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**GRAPHIC-BASED PARTICIPATORY METHODOLOGY FOR
COMMUNITY DEVELOPMENT**

KITJAKAAN CHUAYCHUWONG

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Thesis
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**GRAPHIC-BASED PARTICIPATORY METHODOLOGY FOR
COMMUNITY DEVELOPMENT**

Kitjakaan Chuaychuwong
.....
Kitjakaan Chuaychuwong
Candidate

T. Boonchote
.....
Asst. Dr. Thawatchai Boonchote, Ph.D.
Major-advisor

I. Baker
.....
Lect. Ilias Baker, M.PHIL.
Co-advisor

Arayan Trangarn
.....
Dr. Arayan Trangarn, Ph.D.
Co-advisor

Maneewan Pewnim
.....
Asst. Dr. Maneewan Pewnim, Ph.D.
Co-advisor

Liangchai Limlomwongse
.....
Prof. Liangchai Limlomwongse,
Ph.D.
Dean
Faculty of Graduate Studies

Yunyong Ampawa
.....
Lect. Yunyong Ampawa, M.S.
Chairman
Master of Arts,
Environmental Social Sciences
Faculty of Social Sciences and Humanities,

Thesis
entitled

**GRAPHIC-BASED PARTICIPATORY METHODOLOGY FOR
COMMUNITY DEVELOPMENT**

was submitted to the Faculty of Graduate Studies, Mahidol University for
the degree of Master of Arts, Environmental Social Sciences

on
16 August, 2000

Kitjakaan Chuaychuwong
.....
Kitjakaan Chuaychuwong
Candidate

T. Boonchote
.....
Asst. Prof. Dr. Thawatchai Boonchote, Ph.D.
Chairman

I. Baker
.....
Lect. Ijas Baker, M.PHIL.
Member

Arayan Trangarn
.....
Dr. Arayan Trangarn, Ph.D.
Member

Maneewan Pewnim
.....
Asst. Prof. Dr. Maneewan Pewnim, Ph.D.
Member

Liangchai Limlomwongse
.....
Prof. Liangchai Limlomwongse,
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Suree Kanjanawong
.....
Assoc. Prof. Suree Kanjanawong,
Ph.D.
Dean
Faculty of Social Sciences and Humanities
Mahidol University

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The main objective of this action research was to assess two tools that facilitate participatory community development in a Thai rural context.

The study was done in a village on the border of Huay Kha Khaeng Wildlife Sanctuary. There were 80 families living in the community with a total population of about 500. The research was a case study. It was conducted within 1999. The researcher applied Mind Map for one-on-one interviews with villagers and introduced Six Hats Thinking method to the same villagers for community meetings.

The findings from the study indicate that the application of Mind Map to reinforce the effectiveness of interviews facilitated clear communication and promoted a positive interpersonal atmosphere significantly. Part of the reason for the success of the tool was that it made the interviews less serious and more fun, a positive value in Thai society even when work is being done.

It is recommended that government officials and NGO development agencies receive training in visual communication tools like mind mapping.

The application of Six Hats Thinking was a failure due to the social and cultural context of the community at the time of the study - the community had recently been traumatized by a major scam involving both outsiders and community members and were unreceptive to the idea of community meetings. The community also expressed a strong belief that community development was primarily the responsibility of the government and that role of the villagers was more or less limited to carrying out government initiated projects. Their own efforts to initiate community changes appeared to arise only in response to a perceived crisis. A further factor to account for the failure of this tool was that villagers seemed to find the idea of separating thoughts from emotions (a crucial function of the tool) to be quite alien. Lastly, the failure might be attributed to the fact that the researcher had no authority to persuade the villagers to initiate discussions about community development.

Most of these factors should be considered where any intervention is planned by a careful selection of the village, by more in-depth preparation of the community, and by putting authoritative figures in the role of development facilitator. Both tools could be effective alternatives to enhance people's participation in community development and environmental management, especially if used by government officials who have direct contact with rural communities.

3837100 SHEV/M : สาขาวิชา : สิ่งแวดล้อม ; ศศ.ม. (สิ่งแวดล้อม)

กิจการ ช่วยชูวงศ์ : กระบวนการพัฒนาชุมชนด้วยความร่วมมือของสมาชิกชุมชน โดยใช้การวาดภาพช่วย (GRAPHIC-BASED PARTICIPATORY METHODOLOGY FOR COMMUNITY DEVELOPMENT). คณะกรรมการควบคุมวิทยานิพนธ์ : ธวัชชัย บุญโชติ, Ph.D., Iljas Baker, M.PHIL., อารยัน ตระหง่าน, Ph.D., มณีวรรณ ผิวนิ่ม, Ph. D. 145 หน้า. ISBN 974-664-854-3

งานวิจัยเชิงปฏิบัติการขั้นนี้ ดำเนินการเพื่อทดสอบประสิทธิภาพของกระบวนการที่สามารถนำมาใช้ในการพัฒนาชุมชนโดยสมาชิกชุมชนเป็นหลัก. ผู้วิจัยนำกระบวนการทั้งสองไปใช้ในบริบทวัฒนธรรมไทย.

การวิจัยดำเนินการในหมู่บ้านซึ่งตั้งอยู่ติดเขตรักษาพันธุ์สัตว์ป่าห้วยขาแข้ง ซึ่งมีประชากรอยู่อาศัยราว 80 ครอบครัว มีสมาชิกในชุมชนรวมประมาณ 500 คน. การวิจัยเป็นแบบ กรณีศึกษา ดำเนินการในปี 2542. ผู้วิจัยได้ใช้การทำแผนที่ความคิด (Mind Map) เพื่อเพิ่มประสิทธิภาพของการสัมภาษณ์ประชาชนในชุมชน และได้เสนอวิธีประชุมที่ใช้กระบวนการ หมวก 6 ใบ คิด 6 แบบ (Six Hats Thinking) ให้สมาชิกชุมชนเดียวกันนี้ เพื่อใช้ร่วมกันวางแผนพัฒนาชุมชน.

ผลการวิจัยแสดงให้เห็นศักยภาพของการใช้แผนที่ความคิด และการวาดภาพประกอบการสัมภาษณ์ ซึ่งช่วยให้การบันทึกข้อมูลมีประสิทธิภาพ เกิดการสื่อสารสองทางระหว่างผู้สัมภาษณ์และผู้ให้สัมภาษณ์มากขึ้น และบรรยากาศการสนทนาผ่อนคลายอย่างเห็นได้ชัด. รัฐและองค์กรพัฒนาควรนำเทคนิคการใช้ภาพ เช่น แผนที่ความคิด มาเป็นสื่อในการดำเนินกิจกรรมกลุ่ม โดยเริ่มจากการอบรมบุคลากรให้สามารถใช้เทคนิคลักษณะนี้ให้ได้อย่างมีประสิทธิภาพ.

