.

3. For the process of creating community institution which were family, religion, education, they set new institution that was Learning Center as complete Learning Center and professional development. They tried to set capital institution for the community which let the villagers learn and exchange their experiences to face changing tendency.

Development of Mairiang Community Development and Study Center with adjustment of local wisdom development regain their consciousness and spirit in the new situation, condition of problem and media for new local wisdom to adjust to globalization with culture as immunizing agents find the way of life in the community and be self-dependent proudly. The effort of Mairiang community fighting against development tendency based on intelligence base appearing in the form of activities such as chicken feeding, mushroom farming, pig feeding and the others. These activity groups were developed by the local wisdom of being self-dependent. As mentioned by Prayong Ronnarong "local wisdom development is not only in the activity group but in every activity of the community". It could be done individually but related to economy and social activities. Culture, politics, technology and environment were old concept of development, old direction to new concept. New direction called vision was the adjustment of method of thinking which could be seen in globalization tendency that developed economy system to disaster, materialism and depending on others. How can they go to the sustainable direction? So activity groups have to be related to the others.

#### **5.4 Features of Resource and Environmental Management Mairiang Community Development and Study Center**

Mairiang community was established and changed progressively, however it could exist among changed tendency. It was indicated that Mairiang community had education, learning and collecting local wisdom to be self-dependent. Though the community received the motive from the new economy development and lost their self-dependence. Nevertheless local wisdom did not disappear because Mairiang community adjusted themselves by learning process in different ways such as talking for understanding and urging to be unity of the community. The following features of

learning process : meetings or learning center, field trip, exchanging experiences, seminars inside and outside community, training by resources persons inside and outside community, culture activities, talking or exchange between teacher and students. Educated persons who studied or did research in the community made intelligence last and be developed stronger and increased it to agree with social change in the form of self-dependence by setting learning center and community development in 1993. And the council of Mairiang Community Leaders was set in 1997 with experiment learning from activity groups in the form of integrated agriculture such as rice farming, gardening and chicken feeding etc. for reducing family expense in many models according to the aptitude and readiness of each family.

Going into details about resource and environment management of Mairiang community, the villagers learned and adjusted their ways of lives in producing products according to change tendency. But the changes were based on basic resources environment and local wisdom whether there were activity groups or asking for support from the outside work unit such as asking for budget from social investment fund or SIF. It is the project for solving social problems stressing on reducing social problems due to economic crisis by strengthening community organ stressed on hiring and increasing income. Mairiang community was considered how they planned for SIF. It was said that villagers and community key persons brainstormed and exchanged experiences by getting knowledge from resourced persons from the outside including government authorities who carried on research study for the benefit of all sectors. Also private organ and the community leader shared ideas for every part of the community setting eight activities completely supported by the institute of social investment fund. The mentioned result indicated the potentiality of doing activities in every part of Mairiang community. These activities were not only to learn by doing but to show their ability and potentiality in solving community problems as a whole in order to be self – dependent on basic agriculture which was their principle way of community life. And it indicated the relationship between the original local wisdom and the universal one which agreed with changed tendency of society knowing what is up to the context of the community.

## **5.5 Learning Process of Resource and Environmental Management of Mairiang Community Development and Study Center**

According to the whole analysis in Mairiang context Mairiang Community Development and Study Center had been organized as the mechanism of administration management. However when the researcher deeply analyzed in working process of learning center and community development for administration, resource management and environment it was found that the followings are components that make the center successful in resource and environmental management :

1. The leader: In the center the leader was very outstanding especially Prayong Ronnarong, the leader who had spiclality and collective leadership. Since the council of Mairiang community leaders consisted of forty members from every village in

Mairiang sub-district. So this council was an important factor in doing activity programs in the community. The said leadership helped carry on activities for self-reliance of the center and made it move because all activities were extended to cover Mairiang area.

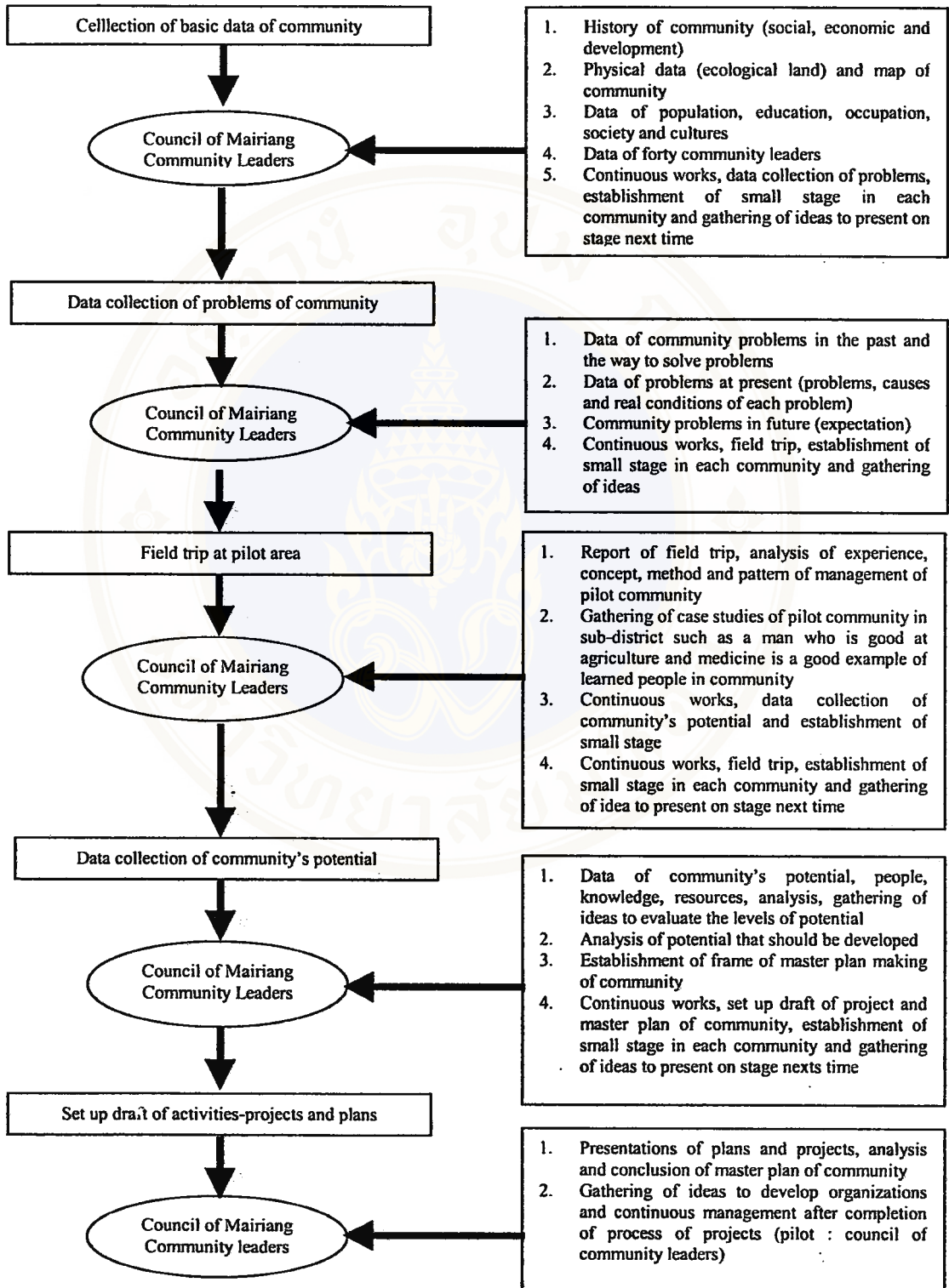
2. Learning center: The leader had collective leadership in brainstorming and working by using the same center to study each other with the members. There were three fields: fundamental knowledge, required knowledge and suitable knowledge. So an especial part of learning was to know oneself because a popular motto of self-dependence was to know one's own potentiality before doing anything for fear of failure in the future because the failure in the past of their experience did not make them really understand how to go on their living. The principle method of learning was to have experience in exchanging concepts in the village and sub-district. The learning center of the villagers was approached, which was important for planning the operation and evaluation of various activities in Mairiang Community Development and Study Center.

3. Working with data: A distinctive point in Mairiang Community Development and Study Center to operate activities was to use data as tools for making decisions. It was said that decisions for the community to operate activities were based on the leader who had to study data in details before making a decision. The data should be in sub-district and activity groups. The prominent point of using data of the Mairiang board was collected by members and each family. The data should be exactly what they needed and reliable such as data in the community, family income-expenditure, data of community occupation, professional data, knowledge data and outside resources.

They used data for decisions to work on eight activities especially for price protection, marketing, for example they grew mushrooms in an activity, then surveyed their demand for mushrooms each day, the quantity, the marketing and the farm nearby. These data could make the activity groups work rightly and be sure to sell their products in order to get the profit and guarantee the price for the members.

What mentioned above shows that to use data was the important tool to operate various activities of the center. They were the data programmed and collected by villagers. Otherwise it could be said that the useful data must be the data relating to the villagers' life. They needed those data and kept with their own.

4. Creating learning process by doing: In setting a master plan of community for self-reliance made by Mairiang community, five fields were considered: education, sustainability, agriculture, public health, business and community industry and community fund, which were in the first community model (1997-2001). The villagers stressed on following education plan. So the most learning process was very important in the process of self-dependence of villagers because if they really had experience in any activities they would have known whether it was suitable or not and how much potentiality they had. Besides, the most importance of self-dependant composition of Mairiang center in resource and environment management was the way the villagers construct knowledge from various data which was the essential part in self-dependence by using data to work. The knowledge was the power to maintain their lives by collective action learning which was a transitive process or data community of the villagers.



**Figure 9 :** Learning process in resource and environmental management for self-reliance of Mairiang Community Development and Study Center

For a case of benefit taken from Mairiang Community Development and Study Center, the researcher studied several activities of group members of the center. The result of study indicated that villagers who are the members of group agreed that there were a lot of benefit taken from the center with details given below:

1. Idea in seeking the way to solve problems: Learning process in working together helps villagers as members bring out their idea potential and share with others. It also makes confidence with their idea and encourages them to express their view. This affects development of concept in order to find out an alternative way to solve problems together and to tighten the relationship among members.

2. Technical knowledge in working: Villagers not only face problems and think of the way to solve them together but also accumulate their knowledge and technical experience through the process of training, seminar, field trip and try out of real experience in community, for example, technics of fish breed, pigs rear and herbal medicine making etc. Mairiang Community Development and Study Center coordinated with academic resources to bring this technical knowledge to community and then provide both theoretical and practical training courses to villagers. However leaders of community still use their knowledge and capacity that has been tried out several times and transmitted to the members of the center and Mairiang community.

3. Economic result: Even if the result of working of Mairiang Community Development and Study Center could not help all villagers live well, but help them in the issue of economic because basicly Mairiang villagers are not famished but not rich as well. However they live in moderate way and can reduce some problems satisfactorily.

**Table 12 : Benefit taken from Mairiang Community Development and Study Center**

Benefit	Potential	Process taken to community
1. Idea in seeking the way to solve problems	Idea of self-reliance by seeking the way to solve problems through process of group and problems solution determined by group	Meeting to analyse problems and determine alternative way together through experience and local wisdom of people in community
2. Technical knowledge in working	Technics of integrated agriculture, organization of shop's activities, management of saving group and herbal production etc.	Training, seminar, field trip and practice in real situation
3. Economic result	Supplementary occupation and extra income, cut off unnecessary expenditure that helps reduce debts and increase saving for the purpose of stable life insurance	

## **5.6 Five-Party Organizations that Take Part in Resource and Environmental Management with Mairiang Community Development and Study Center**

Considering the occurrence of organizations among all parties and Mairiang center, it was found that the people in the community started the process by talking together frequently. Discussion caused many activities, which were available for the community. They had board range of concept to create activities with more obvious process. Villagers assemble caused cooperating power to support community organization progressively while knowledge, thinking system and experience of the leader group supplemented their learning to the direction that assist the activities to maintain their lives stably in Mairiang community.

Later Mairiang Community Development and Study Center were opened up generally dealing with more parties. In the meantime the changing society and economy changed the villagers' relationship. They became more estranged from each other. But the effort of the group leader considered the necessity to muster their strength for maintaining in the changing tendency. So they gathered the group leader and new generation members to work together on the base of the community memoration together. These activities caused their way of lives stable. More people come to join them for getting benefit from those activities which made good profit to the whole community. Because of the large members of teamwork it influences their job fairly.

The power of the organizations activities of Mairiang Community Development and Study Center affected different groups of people in the society both in the local and the country. These groups of people such as the academic persons, government official, developers and village leaders who could feel the strength of the villagers and turned to consider this power. They could see the potentiality and the way to strenghten it. Then they implemented them by various resources which were suitable factors to increase the villagers power especially by setting learning process.

Five-party organizations for resource and environment development with their group leader was in the first group that worked on problem solving they had gather before with academic persons who came to study the community. These educated persons had experiences in working with community for development. They tried to urge villagers to brainstorm and look for the way to solve problem systematically and more clearly. They tried to let the formal group leader discuss with the villagers consequently. Lastly the villagers gathered to set plan of activities in order to solve problems. These activities were supported and consulted by educated person.

Besides this it was found that the occurrence of Mairiang Community Development and Study Center constructed "space" for people in the community to get used to and have experiences as other parties which dealt with them. They were government organizations, business organizations, private organizations, academic organizations and other community organizations. Because of working process the concil of Mairiang community leaders had public place to negotiate and make them equal there with creative goal for better community (which had business organizations

take advantage from the community in smaller number), supporting community by working. Meanwhile the government organization turned to care for their own service because strong community organization that is Mairiang center made other parties know and agree to join with community as five-party organizations more than giving or distributing. The technique which other parties support Mairiang center was the process for pushing the people in the community and other parties to cooperate resource and environment management. Nevertheless the process of five-party organizations for Mairiang Community Development and Study Center started from a small spot then gathered in larger group. It was started by very few generous local people who had good ideas and needed to solve local problems together then looked for supporting groups from the people or organs with the same idea and belief to join and exchange ideas and became network by spirit of local people who needs to see more prosperity of their own place.

The process of five-party organizations was concluded that there were two different kinds of organizations : concentrated and non-concentrated organizations. Concentrated organizations was done by volunteers who did not depend on the members of their parties whether they would join the activities or not. Then they tried to persuade their parties to work later. This organizations was continuous because the members are sincere to join, brainstorm and plan with group key person and they sometimes were as group key persons themselves. Thus they realized the importance of operating activities which gave benefit to the community. Non – concentrated organizations was done by working units sending their members to join as the representatives of the organs not willing to do or with their interests. This was the occasional organizations without continuous activities.

However there was one notice. The status of self – dependence of Mairiang Community Development and Study Center took action lightly on relation between the community and government organization. Maybe it was because the government did not have much role. Or it was said that in a period of time the community could maintain without relying on the government. Meanwhile they did not deny government authorities. But the strong learning center and Mairiang Community Development and Study Center which was part of society speared more obviously by the passed time, especially key persons of group, they had the state of increasing their strength gradually in the form of learning together, trying out and applying different techniques of experiment. They believed they could solve the problems. They used to suggest Thai rubber development plan but it did not work. So they expected less to the government organization and turned to operate little by little by themselves. Finally there were working unit or government authorities joined and supported. They had conflicts with local administrative organization because of the growth of Mairiang Community Development and Study Center. This affected the examination of the government working process in every level especially the local level which was very close to Mairiang Community Development and Study Center. This also helped promote and strengthen Mairiang Community Development Study Center to be self-reliance at present and in the future amidst serious changing tendency.

## 5.7 Conclusion from Data of Analysis

From a study of learning network of resource and environmental management for self-reliance of Mairiang Community Development and Study Center, it can be concluded with details given below :

1. The patterns of resource and environment management of Mairiang Community Development and Study Center can be shown in the following terms :

1.1 For development of the center, it started from the point that villagers had the same problems and they helped each other analyse these problems to find out alternative ways in solving them. They practiced and followed up these alternative way under the conditions of community context, natural resources and environment and policy on country development as well.

1.2 Role of the center played as network center in order to cooperate among villages. There should also be gathering of different villages to assist each other in solving problems and fulfilling themembers' needs, in addition to supporting the community development or solving community problem.

1.3 Policy of the center emphasizes on self-reliance, changing from single agricultural system into integrated agriculture and changing from only Para rubber cultivation into agriculture and animal breed (Para rubber, fruit, rice farm, animal bread).

1.4 Objectives of the center, it aimed to empower the community by usig individual potential, local wisdom and existing natural resource and environmental to join together in order to exchange the knowledge for problem soving.

1.5 For administration and management of the center, specific administrative organization is set up. Clear structure of administration that consists of administrators and managers is also made. Leaders and members of organization participate in learning how to administrate together by taking turn to administrate organizaton.

1.6 Learning of the center emphasizes to exchange learning through using activities of thinking together including linking as collaborators who had equal relationships but they were independent decision making.

2. The followings are principles of the center in resource and environmental management for self-reliance :

2.1 To create concept and new attitude in development to the members of community in order to understand themselves and to be able to use their potential for the benefit of community.

2.2 To make community economic system for sustainable self-reliance in all circumstances and develop into community business later.

2.3 To develop community as a whole object by having new structure of society with the same system of economic, education, public health, welfare, administration and social culture. And this new structure must be made by the members of community who make decision together.

2.4 Procedure of resource and environmental management for self-reliance must emphasize on learning together of community.

2.5 To make cooperative system in exchanging knowledge, experience and resources among persons, organizations and knowledge resources from the following

organizations: government, non-government, business, academic and community. This cooperation must be carried on efficiently for the benefit of community

3. There are two factors that affect the occurrence of Mairiang Community Development and Study Center : internal factors and external factors. Internal factors are social relationship, lesson to co-encounter with problems, history of local culture and capacity of leaders. External factors are single economic system with export emphasized, monopoly of mediators and support from outside organizations.

4. Learning process of resource and environmental management for self-reliance of Mairiang Community Development and Study Center is classified into four steps: problems realization, problems analysis, determination of proper alternative way and practice.

5. Five-party organization that take part in resource and environmental management for self-reliance with Mairiang Community Development and Study Center are government organization, non-government organization, business organization, academic organization and community organization. These organization take part, coordinate and cooperate with the center and help this center in the forms of training, seminar organization, field trip, providing supplementary occupation and giving subsidy. These organizations pay different roles, that is, government organization pays the role according to assigned works. Non-government organization pays the role by coordinating with all organizations in all matters. Academic organization provides knowledge to support the procedure. Community organization pays the role as media of learning particularly creation of consciousness of learning. However business organization has not paid the distinctive role to help the center.