การใช้กระบวนการ หมวก 6 ใบ คิด 6 แบบในชุมชนมีข้อจำกัดจากหลายปัจจัย. ประการหนึ่ง คือสถานการณ์ในชุมชน และวัฒนธรรมการรวมกลุ่มของสมาชิกชุมชน. ในระหว่างการวิจัย ชุมชนถูกแทรกแซงโดยกลุ่มคนนอกชุมชน ทำให้มีทัศนคติเชิงลบต่อการประชุมหมู่บ้าน. นอกจากนี้สมาชิกของชุมชนส่วนใหญ่เห็นว่าพัฒนาเป็นหน้าที่รับผิดชอบของภาครัฐ. การรวมตัวพัฒนาชุมชนโดยชุมชนเองมีขึ้นเฉพาะเมื่อเกิดภาวะวิกฤติเท่านั้น. ข้อจำกัดอีกประการหนึ่งที่ทำให้กระบวนการดังกล่าวไม่ประสบผลสำเร็จ คือแนวคิดที่ให้ผู้ร่วมประชุมแยกความคิดออกจากความรู้สึก ซึ่งเป็นส่วนสำคัญในกระบวนการใช้ หมวก 6 ใบ คิด 6 แบบ. สมาชิกชุมชนเห็นว่าการแยกความคิดเป็นสิ่งที่ผิดธรรมชาติ. ประการสุดท้ายที่เป็นข้อจำกัดในการวิจัยคือการศึกษาที่ไม่มีบทบาททางสังคมที่จะสามารถเรียกประชุมสมาชิกชุมชนให้เข้าร่วมเริ่มปรึกษา และดำเนินกิจกรรมพัฒนาชุมชนได้.

ปัจจัยที่จำกัดการร่วมมือในการพัฒนา ดังกล่าวข้างต้น สามารถขจัดได้โดยการคัดเลือกชุมชนที่จะเข้าดำเนินการอย่างรัดกุม และควรมีกิจกรรมสำหรับเตรียมความพร้อมของชุมชน. การดำเนินการดังกล่าวควรมีบุคคลที่มีอำนาจหน้าที่รับผิดชอบเข้ามาเป็นผู้ส่งเสริมกระบวนการพัฒนาโดยชุมชนเพื่อชุมชน.

เครื่องมือทั้งสองเป็นกระบวนการที่นักพัฒนา โดยเฉพาะอย่างยิ่งเจ้าหน้าที่ของรัฐ สามารถเลือกนำไปใช้ในการแสวงหาความร่วมมือกับชุมชน เพื่อพัฒนาชุมชนไปพร้อมๆ กับการจัดการสิ่งแวดล้อม และอนุรักษ์ทรัพยากรธรรมชาติ.

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CHAPTER I

INTRODUCTION

Industrial, commercial, and agricultural communities have grown up hand in hand with the exploitation of natural resources. People's ways of life in such communities disturb or even ruin ecological systems as they based on the manipulation of natural resources for short-term benefits.

Chemical agriculture, land clearing, wastewater from communities, noise, and other manmade disturbances may have serious adverse effects on the surrounding fragile biosphere. Wilderness areas with a rich diversity of biotic life are particularly at risk and are often targeted by ruthless exploiters of natural resources.

Governmental organizations have significant efforts and devoted substantial budgets to protect natural resources, often unsuccessfully. Nowadays such top-down approaches are considered inappropriate. People's participation in sustainable development seems to be more a promising approach, one which combines environmental management with community development. It appears intuitively obvious that people will take care of their own resources, once they realize that unsustainable exploitation will put their own and their children's livelihoods at risk.

Graphic-based Participatory Methodology for Community Development, the subject of this thesis, is designed to be a part of the collaborative effort of making development a positive process for both the human beings and their natural environment.

The two tools proposed in this study were tested for their potential to facilitate people's cooperation in the development of their own community.

This study was conducted in a small community on the border of Huay Kha Khaeng Wildlife Sanctuary, a biologically rich forest complex in the Western of Thailand.

If people's cooperation is established, the preserved forest will have more guardians. Thus, it appears to be worth trying to introduce to the community two tools for more effective collaborative community planning and development. Such tools could be applied by Sanctuary officials to facilitate the development of communities on the periphery of the Sanctuary in ways that do not threaten the sanctuary's bio diversity. The tools can be used to facilitate both community development and some degree of participation in the management of the Sanctuary.

At this very moment, natural resources in Thailand protected areas are being exploited. Most resources in danger are those that can provide short-term benefits such as foods, fuel wood, and timber and game sold in urban areas. This phenomenon is presented in an allegory by His Majesty the King.

In the year 1977 His Majesty the King once listened to a sermon by the Reverend Somdej Pra Mahaviravongs (Vin Dhamasaro) of Wat Rajapatikaram about King Mahajanaka's visit to the Royal Park in the city of Mithila. The story had it that, at the entry of the park, there were standing two mango trees, one bearing fruit and the other barren. The king tasted the delicious mango fruit then entered the park. When he returned, he saw the mango tree with tasty fruits had been vandalized and felled; as for the other tree, it was still proudly standing. The story demonstrated that good things of good quality will be the target of greed and will stand in danger.

(His Majesty King Bhumibol Adulyadej, *The Story of Mahajanaka*, 1997: 9)

Taking the mango trees as Thailand's natural resources, the forest and other valuable natural assets related to it, we can imagine actions that "vandalize" these large areas with a thick growth of trees and rich biological diversity. Timber business, use of chemical substances in agriculture, the adverse effects of tourism, and other human endeavors directly and indirectly ruin the pool of bio-diversity if there is no effective management involved. The illustration in *The Story of Mahajanaka* reminds us of natural resource degradation.

The picture of the trees cut down for fruits indicates that people are a major cause of natural resource disasters. We consume too much. As a result, in order to improve the quality of the natural environment, we should reduce consumption and act more wisely.

This introduction section proposes a set of inter-connected issues that gave birth to the research. The intention is to assess the effectiveness of two graphic-based participatory methodologies in involving local people in efforts to make their livelihood congruent with the surrounding ecosystem.

There are five topics included in this section

- I. Environmental Problems in Thailand
- II. The Causes of Environmental Problems
- III. The Appropriate Livelihood That Promotes Interrelationship between Humans and the Environment
- IV. The Sustainable Solution to Reach the Expected Interrelationship
- V. About this Research

I. Natural Resources Degradation in Thailand, The Problem

Natural resources, especially forest, provide us with healthy food, clean air and even good medication. But the increasing population and destructive lifestyles, especially consumerism, are making unsustainable demands on natural resources.

This section presents a comprehensive picture of environmental problems in Thailand as an overview.

The United Nation Resident Coordinator System, Thailand, presented the UN Common Country Assessment, Thailand, 1997-1998 stating that,

In Thailand the rapid development of the last two decades has brought a whole series of environment-related issues as pollution in urban areas, destruction of natural resources and natural hazards have come to affect the quality of life of the majority of the inhabitants and threaten the very path of development itself.

(The United Nation Resident Coordinator System, Thailand. Chapter 7: The Environment, 1999. [Online])

There are many actions covered by the word “*development*”. Industries have been developed on different types of land such as seashores, mountainous areas, or even close to residential areas. Automobiles, mass transportation, water reservoirs, tourist resorts, public and private marketplaces, for example, are signs of development. The building and operation of these activities create a variety of environmental problems.

Some residential, commercial, and industrial processes are managed effectively while some activities are not. Contaminated wastewater may spread destructive effects into the surrounding ecosystem. Water pollution is only one of many harmful activities that result in ecosystem degradation.