## **CHAPTER VI**

### **CONCLUSION AND RECOMMENDATIONS**

The research entitled “Learning Network of Resource and Environmental Management for Self-Reliance” is a qualitative research. It is a case study of Mairiang Community Development and study Center. Mairiang is located in Mairiang sub-district, Chawang district, Nakhon Si Thammarat province. The purpose of this research is to study the general information concerning its population, environment, natural resource, economic, society and culture, and to study its development in different periods including factors leading to the establishment of Mairiang Community Development and Slimy Center. The study also investigated the management of natural resource and environmental for self-reliance in relation to policy administration and practice as well as the study of learning presences of natural resource and environmental management of self-reliance. The methods of exchange knowledge of five-party organizations involving in natural management were studied.

Two kinds of research methodologies were used : documentary and research study. Documentary research is for studying general information and overall case study. In qualitative method the researcher used various research techniques : in-depth interviews, participation, observation, non-participation observation, group interview, focus group to bring out the facts and cover different points completely.

The researcher used “typological analytic” to analyze the information gathered by putting the information in the system and finding out meaning of seperating factors to link relationship of information. The researcher then made the conclusion to answer the questions made in the purpose of the study. The results of the this study will be presented in a descriptive way as the details given below :

#### **6.1 Conclusion**

##### **6.1.1 The context of Mairiang community**

Mairiang Community is situated in Mairiang sub-district, Chawang district, Nakhon Si Thammarat province. Its area is 43<sup>2</sup> kilometers. The general geography is a high land (Soon Mountain) and it slopes to a plain of Tape river. The weather is hot and there is rich natural resource. Mairiang community has been established not less than 100 years. It used to be named “Flower Field” because there were woods (Tung Dog Mai) and natural flowers all over the field. In summer there was a fire and in rainy season the trees and flowers were grown up again. This incident happened every year. When people came to live, they cut down all the trees to grow rice. This made the natural flowers gradually disappear. The land turned to be a farm and so the name “Flower Field” had gone. The new name “Fire Field” (Tung Fai Mai) was given instead. After years passed by its name was misscalled as Ban Tung Mai. In 1897 King Rame V decentralized by establishing village, Tambol (sub-district), Amphoe (district) and province in the country. At that time Mairiang

community was expanding. Because of its expansion, Mairiang community became Tambol and since then it was called Tambol Mairiang.

The basic structure of Mairiang community is found to be almost complete in health and education. There are two health offices : Thanphor and Nongthom. For kindergarten, there is Charoenmit Kindergarten. There are six elementary schools : Wat Mairiang, Hadsoong, Had Saikao, Nongthoms, Bankanla and Charoenmit. There are two secondary schools : Mairiang Prachasan (The branch of Chawang and Rachadapisek) and Charoenmitpanichayakarn. The population of Mairiang are buddhists. They practice the same religious activities as other Thais in other parts. They are two temples : Mairiang and Hadsoong. The ruling of Mairiang community covers ten villages. There are eight villages under rural administration. They are : Banthungmai number 1, Bannonghad number 2, Banhadsaikao number 4, Bannongthom number 5, Bankanla number 6, Bannongmuang number 7, Bantrokmaidang number 9 and Banklonglad number 10. There are two villages under municipal area. They are : Bantarnpor number 3 and Bannongtrud number 8. Municipal area consists of 1,593 houses with 7,697 people (3,714 males and 3,983 females).

The area of Mairiang community is about 22,220 Rais. It consists of 13,320 Rais of plain land, 8,900 Rais of mountainous area. These areas are used for agriculture 19,750 Rais for animal farming 2,600 Rais and for tree 3,800 Rais.

The study of economic of Mairiang community reveals that in the past the main career of the people here was farming which relied on natural water (rain). They used no modern equipment. They grew rice only once a year by using animal power such as caws and buffaloes. The purpose of farming was to consume in the family. But after the wide spread of rubber trees from Malaysia to the South of Thailand The rubber trees became the main economic trees of the South. Mairiang community like the others turned the rice farms to plant rubber tress (local). Although Mairiang community changd the use of the land, growing rice is still the main career. But after 1962 when bad flood happened in the south, the fun for rubber tree farming has been established. It helped the farms by subsidizing them and giving them good rubber plants etc. This results changed economic of Mairiang community from only planting rice to planting rubber trees. However after 1992 the economic of Mairiang community was changed again. They did not just plant the rubber trees but they also grew variety of plants as well as keep many kinds of animals. Planting rubber trees was the main career, going along with rice and fruit planting.

For Mairiang community's society and culture, it was found that this community had the effect of the geographic location on where the land is close to the sea. This made possible the business communication and relationship of people from other parts. As a result, the appearance of Mairiang people were up – to – date of the news. They were brave and ready to encounter the fact. They had strong sense of southern people. They lovd their hometown and their friends. They held on tradition and customs that have been inherited in the sense of life style, housing, relationship, the belief of concumsion, medical treatment, relationship value within family, cousins and community, and the realization of pride and dignitary.

### **6.1.2 Development of Mairiang Community Development and Study Center**

This center is situated in village number 9, Mairiang sub-district, Chawang district, Nakhon Si Thammarat. Its establishment has started from the people of Mairiang. They are farmers and gardeners who have developed this center. The development can be summarized as below :

#### **1. Origin**

The environment of Mairiang sub-district is suitable for farming especially planting rubber trees. Therefore their way of living depends on rubber tree planting. Their ancestors had accumulated experiences and still in planting rubber trees. As a result, their main career is planting rubber trees and other agricultural jobs such as rice and fruit planting supplementing the family income. However, the price of rubber has fluctuated. It rises and falls depending on the market especially within the control of middlemen. Mairiang's farmers do not have the authority to set the price themselves. Because of this situation, twelve people of Mairiang gathered together. This gathering leads to the idea of self-reliance. They want to prevent disadvantages caused by the middlemen. They organize siblings and relatives to build up "Mairiang Agriculturals' Group" (dividing into two activities. The first group belongs to rice farming. The second group belongs to rubber tree planting). In 1969 the negotiation power has existed. The people of Mairiang produced a lot of rubber and they collected all the product and sold them to the mediators by bidding. Doing this made the farmers sell rubber in a higher price than before. After many years passed by bidding was cancelled because mediators realized that they were under disadvantageous conditions. The mediators gathered together and proposed similar price which is lower than it should be. This made people of Mairiang sell the rubber in a low price not different from what they did before. As a result, running activity of this farmer group did not achieve the goals settled.

However, the people still want to help themselves and they do not want mediators to take advantages. The members of the community and group leaders support the gathering. They concluded what they have done and find the ways to continue their work. It is concluded that Mairiang people have to produce dry rubber sheets. If their production reaches the same standard, the price of dry rubber sheet will be high. They can do this only when they build the factory for themselves. As a result the factory for dry rubber sheets was built by raising fund from the member. They are shareholders and they get the profit at the end of the year. It is registered as law juristic entity named "Mairiang Gardeners' Group". The members have owned and administered the factory since 1<sup>st</sup> June, 1984.

#### **2. Expansion**

During the registration process of Mairiang Gardeners' Group, the factory for dry rubber sheet was built, It was started on 10 February 1984. When the registration of Mairiang famers was successful, there was additional fund raising by informing the members the purpose of forming the organization to produce excellent quality of dry rubber sheets. At the same time they wanted to save time producing rubber so that they can run additional jobs to support the family income. Because of this, they achieved the amount of fund needed. In order to reduce the burden of the

members in the new fund raising, there was the experiment of dry rubber sheet production on 20 October 1984. They have the capital fund for running the business of dry rubber sheets starting from production process, marketing and rubber quality development. Their experiences from trial and error, visiting tour, advices from agricultural officers and rubber organization, the ancestors' intelligence in planting rubber trees, the relationship of siblings and the hospitality of Mairiang people make the production of dry rubber go on. When there is a problem, they cooperate and help each other to solve the problem. Mairiang Gardeners' Group are strictly hold together.

### **3. Dissemination**

Mairiang Gardeners' Group runs the rubber factory by getting the rubber liquid from the members, producing dry rubber sheets and finding the market of them. They succeed and it is accepted both within and outside the community. Mairiang Gardeners' Group becomes the place where people from other communities come to visit and study. In 1997 there was a Mairiang farmer leader (Mr. Prayong Ronnarong) had a chance to have a study tour of agriculture, co – operative, community fund and community industry in different countries in Europe. From this study tour, there was the idea of long planning in solving the problems of rubber tree farmers. The purpose is to support the farmers in all areas to group together. When a new group is strong enough, they are supported to build a factory for dry rubber sheets. Mairiang Gardeners' Group has run the business from 1991 – 1992 with the help of agricultural office in Nakhon Si Thammarat and other private sectors to look for groups of farmers who are ready to run the business. There are seven groups in six districts where people are ready to be factory owners. In 1993 the budget of 2,200,000 bath was granted (and there are four more projects in 1994). There are eleven projects altogether. From this support, Mairiang Gardeners' Group has extended their relationship to other communities. They must and exchange ideas. This relationship leads to branch making of rubber in Nakhon Si Thammarat. Mairiang Gardeners' Group also plays a role in policy making of the government concerning rubber. They make a plan for their rubber with people from other communities who plant rubber trees like them. They propose the plan to the government. However, the master plan for Thai rubber development can not be influenced as a national policy.

### **4. Existence**

Mairiang Gardeners' Group runs the rubber business successfully and as a result they receive the budget to finance the activities from Nakhon Si Thammarat province. They also receive money from the community and private sectors. Therefore they build a new factory and it has started to produce dry rubber sheets since early 1994. However, when there was an economic slump in Thailand and other Asian countries, this made the change of need in rubber. It also changed the price, quantity, style and production method. Mairiang Gardeners' Group lost money. From this situation, there was a change of administration and running the rubber business of the community. They continue adapting in accordance with the need of the market. They produced smoked rubber sheets and rubber drapes and they can reduce the loss. At the same time the farmers wanted to help themselves and therefore they established a new organization called Mairiang Community Development and Study Center. The purpose of this organization is to make the member have additional jobs and income by using local intelligence. There are animal farming planting,

healthy and production transformation in a form of self-reliance in every situation. The new organization emphasizes that people think, consult and work together in a form of community leader parliament with the help of government officers as requested. These government officers do not have the right to be a member of the organization.

The organization of Mairiang community becomes strong and they can run their business independently, naturally and accordingly to the real condition of Mairiang community.

The followings are factors that affect the establishment of Mairiang Community Development and Study Center :

### **6.1.3 Features of Resource and Environmental Management for Self-Reliance of Mairiang Community Development and Study Center**

In order to cover and understand the study on resource and environmental management for self-reliance of Mairiang Community Development and Study Center, the researcher divides this management into 2 phases: First phase was during 1962 – 1991 and second phase was during 1992 – 2001. The result of this study was under the framework of resource and environmental management in the features of policy, administration and practice as details given below:

#### **1. The First Phase (1962 – 1991)**

The initial policy of resource and environmental management focused on *hevea brasiliensis* only. It was initiated by village leaders who gathered to establish Mairiang agriculturalists' group with main aims to reduce and avoid to be taken advantage from middlemen who fixed the price and weight of raw rubber sheets. People in Mairiang community regathered to establish Mairiang gardener's group with main aims to gather rubber gardeners in Mairiang sub-district to solve the problems of low price of rubber, establishing rubber processing factory and producing dry rubber sheet (from member's rubber liquid) with same quality. This helps gardeners fix quality, quantity and price by themselves without interference of middlemen.

For administration of resource and environmental management in initial stage, idea of establishment of rubber processing factory was introduced and expanded to other villages in Mairiang sub-district in order to make them understand and accept this idea. It spent 203 years to create belief and acceptance of members. Later on rubber processing factory was established and produced dry rubber sheet, using administrative technics of making understanding such as talking, meeting and exchanging idea that help Mairiang gardeners proceed their plan stably and continuously.

For practice of resource and environmental management it can help solve some problems in some areas only. But other gardeners in other areas, regions and provinces have the same problems as Mairiang gardeners' ones. So Mairiang gardeners set plan to solve problems in long run that was supported by gardeners in all areas, where gathering of people is ready, rubber fumigated factory can be established. Because of This procedure eleven rubber processing factories in Nakhon Si Tammarat were established. Gardeners also tried to take part in setting plan and making policy of ribber of country, drafting the master plan of Thai rubber

development. This plan later was proposed to government to announce as national plan (but there was no success of this movement).

## **2. The Second Phase (1992 – 2001)**

In this phrase resource and environmental management focused on both flora and tauna resources. It also emphasized on how to solve all problems in Mairiang sub-district. Experiences of Mairiang gardeners were used as the framework to proceed policy of people development. Education policy was also used as equipment, establishing learning center of community to create learning of people. This will lead to solve problems of community and develop community effectively.

Administration of resource and environmental management of Mairiang Community Development and Study Center was under supervision of the committee administrated by leaders council. Forty members selected form five leaders from five villages out of eight villages were responsible for this center and helped survey needs and problems of community. Mairiang community leaders' council was used as villagers' stage to exchange, learn and transfer experiences of learned people, village sages. It was also used as information center to collect problems and needs of villagers and as coordinative organizations with other organizations such as state, private and general organization of network. Besides this people in Mairiang Community Development and Study Center can take part in determination of proper curriculum in accordance with three features of curriculum as below :

1. General curriculum is determined by Department of Non – Formal Education.

2. Compulsory curriculum is provided to people according to their needs to know because at present situation people should learn according to social phenomenon and changing environment.

3. Alternative curriculum is provided to people according to their needs to know. It helps develop villagers who decide to study things by themselves.

Therefore Mairiang Community Development and Study Center used various activities as tools in administration to solve problems of members. This helps members get knowledge and understand the way of how to analyze and solve problems.

The followings are steps of practice in resource and environmental management of Mairiang Community Development and Study Center:

### **1) Adjustment of New Concept**

The committee to Mairiang Community Development and Study Center had meeting to analyze the way and direction of procedure in future. The conclusion of this meeting was that villagers in Mairiang should not only leave their lives on rubber but also on other products. Therefore the adjustment of concept was urgent issue, that is, villagers should not overlook their capacity but should realize their potential in order to change their behavior and concept. In addition they should not hope to get benefit, not give importance on rich and not adhere to materialism as in the past.

### **2) Data Survey**

Mairiang Community Development and Study Center used the stage of Mairiang community leaders' council to learn problems and needs of

community, quantity and quality of resource and potential and capacity of villagers in each village. This leads to learn together in the wide level of community. From the result of learning it was concluded that various data analyzed by Mairiang community leaders' council was not detailed and clear enough, so it was urgent to survey correct data of Mairiang community in order to use this data as data base in setting plan, and solving community's problems correctly. Data was surveyed into two levels : family level and community level (each village was divided). Data in family level shows general data about family such as data of monthly expenditure report and data of total monthly expenditure in year round (January – December). Data in community level shows general data of family, data of income and expenditure, data of public utility, commerce and industry, data of villager's local wisdom and village sages, including data of herbal resource.

### **3) Planning**

From the survey of basic data in the levels of family and community as mentioned above, it was found that each family expended money for food, hospital fees and loans respectively.

Mairiang community leaders' council found that all problems occurred because villagers in Mairiang sub – district were not given development of knowledge, capacity, skills, expertise and experience. If they were encouraged to develop all these fields, they would be able to solve problems. The council proceeded practical method based on survey production (community's basic problems, villagers' needs, resources in community and appropriateness of the area) and added to failure in the past (find out the causes of failure and the way to solve it). The followings are five parts of plan procedure in order to solve problems in long run : Learning, sustainable agriculture, Thai traditional medicine, community industry and community fund. .

### **4) Training Course Preparation**

Mairiang community leaders' council provided training curriculum for members of the council itself and for general agriculturists in Mairiang sub-district to find out the alternative way for themselves in developing main occupation, creating side and supplementary occupations by not leaving their lives and stability of lives on particular occupation (havea brasiliensis). Beside this they can utilize a few plots of land (abound 10–20 rais) to get the utmost benefit for themselves, family and community effectively.

### **5) Establishment of Activity Group (Unit for Practice)**

Mairiang Community Development and Study Center provided training course for forty members of Mairiang community leaders' council selected from eight villages with five members from each. Three times were spent for this course with two subjects were taught. One day was spent for classroom training and one – two days were spent for field trip. This center also provided both theoretical and practical eight courses and activities for general agriculturists for five days. After training villagers were assigned to try to practice in their own areas. Those who passed the practical test would be certified.

This training course encouraged members of Mairiang community leaders' council and general agriculturists in Mairiang sub – district to learn, to

understand the concept of development and to accumulate their experience. After training course eight activities were grouped and organized in villages of Mairiang sub – district (that were suitable to particular areas, readiness of people and kinds of resources) in order to give practical and experience training to the villagers.

#### **6.1.4 Learning Process of Resource and Environmental Management for Self-Reliance of Mairiang Community Development and Study Center**

It has been found that the steps of learning process were changed according to surroundings, period of time, policy and administration. All these factors were adapted to suit to communities' situations. In order to make this topic more clear, the researcher classified the results of the study into two phases: first phase during 1962 – 1991 and second phase during 1991 – 2001 with details of findings as follows:

##### **1. The First Phase (1962 – 1991)**

It was gathering of village leaders to establish Mairiang Agriculturalists' Group. This group was later developed to be Mairiang Gardeners' Group. The process of learning of Mairiang Gardeners' Group can be analyzed in the following steps :

##### **1) Problem Realization**

In 1962 Mairiang sub-district was hit by winstom, then villagers were supported by state to cultivate *havea brasiliensis* as economic plant. So this rubber became main occupation of Mairiang villagers. They used almost plots of land to cultivate this plant. Unfortunately price of this plant was uncertain, changed up and down and depended on world market price and middlemen. Villagers could not know situations of world rubber market, so middlemen controlled rubber price freely. In 1969 rubber price was very low. However villagers had no choice but sold their product without bargaining with middlemen. At this time they were in serious trouble because they had no enough money to spend for living and for their children's education fees. Some of them encountered life crisis, big loan and became bankrupted. This caused their gathering together to solve all problems.

##### **2) Problem Analysis**

After gathering rubber gardeners analyzed the causes of problems and found that problems occurred since they could not fix quality, weight and price of rubber by themselves even if they were producers and sellers. Because of this they had no power to bargain with middlemen or buyers. Therefore villagers gathered and established Mairiang Gardeners' Group in order to reduce and avoid from being taken advantages by middlemen, producing quality and weight rubber that can satisfy market. The practical way to reach goal is to establish rubber processing factory to produce dry rubber sheet, using rubber liquid of villagers. Whenever villagers produced quality dry rubber sheet that was enough for marketing needs, middlemen could not force the price of rubber down. This is to increase bargaining power of rubber price of Mairiang gardeners.