Other causes of natural resource degradation are noises, gases, heavy traffic, and other industrial related activities. These all destroy or severely diminish the quality of our natural environment.

Besides industrial development much land is turned into agricultural estates for people’s profit. Some farmers live on natural agriculture while some practise more modernized farming especially mono-cropping. They grow cash crops, which demand the use of insecticide, herbicide, and chemical fertilizer. These chemicals can destroy lives if misused. People illegally encroach on public land to plant crops to earn their livelihood and this often ruins the dynamic balance in the ecosystem.

Even daily activities among members of our communities such as cleansing, garbage disposal, or even having meals make some outputs, which negatively impact our ecosystem. Wastewater, solid waste, product packaging, smoke from vehicles, and etc. together may seriously adversely impact our own society. Especially when no environmental friendly cultural values have taken root in communities.

Environmental problems eventually create negative effects on the quality of life of people. Health problems from air pollution are clearly observed while social conflicts between villagers and government is a more complicated matter. Social problems arise from a mixture of different factors, which inevitably are related to environmental problems, for instance, poor soil or an insufficient and ineffective irrigational system. The complexity of natural resource degradation intertwined with social problems requires a thorough consideration and people's participation in order to determine appropriate solutions for sustainable and positive development.

The community that is the subject of this study is an example of interrelated problems revolving around the conflict between the community's need to exploit natural resources and the effort of environmental protection. Villagers want to live in the community to make use of the land with sufficient water supply provided by the forest. At the same time, government officials want to expand the buffer zone on the boundary of the wild life sanctuary. They are working on the same piece of land.

Only a mountain separates the village in the study from the protected area. Government officials have noted that agricultural activities may disturb the biologically sensitive area of Huay Kha Khaeng Wildlife Sanctuary. Officials came and told villagers that they might be resettled to ensure the protection of the natural resources in the Sanctuary. Inevitably there were conflicting objectives. The local government officials struggle to protect the wildlife and other natural resources while the villagers struggle to earn a secure livelihood.

Clearly one way to resolve this conflict would be for the two groups to attempt to cooperate in achieving both objectives.

The community of this study is both ecologically and socially sensitive. The young community is not a well-established strong community with firm relationships among community members. At the same time the rim of the village is connected to the wildlife sanctuary, which is the meeting place of people, wild animals and plants. It is important to take these factors into account, that is, to understand the dynamic nature of the social and ecological systems in order to find an appropriate solution for the community and government officials in this context.

II. The Causes of Environmental Problems, Causes of the Suffering

Natural disasters such as earthquakes, volcanic eruptions, etc., are serious causes of environmental problems. They are harmful to the natural dynamic equilibrium. Rivers may be polluted, wildlife could be killed and the manmade environment, for instance villages or even countries, could be put in crisis by the rage of the Earth.

People and their organizations are a potential cause of environmental problems. While some efforts have been made to solve problem, there are still many actions, especially those based on greed, that ruin natural resource systems and lead to environmental destruction.

People need food, shelter, medication, clothing, and other natural supports for their lives. But as economic growth accelerates people seem to need more and more luxuries and call for super convenient facilities to fulfill their private sensuous urges. Enormous consumption causes faster and heavier exploitation beyond the carrying capacity of natural resources.

To make profits in the present time, people use mass production and aggressive marketing measures to boost consumption. The success of production and marketing accelerates the rate of natural resource exploitation. While we can conclude that the cause of our environmental problems is simply "*human beings*" not all communities create the same type or degree of environmental degradation.

A person might drain dangerous chemical solvents into public drainage system. Small household factories might clean up their workplace by flushing their waste into nearby streams. Bigger projects may manipulate their land to meet an industrial blueprint by changing a vast area completely for their machines and workers' accommodations. A dam or electricity plant might transform thousands of ecosystems within a decade.

There are many people and social systems involved in the matter of adverse natural resource impacts. International agreements, national development policy, political hidden agenda, bribes provided for local bodies of authority, poverty, and many more factors are causes of environmental resources degradation. The making of environmental problems is as complex a matter as the ecosystem itself.

The causes of environmental problems are various due to the actors and contexts. The dangerous roots of man-made environmental destruction are the increasing numbers of world population and their lifestyles as well as ineffective communication in making environmental matters a global issue that calls for a serious participatory cure.

Multiplying world's population with the degree of destructive ways of living, we can get some ideas of the seriousness of environmental problems made by human beings. More cooperation among us is needed in order to make changes.

Villagers in the community of this study live in interrelated systems. They rely on the trading system, the local political system, relationship among neighbors, seasonal changes, natural water supply, and other aspects of the ecological web of connection. Due to their relatively short period of settlement and limited experiences as a community, their culture is not interwoven with the natural environment. There is no cooperative action to enhance the quality of their natural environment. Villagers use chemicals in their corn plantation. Garbage is scattered around. Land clearing and tree cutting are common. There has been no deliberate action on community development.

The community is in the buffer zone of the wildlife sanctuary, with relatively limited cooperation among community members. This puts it at a high risk of being resettled. In terms of environmental protection, the village may be harmful for the protected area. Cash crop plantations using agro chemicals and land clearing may threaten the fragile Huay Kha Kaeng Wildlife Sanctuary.

Community problems related with natural resources degradation have two dimensions. Natural resources degradation is an objective problem of natural sciences, while community problems are more subjective, related to social values.

Conflict between people's occupation and natural environment protection is the core problem in this study. Causes of the problem are investigated in this study along with the effort to facilitate participatory community development. The direction of such solution is guided by an attempt to make sustainable development a remedy for the wellbeing of both human beings and the natural environment, the ecosystem.

III. The Appropriate Livelihood That Promotes Interrelationship between Humans and the Environment, an Ideal Living Condition.

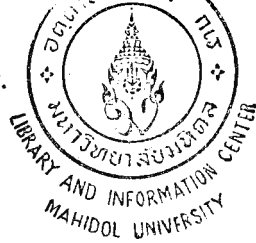
Compared to indigenous communities, societies at the present time may look more comfortable. But among our new communities, plenty of them lose harmony with their natural environment. Many communities extend into biologically rich forest land. As community members' needs grow, natural resources are exploited with relatively weak conservation awareness. They are ruining their life supports.

The natural environment supports people's lives. In many indigenous communities, people preserve and make use of the support system provided by nature by establishing a healthy lifestyle that sustains both their lives and the natural ecosystem. Sustainable livelihood is the ideal condition that ensures that our lives and our natural environment interact in a dynamic and harmonious direction. People, especially those who have developed effective community codes of living, have experimented with various ways of life. Many life styles have been proved to be healthy ways of life and have become cultures of respect, or codes of well being.

People in different cultures live in sustainable communities with harmonious interrelationships among humans, animals, plants, and minerals. Some of them take everything on the Earth as their brothers and sisters while some praise major creatures, trees or animals, as their guardian spirits and respect them. These traits are observable among people who live in and with the forest harmoniously.

Community members of such noble organizations (*villages, tribes, groups, etc*) develop a set of beliefs and rituals that support constructive behavior and prohibit certain harmful actions. Their cultures provide them with necessities without destroying natural resources "*capital*" such as trees, wildlife, and minerals.