### 3) Determination of Proper Alternative

When villagers agreed to establish rubber processing factory, they set plan, assigned duties, expected problems and analyzed problems in order to find out the proper ways to solve them. They concurred that "If problems of procedure will occur, let them occur at the beginning, not at the last stage of procedure". This was the starting point of administration and management of small rubber processing factory. Villagers guessed that what is the average production power of factory per day that can cover the cost of investment? From this question they calculated clearly the capital and expected benefit and found that factory with production power of 1.5 tons per day can cover the capital. For establishment of this factory one million bath will be spent. In order to collect this amount of money relatives and neighbors were persuaded to invest 20,000 shares with 50 bath valued for each share. Besides this Mairiang Gardeners' Group agreed that solution of problems by establishing the factory was one successful method that could not exist very long. So solution of whole system in the fields of policy, administration and practice was necessary.

### 4) Procedure

In order to give confidence and trust to those who were shareholders and investors village leaders needed to manage efficient administrative system in the form of establishment of legal agriculturalists' group and registered this group called "Mairiang Gardeners' Group" on 1 June 1984.

The capital collected was used to buy machines to try producing quality dry rubber sheet and sold it continuously. In 1987 members paid the whole 100 % share value and expended this amount of money to buy more machines and equipments. In 1994 they got money support to establish a new rubber processing factory and started producing since then.

## 2. The Second Phase (1991 – 2001)

The followings are steps of learning process analyzed by the researcher :

### 1) Problem Realization

After the accomplishment of the procedures of Mairiang Gardeners' Group: establishing processing factory, changing from producer to seller, setting master plan draft of Thai rubber development as policy of hai rubber (It could not be announced as national plan), they concluded that this was a kind of problems solution in short run. If they wanted to solve problems permanently, they needed to solve the causes of problems. And since rubber cultivation was uncertain and unstable occupation, they could not leave their lives on rubber only. From this problems realization they gathered to establish group of Mairiang gardeners and changed to rubber gardeners in 1992 in order to solve all problems in Mairiang sub-district. They changed rubber cultivation into integrated agriculture. They developed main occupation that was parallel with surrounding, created side occupation for stable life and family and had additional occupation in order to get increasing permanent income.

## **2) Problem Analysis**

Forty members of the council of Mairiang community leaders who were selected from eight villagers (five member from each village) talked to each other, discussed and analyzed the problems and found that various data analyzed were not correct, so they agreed that in analyzing data to find out the causes of problems and the ways to solve them, the first thing that should be done was survey of community data, surveying people in community in order to get basic data of community. The result of this survey was analyzed and concluded that development of knowledge, ability, skill and experience should be provided for villagers in five parts : education, sustainable agriculture and environment, community public health, business and industry and community fund. All these five parts of plan were under basic framework of integrated agriculture.

## **3) Determination of Proper Alternative**

Mairiang community leaders, council brought five parts of plan into practice, providing training courses for agriculturalists in order to develop their main, side and additional occupations. There were eight training courses provided: cultivation of non-toxin vegetable, breed of fresh water fish, breed of local chicken, cultivation of mushroom with saw dust, breed of pig, production of feed, rice process and Thai traditional medicine.

## **4) Procedure**

In determining eight training courses the procedure of theoretical and practical training was provided. For theoretical training, Mairiang Community Development and Study Center as a host offered academic knowledge under supervision of working committee appointed by council of Mairiang community leaders. The committee coordinated with learned people, academics and village sages and invited them to be special lecturers. For practical training eight group activities in eight villages were managed in accordance with environment, place, people and resource of each village. In addition council of Mairiang community leaders appointed working groups and divided them into two groups: group of forty leaders and group of general agriculturalists in Mairiang sub-district. For agriculturalists five of them were trained for each batch. If they passed the course, they would be certified by Mairiang Community Development and Study Center. Or if they wanted to keep this career, the center would register them and gave them support in various ways.

By doing this it might said that the center created experience of learning process which was regarded as the model of learning process of plan making by oneself, that is making master plan of community. The present master plan of Mairiang community was the first phase (1997 – 2001) which was the stage of learning process management of community. The second phase of master plan (2002 – 2006) was made with the main aim of community business development in order to meet needs of “Mairiang community Marketing”.

### **6.1.5 Five - Party Organizations Take Part in Resource and Environmental Management for Self-Reliance with Mairiang Community Development and Study Center**

The researcher studied the case of participation of five-party organizations in resource and environmental management and the method of knowledge exchange with Mairiang Community Development and Study Center. For this study the researcher divided a period of time into two: first phase of the establishment of Mairiang Gardeners' Group (1962 – 1991), the second phase of the establishment of Mairiang Community Development and Study Center (1991 - 2001).

#### **1. The First Phase (1962 – 1991)**

The purpose of establishment of Mairiang Gardeners' Group was to solve the problems of low price of rubber and of price that forced down by middlemen. So in this first phase resource and environmental management focused on rubber only. Only three organizations took part in rubber resource management with Mairiang Gardeners' Group: government organization, business organization and Community organization. Government organization coordinated and cooperated with Mairiang Gardeners' group and gave helps in various ways such as knowledge, ideas and suggestions before and after establishment of dry rubbers processing factory. Business organization educated Mairiang gardens and invited them to visit producing process and helped them in finding the market for their rubber before they could find the market by themselves. Community organization also paid important role and took part in rubber resource management with Mairiang gardeners' Group, creating consciousness of learning to villagers in other communities. By doing this various community organizations took a study trip, got trained and exchanged experiences with Mairiang Gardeners' Group.

#### **2. The Second Phase (1992 - 2001)**

In this stage "Mairiang Gardeners' Group" became "Mairiang Community Development and Study Center" with the main aim of people development to be able to help themselves. Education was used as a tool to develop learning, establishing community learning center. This would lead to solve problems and develop local community effectively. Several organizations took part and helped Mairiang Community Development and Study Center in resource and environmental management for self-reliance such as Department of Non-Formal Education, Department of Environmental Quality Promotion, Department of Agriculture, Project of Social Fund, National Institute of Thai local Wisdom and Thai Studies and Research Institute of Public Health etc, giving support to Mairiang Community Development and Study Center in various ways such as providing training course, organizing seminar, study trip, promoting additional occupation, establishing learning center and giving the whole or some of budget.

Non-Government organization was another organization that took part in resource and environmental management with Mairiang Community Development and Study Center because this organization was interested and found potential of community leaders and village organizations in developing quality of life of people in community, supporting in various ways such as providing training course, organizing

the stage of view exchange between community and idea leaders, taking villagers to join seminar and training course in different places. This organization also coordinated with other organizations or institutions and general communities.

The organizations between business organization and Mairiang Community Development and Study Center in resource and environmental management for self-reliance was not quite clear. This might be because the center was established in order to develop people in Mairiang community only. In addition the framework of this center was to educate people for the purpose of self-reliance, not for business management with other business organizations (However for the master plan of community in the second phase (2002 - 2006) , business organization will join hands with the center and take part in resource and environmental management).

Rajamangala Institute of Technology is the academic organization that took part and paid an important role in resource and environmental management for self-reliance with the center. This institute gave organizations and helps the center in various ways such as education training, budgetary support and others (Eight activities in the first phase of master plan of Mairiang community during 1997 – 2001 were organized by this institute. The institute also assigned the academics to train the agriculturalists in Mairiang community and sometimes they were invited to join training camp at the institute). Besides this, the center created organizations with the institute in management of local course in graduate level. It is now in the step of procedure. In addition the scholars from other institutes were interested in the activities of the center. Because of this various activities were clear and concrete that caused the quantity of participants and strength of community organization. The center became well-known. A lot of scholars, researchers and post-graduate students studied Mairiang community in various fields such as experience, gathering, leadership, rubber business administration, local wisdom, community business and others.

Community organization are another organizations that paid an important role and took part in resource and environmental management for self-reliance with Mairiang Community Development and Study Center, taking study tour in various fields: establishment of rubber processing factory, administration of this factory, making a master plan for self-reliance of community and group activities etc. These community organizations are from the southern and other parts of Thailand. However networks of Nakhon Si Thammarat rubber and Yamuna have close relationship and great organizations with Mairiang Community Development and Study Center in resource and environmental management.

From the study of five-party organizations that took part in resource and environmental management for self-reliance with Mairiang Community Development and Study Center, the results of the study have been found that the five-party organizations helped, supported, cooperated and coordinated with the center, by exchanging learning in management of resource and environment for self-reliance with the center. Regular meeting, study trip, training, seminar and creation of consciousness were also made in order to exchange and learn in resource and

environmental management for self-reliance of Mairiang Community Development and Study Center.

## **6.2 Recommendations**

### **6.2.1 Implication for Policy Purpose**

1) Clear policy on rubber resource management, vision, strategy, goal and procedure should be made. Also administrative and management system, plan and budget should be clear enough.

2) Policy, rules, regulations, budget and long term practical plan should be integrated in order to cause potential of procedure. Ministry of Agriculture and Cooperative and Ministry of Science, Technology and Environment are the first state sections to carry on this procedure and cooperate with other ministries in future.

3) Participation of Mairiang Community Development and Study Center with government organization and other organization in the forms of thinking, analysis, decision making, plan, practice and follow-up should be supported.

### **6.2.2 Implication for Practice Purpose**

1) Government Organization should proceed all activities sincerely and seriously, emphasizing on personal preparation, that is, government officials preparation. Coordination with the relevant sectors should also be made because some government officials do not understand and lack consciousness of participations in resource and environmental management. They just fulfill their duties according to works assigned.

2) Knowledge and understanding the goals and working process of Mairiang Community Development and Study Center should be provided to all villages in Mairiang sub-district in order to create potential of villagers to participate in Mairiang community development.

3) Coordination to understand roles and duties between Mairiang Community Development and Study Center and Mairiang sub-district administrative organization should be made so that they avoid an overlap of works and join hands to work together.

4) Learning should be supported through field trip, training at different places that are involved with technology, production, management and marketing in order to accept the concept of community business in the second phase of community master plan.

### **6.2.3 Implication for Academic Purpose**

1) Participation practical research in the case of participation and roles of learning networks in resource and environmental management should be studied in the levels of community, sub-district, district and province respectively.

2) Studying the action research on learning network for resource and environmental management for self-reliance and improve the network implementation strategy for sustainability.

3) The implementation of community organization had supported the learning network in order to search the methodology to create the collaboration between networks and different community organizations.

4) Collecting the body of knowledge on resource and environmental management for self-reliance in different regions order to synthesize to be local wisdom of regions.



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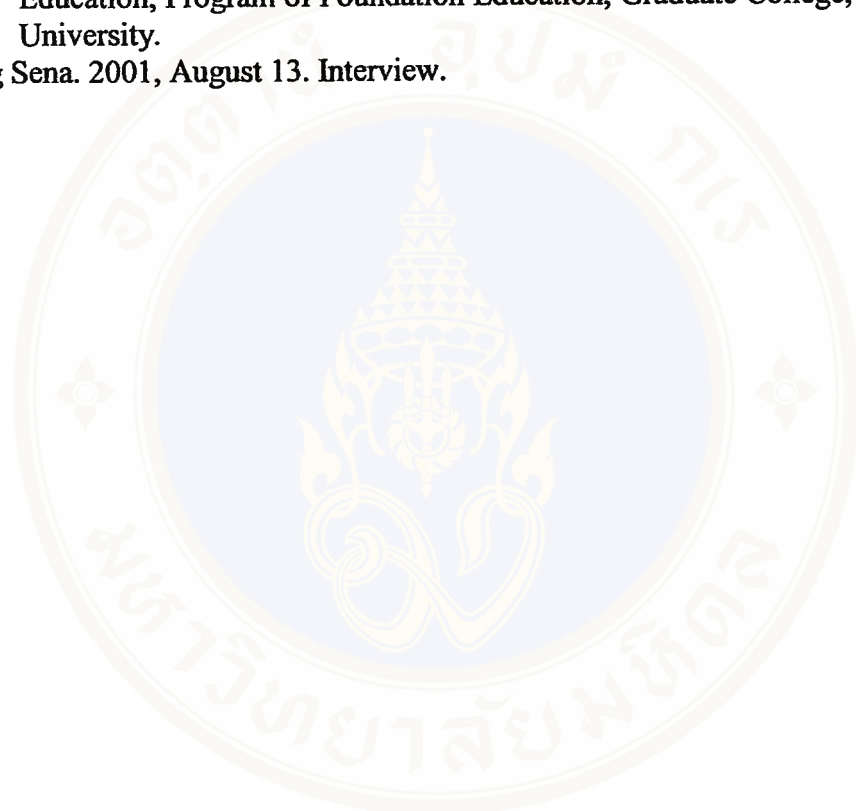
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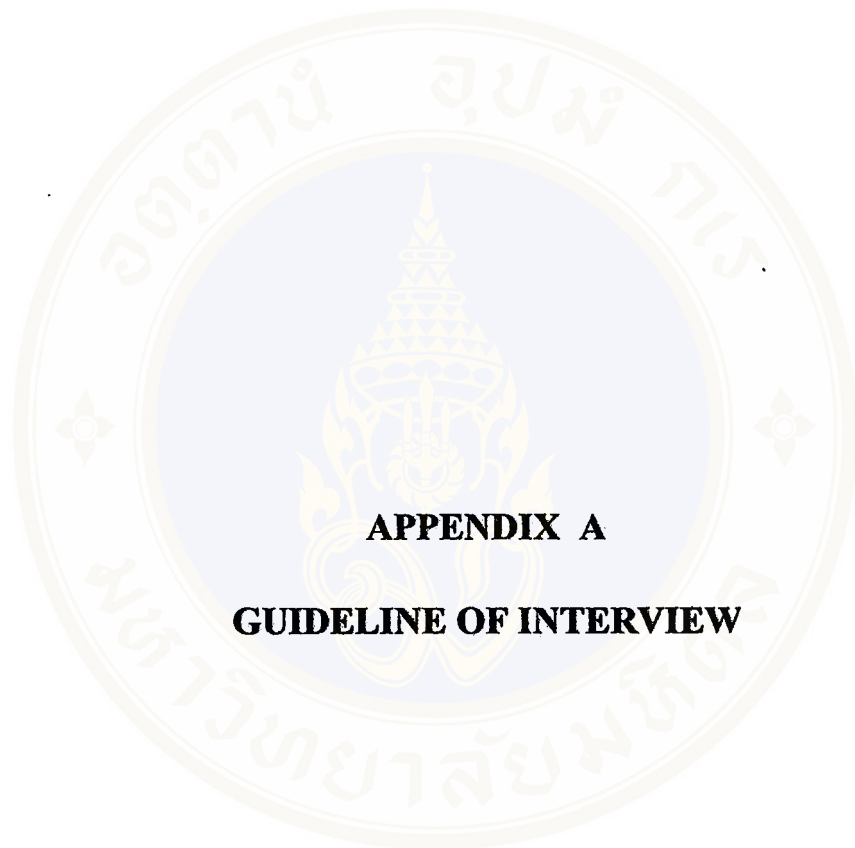
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**APPENDIX A**

**GUIDELINE OF INTERVIEW**

## **Guideline of interview**

### **1. The context of community where is location of Mairiang Community Development and Study Center**

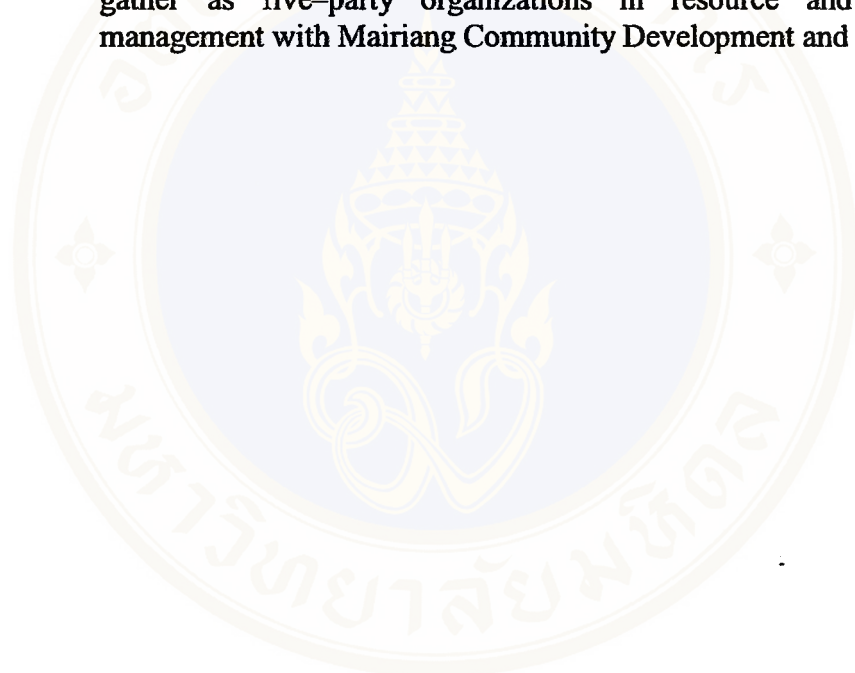
- History and general conditions of community
- Economy, society, culture and population of community
- Resource and environment in community
- Economic, social, cultural and population changes of community
- Problems and the ways to solve them
- Kinds of organizations that help develop community
- Procedures of activities and projects of these organizations

### **2. Mairiang Community Development and Study Center**

- History of the establishment of Mairiang Community Development and Study Center
- Issues / Problems as starting points of Mairiang Community Development and Study Center
- Development of Mairiang Community Development and Study Center from past to present
- Factors that affect the occurrence of Mairiang Community Development and Study Center
- Philosophy / concept / policy / aims / purposes of Mairiang Community Development and Study Center
- Structure, administration, procedure, committee, roles and duties of Mairiang Community Development and Study Center
- Factors that make procedure of organizations of learning networks succeed
- Problems and obstacles in the procedure of Mairiang Community Development and Study Center
- The way to prevent and solve problems and obstacles happened at present Mairiang Community Development and Study Center
- Features of management of resource and environmental in the policy of Mairiang Community Development and Study Center
- Features of management of resource and environmental in administration of Mairiang Community Development and Study Center
- Features of management of resource and environment in practice (activities or projects) of Mairiang Community Development and Study Center
- Forms of procedure of resource and environmental management of Mairiang Community Development and Study Center
- Aims and purposes of procedure of resource and environmental management of Mairiang Community Development and Study Center
- Details of each step of activities in resource and environmental management of Mairiang Community Development and Study Center

**3. Five-party organizations that take part in resource and environmental management for self-reliance with Mairiang Community Development and Study Center**