Culture is the source of the wisdom of living that is shaped through time in the midst of changes. Communities that emerge and show a tendency to sustain their fertility and strength rely on their culturally accepted beliefs, knowledge, and behavior that promote positive interaction between community members and components of the ecosystem.



These sustainable communities develop a dynamic equilibrium after their own long and continual adjustment. They are not dictated to take ad hoc or piecemeal actions by alien superpower organizations. Their cultures look different from the modern environmental management plan but these ways of life hold people and their natural environment together in a healthy way.

Because communities develop their own process of change voluntarily, their pride and their healthy livelihood sustain their dynamic harmonious living in their natural context. The development and continuity of culture among people constitutes the oldest participatory approach.

Though modern life styles intervene and distort noble indigenous cultures, it is still people that command the health of their natural environment along with the partial contribution of materials such as air and water purifiers. People are the core of change.

This study takes appropriate development and livelihood as an end of participatory development. As the study area is located right on the buffer zone of a wildlife sanctuary, the tools for participatory community development assessed here could contribute towards making wildlife preservation more effective.

Change needs a change agent. A participatory methodology would be a medium among the people of the community and active an change agent. This study tests tools for community development and gives lessons on helping people living in ecologically sensitive area to develop appropriate livelihood strategies.

Change should be a cooperative process among people to reach the state where the biological ecosystem and human ecosystem are interacting with each other constructively for the sustainable existence of both. To make these positive changes, a deliberate participatory process is required.

IV. The Sustainable Solution to Reach the Expected

Interrelationship, the Way

How can we get people to participate in the process of change?

In order to reach the dynamic equilibrium, in which people and environment are constructively interdependent, collaboration among people is needed. Information, cooperation, and an appropriate methodology are all needed.

Sustainable development is a promising means toward the well being of both the human community and the natural ecosystem. In designing the sustainable development approach, information on both natural ecosystem and human ecosystem is taken into consideration. Collaborative community development requires more than accurate and sufficient information. It calls for a collaborative methodology that can bring people together. This study is designed to assess how such collaboration can be promoted and facilitated. As an example of community development, this relatively small community of less than eighty families was chosen.

The size of the village and the location close to a wildlife preservation area are two reasons behind the site selection. The application of the proposed methodology was assessed to find out how it could help community members to work together in making community adaptation. Observations were conducted to learn the effectiveness and limitations of the methodology.

Human beings' ways of life have been adapted to manipulate natural resources. As we invent tools, tactics, and materials to extract our necessities from nature, we change or ruin the complex, dynamic, and balanced ecosystem. As natural resources degradation keeps increasing, our adaptation should aim not to exploit only but to sustain the fertility of natural resources.

V. About this Research

Rationale of the Study

The way to reestablish a healthy interrelationship between the natural environment and our ways of life depends on the effectiveness of cooperation among community members.

This research, “Graphic-based Participatory Planning Methodology for Community Development” is predicated on the realization that people's participation is one of the most important factors that ensure the success of any development program. The main part of this methodology is in the use of a visual communication method and a "focus thinking" meeting method in facilitating community development. Lessons learnt in this study hopefully will make conservation and sustainable development more effective. Governmental effort, local organization endeavor, and any willingness to protect and make use of natural resources appropriately that aims to choose people as the entry point will hopefully find ways to apply the results of this study in making changes.

The study is presented as a case study. A village on the buffer zone of a protected area is purposefully selected, as it is a sensitive area in term of natural resources conservation. While community members want to live in the area, conservationists have expressed doubt about leaving people in such a delicate ecological system without controls. This is a problematic area, ecologically and socially, so it makes an interesting and instructive case study.

There are areas like this in other region of Thailand as well. Hopefully, lessons learnt from this study will be useful for other communities sharing similar conditions. The participatory methodology applied in this study consists of two tools, the visual assisted interview and a focus-thinking meeting technique.

Visual elements are increasingly being recognized for their significance in promoting effective communication. One common expression of showing understanding in both English and Thai language is the saying “I see it”. Even in verbal conversation, people use figure of speech to facilitate better understanding in a shorter period of time and to make the communication more interesting. Take a look at the beginning of this introduction, where the destruction of natural resources is described in the allegory of mango trees.

Nowadays, there are many ways to utilize the power of pictures. Motion picture, sketches, photography, remote sensing graphic information, hologram, map etc. have improved the quality of communication among people in different contexts.

Social scientists use relatively limited graphic tools as maps, diagrams, and photographs, while engineers, biologists, architects, medical doctors and many other scientists use a great variety of graphic tools as an important aid. It is common to see x-ray film, blueprint, or satellite photography, as it is normal to see social scientists taking written notes during their interviews.

A visual approach has potential in boosting the effectiveness of social communication. As most information from qualitative methodology is recorded, analyzed, and presented based on narrative writing, the application of graphic tools would add another tool to the process of knowledge acquisition in social science and in making effective communication in the participatory development process. In making use of visual language for community development, a main part of this research, the Mind Map is used to make interviews a better tool for information gathering and sharing between interviewer and respondents.

During the process of pictorial interview, instead of recording information in notebook line by line solely in written language, information is translated into both words and pictures. As the interview continues, the interviewer makes a visual record. Pieces of information are placed in radiant structure from the middle of the paper in order to make it an additive format so that things can be added to the map at any time. The drawing and written note in radiant format was invented by Tony Buzan and is called a Mind Map. This tool was used along with traditional interviews as a supplement. Mind Maps blend supportive visual elements with verbal communication.

Another tool that was applied in making participatory development in this study is the Six Thinking Hats method. The method is designed to make meetings an effective group process. Edward de Bono, the originator of Six Thinking Hats, has invented a technique that makes group thinking a manageable transaction.

During the latter part of this study, participants of a community meeting were introduced to the method and were invited to think logically, creatively, emotionally, objectively, optimistically, and consciously with the thinking session guided by the researcher working as a meeting facilitator.

Each mode of thinking is made tangible by connecting the mode to hats with different colors in participants' mind. White hat calls for facts and figures, black hat guides participants to think about pitfalls, green hat generates new ideas while yellow hat shines for opportunity and promising proposal, the red hat gives permission for participants to share their feelings, guts (*no need for logical support*), and the blue hat is used to keep the thinking process visible. The method is like a role playing session. This method has been explained as simple, fun, and effective in various contexts especially business and education. Further details of both techniques are contained in the next chapter.

Both Mind Map and Six Thinking Hats were applied and assessed to determine their strengths and shortcomings in supporting participatory development.

Significance of the Study

The tools which are the subject of this research provide an alternative methodology for the current development approach that aims to include people in the endeavor to make better society for all. As well as offering suggestions, this experiment points out things that interrupt or obstruct the participatory effort. Both the strong and weak points in using visual language and Six Hats Thinking in village setting are important parts of this study.

Collaboration requires an effective process that promotes common ground and creative agreed solutions. Hopefully, the tested tools might yield another alternative group process that leads to community development action plan that is congruent with the concept of sustainable environmental development.

Objective of the Study

The objective of this research is to test two proposed tools, Mind Mapping and Six Hats Thinking, that hopefully increase the effectiveness of the participatory approach in a type of community development that is good for both the people in the community and the natural environment in which it is located.