- Kinds of organizations or other sectors that gather as five-party organizations in resource and environmental management with Mairiang Community Development and Study Center
- Characteristics of procedure of organizations or other sectors that gather as five-party organizations in resource and environmental management with Mairiang Community Development and Study Center
- Methods of learning exchange of organizations or other sectors that gather as five-party organizations in resource and environment management with Mairiang Community Development and Study Center





**APPENDIX B**

**SAMPLE GROUP OF RESEARCH**

## SAMPLE GROUP OF RESEARCH

### 1. Mairiang Community Development and Study Center

1) Mr. Prayong Ronnarong	president of the center
2) Mr. Uthai Torrarit	committee of the center
3) Mr. Arom Ratpiboon	committee of the center
4) Mr. Kajorn Tiphaphong	committee of the center
5) Mrs. Piengpen Srithammasit	committee of the center
6) Mrs. Watcharaphorn Mairiang	committee of the center
7) Mr. Suwat Maneenas	committee of the center
8) Mr. Sangad Thepakson	member of the council
9) Mr. Sahat Lertkrai	member of the council
10) Mr. Rattana Taworn	member of the council
11) Mr. Somkuan Thipsuwan	member of the council
12) Mr. Prayoon Ronnarong	member of the council
13) Mr. Somchok Plaikaew	member of the council
14) Mr. Nongrak Buadam	member of the council
15) Mr. Kriangsak Chuchart	member of the council
16) Mr. Charoon Ubon	member of the council
17) Mrs. Suchin Jamjaras	member of the council
18) Mr. Siri Cheewa	member of the council
19) Mrs. Samruam Taworn	member of the council
20) Mr. Seri Sirirat	member of the council
21) Mr. Somkid Buasakad	member of the council
22) Mr. Chumnun Suksaeng	member of the council
23) Mr. Sittiporn Tawai	member of the center
24) Mr. Somsak Tunksuk	member of the center
25) Mrs. Chamrus Tiphaphong	member of the center
26) Mr. Pon Ruksayot	member of the center
27) Mrs. Lamai Chitkarm	member of the center
28) Mr. Prapat Suphan	member of the center
29) Mr. Thamarat Jina	member of the center
30) Mr. Somsak Maliwan	member of the center

### 2. Mairiang Community

1) Mr. Boonlert	Tunkmanee	mayor
2) Mrs. Surangrat	Chaichana	sub-district administration organization chief
3) Mr. Somporn	Sanupong	village chief
4) Mr. Komol	Ruksonkmuen	sub-village chief (number 1)
5) Mr. Chanin	Tanakarn	sub-village chief (number 4)
6) Mr. Wipot	Sunpetch	sub-village chief (number 5)
7) Mr. Pradit	Koontong	sub-village chief (number 6)
8) Mr. Sompong	Laau	sub-village chief (number 7)

9)	Mr. Sayan	Thipsuwan	sub-village chief (number 9)
10)	Mr. Tawee	Phommontri	sub-village chief (number 10)
11)	Mr. Chaisri	Mepat	lord mayor
12)	Mr. Chalernsak	Boonnum	assistant of lord mayor
13)	Mr. Chawarit	Nauwanat	sub-district administration organization committee president
14)	Mr. Haong	Silathep	the older person in community
15)	Mr. Tuan	Meesai	the older person in community
16)	Mr. Wong	Sena	the older person in community
17)	Mrs. Pannee	Kuamungkorn	the older person in community
18)	Mr. Somnuok	Mairiang	the older person in community

### **3. Five-Party Organizations Take Part in Resource and Environmental Management for Self-Reliance with Mairiang Community Development and Study Center**

#### **3.1 Government Organizations**

1)	Mr. Mora	Charoensilpa	agricultural province unit chief
2)	Mr. Suwit	Puewnuan	development district unit chief
3)	Mr. Amorn	Intawichian	public health district unit chief
4)	Mr. Suwet	Petchara	agricultural district unit chief
5)	Mr. Wirot	Panuruk	non-formal education of director
6)	Mr. Teerapong	Bunnarat	development sub- district unit chief
7)	Mr. Cholrat	Sittisomboon	agricultural sub- district unit person
8)	Mrs. Arunee	Senathipbodi	Ban Tam Por health unit chief
9)	Mr. Wattcharachai	Carl	Ban Tam Por health unit person
10)	Mrs. Patraporn	Jina	Ban Tam Por health unity person
11)	Mr. Niphon	Rattanakot	Ban Nong Thom health unit chief

#### **3.2 Non-Government Organizations**

1)	Mr. Songsak	Songsuarn	Thai development fundation
2)	Mr. Wichit	Nantasuwan	village fundation
3)	Mr. Somyot	Ruksawong	Yommana Networks
4)	Mr. Sawang	Juinoi	Yommana Networks
5)	Mr. Wirat	Trichot	Yommana Networks

#### **3.3 Business Organizaitons**

1)	Mr. Suksit	Sritanasarn	Agricultural Information Transfer Center
2)	Mr. Wirot	Kongpanya	Food Product Network Company

### 3.4 Academic Organizations

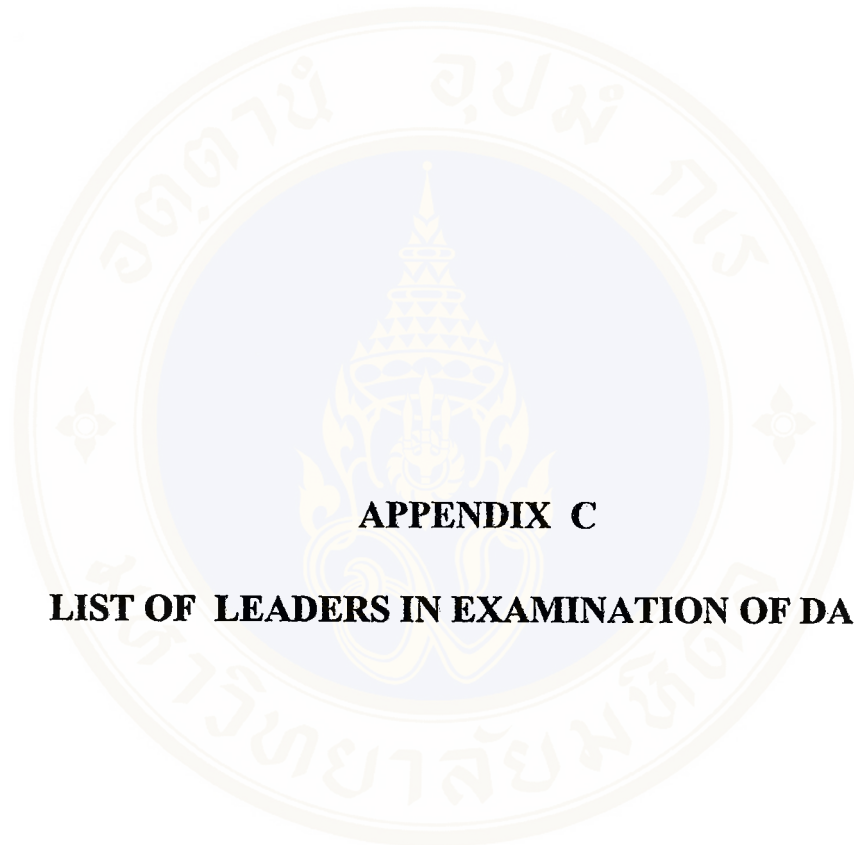
- |                 |              |                                      |
|-----------------|--------------|--------------------------------------|
| 1) Dr. Aumara   | Wiangweera   | Development and Research Station     |
| 2) Mr. Narong   | Boonsuaikwan | Walailuck University                 |
| 3) Mr. Songchit | Poonlap      | Pranakorn Institue Rajabhat          |
| 4) Mr. Panya    | Lertkrai     | Nakornsrihammarat Insititue Rajabhat |

### 3.5 Community Organizations

- |                 |           |   |
|-----------------|-----------|---|
| 1) Mr. Weera    | Srimit    | Ban Pabon Tum Community, Pattalung            |
| 2) Mr. Sawang   | Supsin    | Amphur Tepa Community, Songkhla               |
| 3) Mr. Buadin   | Ruksasorn | Koh Saba Community, Songkhla                  |
| 4) Mrs. Nittaya | Suksiri   | Nong Yai Community, Lopburi                   |
| 5) Mr. Chuchart | Cherttai  | Amphur Chaaurd Community, Nakorm Srithammarat |

### 4. People who Live in Mairiang Community

- |                  |              |
|------------------|--------------|
| 1) Mrs. Silla    | Sanupong     |
| 2) Mr. Wichian   | Chaicharn    |
| 3) Mr. Sophon    | Duangchan    |
| 4) Mr. Prasert   | Khunchit     |
| 5) Mrs. Arporn   | Heedgaow     |
| 6) Mr. Yoawaluck | Kaewarun     |
| 7) Mrs. Amornsri | Sudket       |
| 8) Mr. Boonyot   | Chaisongkram |