Scope and Research Tools

This research was conducted in a small village on the border of Huay Kha Khaeng Wildlife Sanctuary. The village is chosen as it is on the borderline of the wildlife sanctuary, which is a fragile area in term of natural resources conservation. There are around 80 families in the village with about one thousand community members. The rather small village on the sensitive area of a World Heritage site makes it an interesting site for the trial of a participatory methodology.

The two techniques were introduced to community members in order to examine the capacity to facilitate people's active involvement in the community development process.

The assessment of these tools for participatory community development is divided into two parts, the application of Mind Map for one-on-one interviews with villagers and community meetings using the Six Hats Thinking method.

Mind Mapping and Six Hats Thinking are two techniques that have been applied mainly among westerners. Business and educational organization are increasingly using them to improve their performance.

Mind mapping emphasizes the use of pictures to stimulate thinking, and to map the thoughts. In this research Mind Mapping was used to collect information on social institutions.

Six Hats Thinking, a focussed thinking technique, was introduced to community members to help them develop action plan(s) for community development.

During the fieldwork, the researcher stayed in the village in order to get acquainted and work with the community in a time span of one year. During this period, the researcher made Mind Maps that recorded information from respondents along with verbal interviews.

When people showed trust and realized the harmless purpose of the researcher, the researcher invited some people to join a small meeting and introduced them the concept of Six Hats Thinking. The self-screening of respondents and participants is based on the enthusiasm of the villagers. Before the trial of both tools the researcher stayed in the village to familiarize himself with the community.

During the familiarization period, the researcher visited families and conducted non-formal interviews to establish relationship with community members and to learn about their social context. Interested villagers were interviewed with Mind Maps later and some were introduced to the concept of Six Hats Thinking and invited to join the meeting.

The use of Mind Map and Six Hats thinking was assessed directly in the field through direct observation and the analysis of information obtained from fieldwork in a qualitative research process.

The qualitative research approach is applied in this study. This is because the community and people behaviors are complex and dynamic. In order to learn the complexity of the community and the effectiveness of the proposed methodology, participatory interviews and observations in the field were applied. Information in the form of field notes was constructed into a big picture that aimed to help the researcher learn about the effectiveness of the participatory methodology for community development. The evaluation of the effectiveness of the two tools under the study relied on direct observation of participants and the results of the meeting. The assessment of the tools relied immensely on people's participation.

To study the application of the Mind Map, the researcher carefully observed the respondents during the interview. Both the information from the interviews and respondents' body language was taken to indicate their participation in information gathering. The observations were expected to reveal both the strengths and weaknesses of the Mind Map interview.

For the Six Hats Thinking session, the researcher assessed the method by looking at both the process and product of the Six Hats meeting. The process should facilitate active participation of community members and the result of the participation should be that the community development plan that agrees with both their quality of life and the well being of their natural environment. During the meeting, the researcher functioned as meeting facilitator, which is the role symbolized by the blue hat. The facilitator's role is to provide direction for the thinking process.

Further details of the process of the study are elaborated in Chapter III, Research Methodology.

The next chapter, Literature Review provides information related to the research.

CHAPTER II

LITERATURE REVIEW

This section reviews the literature which has played an important role in shaping this study. The focus is on the potential approaches for solving environmental problems and the relationship between these approaches and the proposed Graphic-based Participatory Methodology for Community Development.

Mind Map and Six Thinking Hats for Participatory Approach in Community Development

People's participation is a crucial part of sustainable development. One way to increase the effectiveness of these processes is to improve interpersonal communication and collaborative action in making constructive consensus among community members and those related.

Mind Map and Six Thinking Hats are two techniques that are designed to increase the efficiency of thinking.

Mind Map is introduced both for individual use and collective group thinking. The core principle of the technique is to construct ideas in radiant form for participants to use as community worksheet. The organization of information on newsprint paper starts at the middle of the page and information is added around the core of the discussion. Pictures and keywords are ideal forms of information on the map.

Six Thinking Hats is created to facilitate group thinking by allowing different modes of thinking to be deliberately executed among participants which open chances for individuals to control their thinking effectively. Imaginary hats with different colors symbolize the modes of thinking. The facilitator of the session guides the sequence of thinking by inviting participants to wear different hats at different steps of the attempt to reach a group consensus.

The application of both the Mind Map and Six Hats Thinking in participatory development is examined in this study.

Mind Map making during interviews will facilitate better interpersonal communication and increase the quality of the information on the subject community, which will be helpful in making appropriate decisions for the community.

Six Hats Thinking for community meeting could make the participatory approach more practical. More effective meetings would help the group develop skills in making community cooperation for creative and practical problem solving and community development.

The following section provides information on both tools.

Mind Map

Mind Map is a tool for organizing thinking. Adding information in the form of pictures and keywords in a radiant manner makes up the map. The main issue is set on the middle of a big sheet of paper, preferably horizontally set. Items of information are added around the main topic and details are added from sub topics, and so on. An example of Mind Map is shown in the Appendix. The Mind Map shares some features with the Concept Map. The Concept Map is used among people who use computers to construct information systems in a nonlinear perspective. The branches are linked from the main subject to other related topics and from these sub-topics links are expanded in the same manner as the Mind Map. The Concept Map is used widely as mentioned by Brian R. Gaines and Mildred L. G. Shaw at Knowledge Science Institute, University of Calgary, Alberta, Canada.

A wide variety of different forms of Concept Map have been applied in education (Lambiotte, Dansereau, Cross and Reynolds, (1989). They have also been used as tools to support the interviewing process in knowledge acquisition from experts, for example in the Wright-Patterson development of the pilot's associate (McNeese, Zaff, Peio, Snyder, Duncan and McFarren,(1990). In management, Axelrod (1976) proposed a form of Concepts Map as a means of representing the conceptual structures underlying decision making, and these have been used empirically to analyze organizational decision making (Eden, Jones and Sims, 1979), social systems (Banathy, 1991) and the policies of political leaders (Hart, 1977).

(Gaines and Shaw(1995 November 22). Concept Maps as Hypermedia Components.

[Online].)

Gaines and Shaw's document provides illustrations to help the reader see the picture of a Concept Map. One of them is included in the Appendix.

Major differences between Mind Map and Concept Map are the radiant structure and the application of pictures.

In making a Mind Map, the user fills in information, in form of pictures and keywords, on the map and gets a holistic view of the subject of investigation.

The Concept Map deals with central or critical ideas too but without pictures. .

Tony Buzan, the originator of Mind Map, applies the nature of the right-brain, as mentioned in Quantum Learning, in the development of the Mind Map to work with the holistic brain.

The left-brain thinking processes are logical, sequential, linear, and rational. This side is highly organized. Though based in reality, it is capable of abstract and symbolic interpretation. Its modes of thinking lend themselves to the orderly tasks of verbal expression, writing, reading, authority association, locating details and facts, phonetics, and symbolism.

The right-brain thinking modes are random, unordered, intuitive, and holistic. These modes are well suited for the nonverbal ways of knowing, such as feelings and emotions, haptic awareness (feeling the presence of objects or people), spatial awareness, shape and pattern recognition, music, art, color sensitivity, creativity, and visualization.

(DePorter, Quantum Learning, 1992, p. 38)

In this study, the researcher translated information from villagers into pictures and keywords within the pattern of Mind Map during one-on-one interviews to form holistic perspective. Mind Map making in this study was based on three perspectives of the interviewee's on their lives in their community.

Respondents are asked for information on *social institutions, incentives and disincentives of living in their present community, and importance of natural environment to the survival of their community*. During the interview, the respondents are given opportunities to review their own living condition in both pictures and words by referring to the Mind Map.

As the conversation goes on, the respondent sees the picture of their social institutions, their incentives and disincentives of their community and their relationship with natural resources, i.e. the wildlife sanctuary.

Mind Map shows the whole picture concretely. The process of making the map activates the right side of the brain and relates the mapmaker to a real situation.

In the usual social scientific interview, the interviewer records the information on a questionnaire or interview schedule and the interviewee rarely gets a chance to review what has been recorded.

The Mind Map and the making of it familiarize the researcher of this study with the community members. The pictures of the society are inputs for the community meeting as well as community members can easily refer to them.

The drawings make the interview less formal as they are drawn quickly and roughly. The cartoon-like drawing sets a playful atmosphere for respondents. Usage of picture is both amusing and comprehensible.

In summary, Mind Map keeps important ideas of the community visible, make the interview more interesting and less formal. The cozy atmosphere in information gathering could be useful for both respondents and the researcher in the Thai cultural context, which is less formal or serious.

Six Hats Thinking

After the period of familiarization and Mind Map interviews, community members were invited to participate in meetings to make a development plan for their own community. This is the latter part of the study.

Holding a meeting is an important process in making a collaborative development plan. Ideally, it is the stage for all participants to dedicate their knowledge in order to reach fruitful consensus.

Six Hats Thinking is a deliberate thinking process for a group that facilitates participation in making an effective community development plan. Participants are asked to wear different hats, which symbolize different modes of thinking.

Six Thinking Hats is designed to facilitate focused thinking. During the process, participants are asked to imagine they are wearing a different hat, which direct one specific type of thinking at a time.

Wearing white hats, we focus our thinking on objective facts and figures. The red hat gives the emotional view. The black hat covers the negative aspects-why it cannot be done. Yellow hat is optimistic and covers hope and positive thinking. The green hat indicates creativity and new ideas. Blue hat is concerned with control and organization of the thinking process.

(De Bono, 1990 : 31-32)

During the meeting the researcher acts as facilitator or, according to the technique, symbolically wearing the blue hat. The facilitator guides the participants' attention to one aspect after another. With help of the symbol of wearing a hat, the facilitator asks the participants to change their mode of thinking by asking the person or the group to symbolically change hat.

Wearing the yellow hat, participants were asked to think about "*opportunities and promising issues*". Wearing the black hat, they are asked to look for "*weak points*" of the proposed plan at that moment. Wearing the green hat, they are asked to find "*creative solutions and new ideas*". When the white hat is on, participants are asked to share only "*facts and figures*". The red hat calls for participants' "*feelings or gut reactions*", no need for supportive logical reasons behind the statement from any red hat wearer. The blue hat wearer, i.e. the facilitator or anyone else who furthers the "*process or agenda of the meeting*", helps to lead team members along.

Finally the facilitator helps the group review the thinking process, get the proposed plan agreed among participants and/or wraps up the meeting.

Instead of keeping one proposed idea or items of information and try to protect or support it, participants will be invited to think all round the issue, i.e. to focus on different perspectives.

The potential of Six Hats Thinking in supporting participatory community development is

- the method deliberately avoids time wasting conflict,
- it is convenient, and
- it opens opportunities for the participants to share their input without risk of making perceived mistakes.

Six Hats Thinking is like role-playing. It is a game of thinking, as a result sharing ideas, facts, feeling, and any expression no one is criticized. It does not create yes-no situations. Confrontation, especially to "save face" or to be right all the time, is avoided. Participants take part in thinking as team players. A peaceful atmosphere, which is highly valued among Thais, is facilitated by this method.

Facts, ideas, feelings, caution, hopes, are all in this technique. If they are not well managed, meetings can possibly result in confusion. Six Hats Thinking provides a simple technique, the symbolic changing of thinking hats, to manage different thinking modes.

People perceive one situation differently. A person may want to solve a problem logically and use only facts in tackling the problem. But in real life, personal values, feelings, and many other factors are involved in the problem and the process to reach an appropriate solution.

Six Hats Thinking provides an opportunity to combine different types of contributions from various participants. As a result there is no absolute right or wrong. Even feelings are welcome as well as logical comment. Together, all participants' expressions are taken as important. All are respected.

The combination of deliberate thinking and fun of role-playing suggested to the researcher that the method had a high potential to be applied in Thai cultural context. Thais place a high value on having fun ('SANUK') in any endeavor. Being playful is part of Thai lifestyle.

The Thai word for party and work is the same word "*ngan*". And any medical doctors, biologist, social scientists, politicians, and even lay people who dedicate time, effort, energy, and intelligence for any subject would be mentioned as they are "playing the subject" (*'len rueng nee'*) to indicate the strong interest and involvement in any subject matters. The interest may be serious but the word "play" is still appropriate. Both the Mind Map and Six Hats Thinking make community meetings engage both the sense of work and play, which is appropriate in the Thai cultural context.

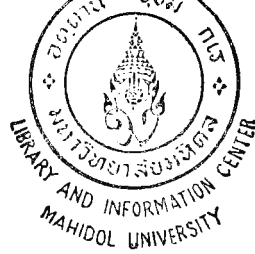
The next section provides information on related literatures that provide foundation for this study.

Environmental Problems and People's Participation

Thailand Environment Institute, in the executive summary of "*Thailand Trade and Environment*" stated that

Wide-spread deforestation has occurred as a result of logging by the timber industry and land clearance by farmers eager to raise cash crops for exports. Covering 58% of total land in 1960, forests now account for only 26% of land area by official estimate, and less according to other informed studies.

(*Thailand's Trade and Environment (Executive summary)*). [Online].)



Deforestation is a major example of Thailand's environmental problems. Though it is one among many environmental problems, the significance of forests for the wellbeing of the human community is more than important. Forests are not only places for trees and wildlife but also our means of survival.

Forests

. . . perform many beneficial functions. Often called the lung of the planet, forests help to regulate the carbon, nitrogen, and oxygen cycles. They help to regulate temperature and rainfall. The root systems of trees hold soil in place, preventing it from eroding and accumulating in streams and lakes, a process call siltation. Siltation impedes the flow of water. Moreover, the increased amount of sediments suspended in the water adversely affects aquatic organisms: the muddy or turbid water prevents light penetration to phototrophs, reducing primary productivity, and the sediments can settle on fish eggs, preventing them from obtaining sufficient oxygen.

Thus, forest help to ensure a steady supply of clean air and water.

(Kaufman and Franz, 1993, p. 106)

Deforestation destroys both the forest ecosystem and the forest's ecological treasures. The problem relates to many destructive events, water shortage, endangered wildlife, famine, and conflicts between social groups. Many small forest degradations can have a disastrous effect. Regional droughts are caused by the degradation of many small forests which as a system “. . . *help to ensure a steady supply of clean air and water.*”. (Kaufman and Franz, 1993, *ibid.*) Maintaining a healthy forest means more than simply reserving green land. It is a major security system for our survival and should be carefully managed.