**APPENDIX C**

**LIST OF LEADERS IN EXAMINATION OF DATA**

**LIST OF LEADERS IN EXAMINATION OF DATA**

- 1) Mr. Prayong Ronnarong                      president of Mairiang Community Development and Study Center
- 2) Mr. Kajorn Tiphaphong                      member of Mairiang Community Development and Study Center
- 3) Mr. Sahat Lertkrai                              member of Mairiang Community Development and Study Center
- 4) Mr. Suwat maneenas                          member of Mairiang Community Development and Study Center
- 5) Mr. Arom Ratpiboon                          member of Mairiang Community Development and Study Center
- 6) Mrs. Piengphen Srithammasit              member of Mairiang Community Development and Study Center
- 7) Mr. Somkid Buasakad                        chief of activity group
- 8) Mrs. Suchin Jamjaras                        chief of activity group
- 9) Mr. Siri Cheewa                                chief of activity group
- 10) Mr. Rattana Tawon                            chief of activity group
- 11) Mr. Charoon Ubon                            chief of activity group
- 12) Mr. Seri Sirirat                                chief of activity group
- 13) Mr. Sangad Thepakson                      chief of activity group

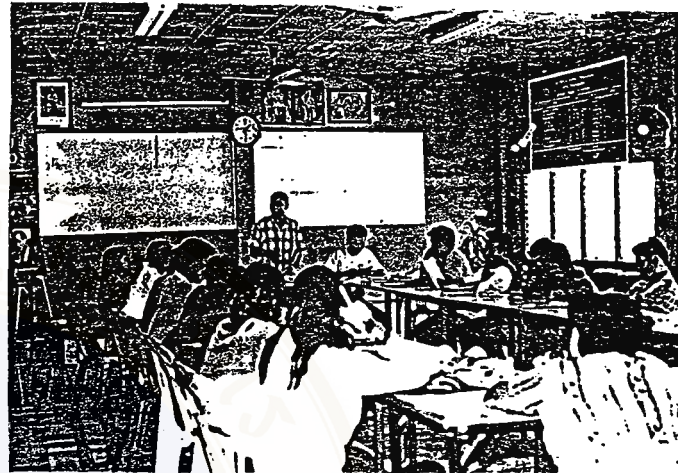


**APPENDIX D**

**PICTURES OF RESEARCH**



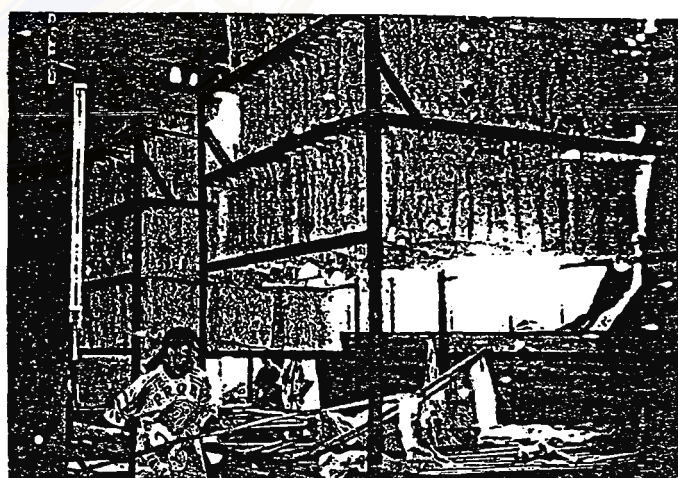
Mairiang community development and study center



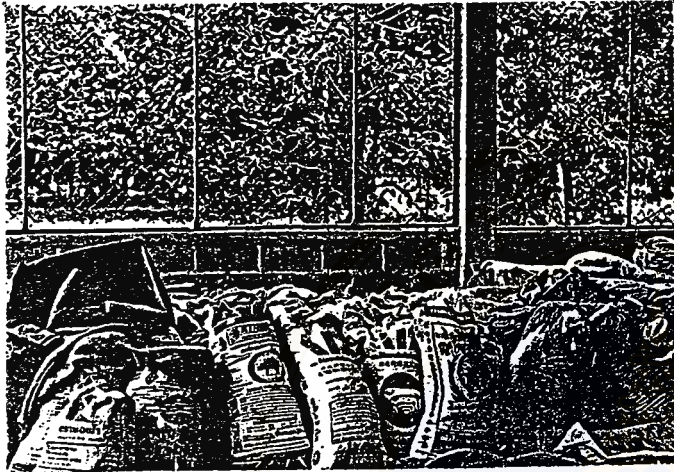
Mairiang community leaders council



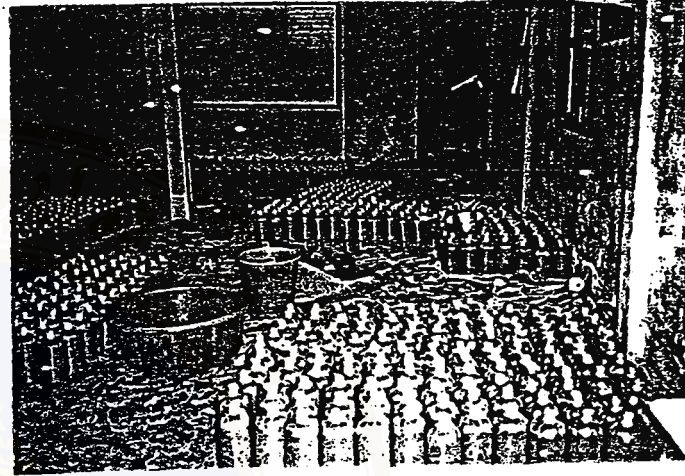
Visiting of other community



Rubber product



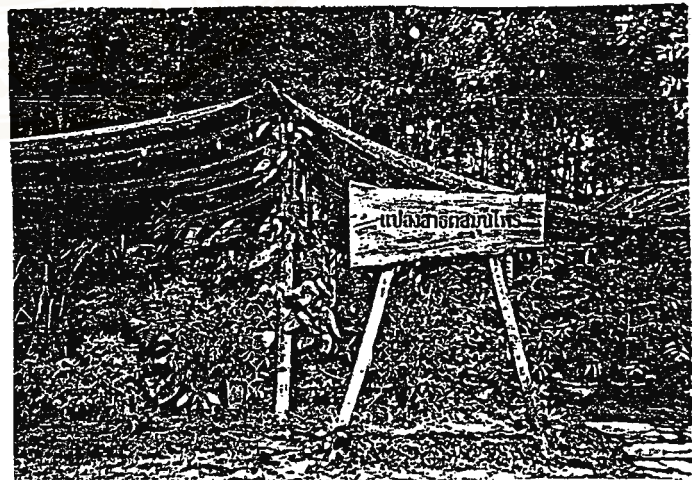
Rice product



Mushrom cultivation with rubber sawdust



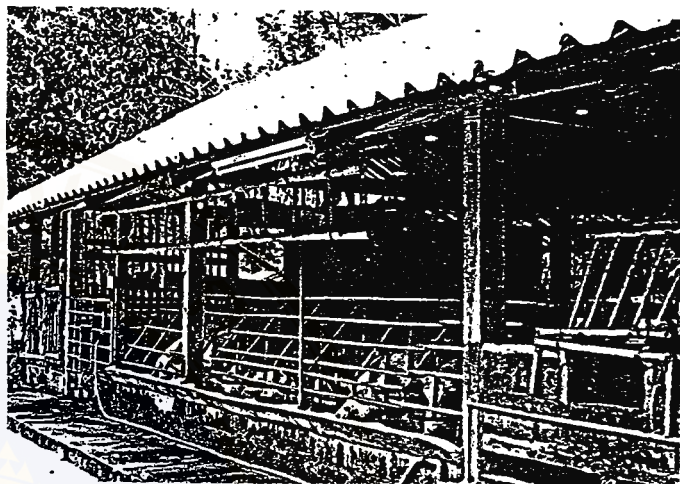
Non-toxic vegetable and fruit



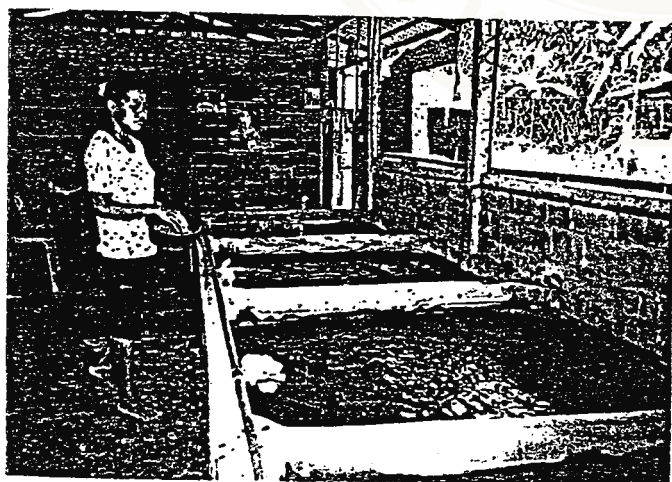
Traditional thai medical



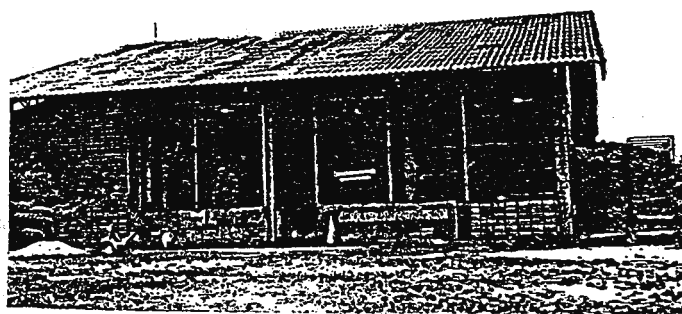
**Traditional chicken cultivation**



**Swine rearing**



**Freshwater fish**



**Animal food product**

## BIOGRAPHY



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