In the past, a common solution to deforestation was law enforcement. People are forced to resettle. Their community structure and social relationships are torn apart. But efforts to conserve forest and other natural resources continue. Our society has learnt that top down management efforts are too limited. Governmental operations often rely on limited information, incomplete strategies and are liable to be unsuccessful.

People's participation is a more progressive form of environmental management. A very significant step toward empowering people to promote greater participation in environmental management is the approval of Thailand new constitution.

Thailand is making progress in facilitating public involvement in developing the country. The constitution which is the supreme law concerning the administration of government of the country has been adjusted. More authority has been shifted from the central management system to local administration and the citizens.

Thus the new constitution of Thailand supports the rights, freedom and duties of local Thai citizen.

Section 46 of the new constitution states that;

Persons so assembling as to be a traditional community shall have the right to conserve or restore their customs, local knowledge, arts or good culture of their community and of the nation and participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion and persistently as provided by law.

And section 56: reads

The right of a person to give to the State and communities participation in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and preservation of the quality of the environment for usual and consistent survival in the environment which is not hazardous to his or her health and sanitary condition, welfare or quality of life, shall be protected, as provided by law.

Any project or activity which may seriously affect the quality of the environment shall not be permitted, unless its impacts on the quality of the environment have been studied and evaluated and opinions of an independent organization, consisting of representatives from private environmental organizations and from higher education institutions providing studies in the environmental field, have been obtained prior to the operation of such project or activity, as provided by law.

(The National Assembly of Thailand (no date). Constitution of the Kingdom of Thailand [online].)

According to the constitution, local people have the right to cooperate with the state to conserve and benefit from natural resources. The legal authority of local citizen to protect, promote and maintain the quality of the environment is confirmed.

In the book entitled '*The Greening of Aid: Sustainable Livelihoods in Practice*' there are examples from Asia, Africa, the Caribbean, Central and South America to show there are forms of development that allow people to manage their own resources while improving their condition and enhancing their environment. The case studies in the book share the following 5 major elements of success:

(1) a learning-process approach; (2) people's priorities first; (3) secure rights and gains; (4) sustainability through self-help; (5) calibre, commitment and continuity of staff.

(Conroy and Litvinoff, 1988 : 8)

The generalization from experiences by Conroy and Litvinoff suggests the essence of people participation in general. More specifically, in Thailand, studies point out the effectiveness of people's participation in social development as well.

Roles of community in making successful development are reported by Shalardchai Ramitanondh (Ramitanondh, 1996 : 27-36) in his "Farmers' Adaptation to Alternative Agriculture: cases studies of farmers in the four regions of Thailand". His work states that

Two management methods have proven effective:
Self-reliant management. . .
Community-based- management. . .

(Ramitanondh, *ibid* : 34)

Community-based management mentioned by Ramitanondh means essentially that resources are managed by the community and not on an individual private rights basis. This manner of management promotes sustainability.

Environmental management with people's participation is an effective solution to natural resource degradation. The International Institute for Sustainable Development states in *Countdown Forests 97, A Briefings Series on substantive issues in the international forest policy dialogue* that

Major changes are afoot in forest management and nowhere are the shifts more striking than in the expanded roles people and local communities are playing in decision-making over forests. India's experiences with the introduction of Joint Forest Management (JFM) are perhaps the best-known of a growing body of knowledge on participatory forest management. 'JFM' denotes a partnership in forest management between government authorities and local communities, but similar participatory models - some with industry, some with different names - are developing around the world.

(The International Institute for Sustainable Development. *Countdown Forests 97, A Briefings Series on substantive issues in the international forest policy dialogue, February, 1997.* [Online].)

His Majesty King Bhumibol supports the idea of having local people play an important role in resources management also.

His majesty the King is both a theorist and a practitioner of development and is regarded as a paragon of virtue who has applied his perseverance and devotion to the sustainable development for the secure future of his people, which is, recognized fact worldwide. The King's many addresses emphasize the importance of people in environmental management. According to His Majesty the King, people and the forest should be together.

In the Royal Address, given at the Closing Ceremony of the Northern Agricultural Seminar at Northern Agricultural Office in Chiangmai (Thursday, February, 1981), His Majesty the King showed his progressive point of view in environmental management. A part of this address is as follows.

Consequently, the course of operation would be to enlist villages who are relatively well-to-do to be forest rangers; they would see it that nobody come and fell the trees, or in the case of the forest fire they would help putting it out. Take the example of the pine forest in Mae Chaem District at the village of Wat Chandr; the forest is very large, and pine trees are extremely flammable, but there is seldom a fire. Why? Because the villagers look after their own property. At the beginning no government officials had come to teach them this and that; they did it on their own; they saw to it that under the trees would be clean, no combustible material that could catch fire, or in case of a small fire, they would put it out. They did that because it is in their own interests; they make a living on the resin of the pine trees. It is their main income, in their own primitive way. Now if we want to assist them, we have to provide them with techniques that will help the better secretion of the resin, with better quality and improved techniques, and also better marketing; all this is what has to be done. The ability is already there in the villagers; it is in principle the same techniques of keeping the forest so that it won't be destroyed or go up into flames. This is how to look after the forests, which after all, is the main object of this seminar. We have to let these villages and these villagers look after the forests themselves...

The royal address reflects the truth that people and their natural environment are interrelated. The reason behind their protection of the natural environment is that their own survival is at stake. While external managers perceive natural resources as separate from the community, community members look at the resources from another point of view. From the villagers' standpoint, the natural environment is vital for their livelihood, not just for their interest, education, or duty.

People who rely on natural resources have a stronger incentive to keep natural resources healthy. The most important part of development process is to translate the fact that there is a strong interrelationship between the natural environment and human being, into practical action. Some effective efforts in conducting appropriate community development are as follows.

Approaches in Sustainable Rural Development

Natural resources degradation is a problem in Thailand and through out the world. People ruin their own capital, nature, for their short-term well being. They are enjoying their present time but creating a situation that will mean a very bleak future.

At the end of "The Story of Mahajanaka", Mahajanaka said

"...They lack not only technical knowledge but also common knowledge, i.e. common sense: they do not know what is good for them. They like mangoes, but they destroy the good mango tree."

(His Majesty King Bhumibol Adulyadej, *The Story of Mahajanaka*, ibid : 141).

People who lead their life in an environmental friendly way are using the consistent interest from the natural environment, their capital. Like the mango trees allegory, if they can take care of their resource, their capital will be with them forever.

Natural resources are in different forms. Water, air, fish, herbs, mushrooms, honey, fruits, bamboo shoots, flowers, ornamental plants, shampoo herb, and a lot more. All can mean a good life for local people if they are managed well. Local people with local wisdom can live with these resources, but rapid changes in today's society corrupt the flow of wisdom from generation to generation.

Local consensus should be developed to maintain a new social/environmental harmony, as the indigenous trait of life is too weak to nurture natural resources for consistent yields and replenishment.

Know-how of using natural products helps community members live with minimum spending. If they can manage themselves well, they can earn money from selling products from renewable resources. This will be best when local people harvest these goods sustainably.

Because of the profit that local people can obtain from natural resources, they have significant incentive to manage these resources well. Bad soil, bad weather, lack of water, erosion, and other natural disasters harden the life of the people in the area. They will not harm nature if they can see the relationship between nature and themselves.

An effort to empower the local community to manage themselves to live in harmony with natural environment means an effort to keep the whole natural system healthy. Some interesting approaches in community development and environmental management that include people participation as a crucial component of them are as follows.

Community-identified Adaptive Strategies

An approach to develop sustainable society is suggested by the International Institute for Sustainable Development (IISD), a non-governmental organization located in Canada. Essentially it is a framework which was developed for the Community Adaptation and Sustainable Livelihood Project.

During the period 1993-1995 IISD successfully developed and applied an approach which brings together community-identified adaptive strategies, analysis of policy, and technologies to start a process of helping communities build sustainable livelihood systems.

...Our framework might be viewed as a set of interactive triangles. One representing the three points of sustainable development (economic efficiency, ecological integrity, and social well being) and the other representing the three elements of sustainable livelihoods-local (indigenous) knowledge, science and technology, and policy structures. The resulting figure represents the complex integration necessary to build sustainable communities and livelihoods....

(Community Adaptation and Sustainable Livelihood(no date). *Community Adaptation and Sustainable Livelihood*. [Online].)

The keystone of this approach is the aim to help community develop their own sustainable livelihood that embraces ecological integrity.

Environmental Problem Solving

Another approach to deal with community development and environmental problems is by taking the concept of Environmental Problem Solving by Kaufman and Franz. The proposed approach tries to answer the question “what methods can we use to solve environmental problems?” The problem solving is as follows.

Environmental science is driven by problem-solving models originally developed by research in the social sciences. These models differ from the scientific method in that they start with a human-caused problem and take into account the human values pertinent to the problem. The scientific method and environmental solving are both useful tools. However they are applicable in different situations.

Scientific Method	Environmental Problem Solving
1. Involves observation, hypothesis formation, and experimentation with in a specific field; not used to solve an environmental problem directly.	1. Involves problem identification, goal formation, objectives formation, data collection, and analysis from many fields applied to environmental problems.
2. Attempts to be objective, value-free, bias-free.	2. Considers human values, so cannot be value-free.
3. Involves an anthropocentric view.	3. Involves a biocentric view.
4. Involves continual questioning and testing to establish validity of hypotheses.	4. Involves continual evaluation and monitoring of situations.
5. Requires experimentation that has adequate controls and can be replicated by other scientist.	5. May not call for direct experimentation, but the results of experiments often form the basis for solution.
6. Considers experimental design and testing of hypotheses to be the most critical steps of inquiry.	6. Considers problem identification to be the most critical step in finding solution, but other steps to be more important at different times in implementing solution.
7. Is interested in knowledge for its own sake; or, in the case of applied science, is interested in applications of knowledge which may or may not solve environmental problem.	7. Is interested in finding the best solution to actual environmental problems within a particular social setting.

Table 2.1 Comparison of Environmental Problem Solving with Scientific Method

(Kaufman and Franz, 1993 : 34)

The significance of this approach to environmental problems is the realization that environmental protection must include the dynamic social setting and human values in the operation. This suggests that people are a valuable component of the environment and so too are their attitudes (*values*). These need to be understood if environmental problems are to be solved.

Participatory Rural Appraisal

Another development process that is publicized as an effective approach to sustainable development is Participatory Rural Appraisal. It is known as a policy-making tool. A concise definition of Participatory Rural Appraisal (PRA) is

. . . families of approaches, methods and behaviors that enable people to express and analyze the realities of their lives and conditions, to plan themselves what action to take, and to monitor and evaluate the results. PRA employs wide range of methods to enable people to express and share information, and to stimulate discussion and analysis. Many are visually based, involving local people in creating, for example:
 maps. . .
 flow diagrams. . .
 seasonal calendar. . .
 matrices or grid. . .

(Institute of development studies. (1996). *Power of participation*. [online].)

The interesting points of PRA is its core concepts as follows.

- **Empowerment.** Knowledge is power. Knowledge arises from the process and results of the research that, through participation, come to be shared with and owned by local people. Thus the professional monopoly of information, used for planning and management decisions, is broken. New local confidence is generated, or reinforced, regarding the validity of their knowledge. "External" knowledge can be locally assimilated.
- **Respect.** The PRA process transforms the researchers into learners and listeners, respecting local intellectual and analytical capabilities. Researchers have to learn a new "style". Researchers must avoid at all costs an attitude of patronizing surprise that local people are so clever they can make their own bar charts etc. The "ooh-aah" school of PRA works against its own principles of empowerment and indicates

shallow naiveté on the part of the researcher. A good rule of thumb is that when you can really understand the local jokes, poetry and songs, then you may feel you are starting to understand the people's culture.

- Localization. The extensive and creative use of local materials and representations encourages visual sharing and avoids imposing external representational conventions.
- Enjoyment. PRA, well done, is, and should be, fun. The emphasis is no longer on "rapid" but on the process.
- Inclusiveness. Enhanced sensitivity, through attention to process; include marginal and vulnerable groups, women, children, aged, and destitute.

(Community Adaptation and Sustainable Livelihood (no date). *Participatory Rural*

Appraisal(PRA). [Online].)

PRA is humanistic. The main element of the approach is the learning community that emphasizes people's learning process and cooperation to utilize existing resources creatively.

The common core among the development approaches mentioned above is the role of people, especially their beliefs and values. People's belief system require cooperation among community member to reach common agreement that support individuals, society, and natural environment in the long term. In the content of the approach to facilitate people's participation in sustainable development, this study test two more tools (Mind Map and Six Hats Thinking) that are designed to improve interpersonal communication, information gathering, and the process of collaborative community meeting.

Related Theories

Behind the application of the two tools, Mind Map making along with one-on-one interview and the Six Thinking Hats meeting, there are various theories that encouraged the researcher to conduct the study.

Thinking process is one subject that backs up the application of the two tools on this study. As a result, the theory of self-organization of information is elaborated as well in this chapter.

Another theory to be presented is an approach to understanding the whole picture of interrelated issues, the interdisciplinary approach.

This section gives information on the two theories related to the study, the Self-organization of Information, and Interdisciplinary Approach.

I. The Self Organization of Information Theory

Both Mind Map and Six Hats thinking are based on the theories of self-organization of information and the multidisciplinary approach. Both theories are elaborated in connection with the theory as follows.

Mind Map is relatively unstructured compared to information collection in the form of a written record. Information in the map looks more organic than well categorized written notes. This nature of the method should help respondents and the researcher to gain some ideas of the dynamic information of the community in its environment.

Six Hats Thinking is a simplification of the complexity in human thinking. Instead of taking facts, feelings, hopes, new ideas, and logic into consideration at once, mixing them, and causing conflict and confusion, Six Hats Thinking facilitates these modes of thinking by making a sort of traffic system that respects all the modes. Participants think of one mode at a time then shift the mode together as a team. The complexity is delayed and expected to emerge in each individual without conflict between different modes of thinking from different individuals. Behind this arrangement of thoughts, is the complexity of self-organization of information.

The basic concept of self organization is that when items of information come together they organize themselves into a system which is not planned ahead.

When we have information transferred into our brain, the information can construct itself until it forms a pattern that can be recognized.

To visualize the self-organizing process, Web Dictionary of Cybernetics and Systems gives a concise explanation of paper clips.

A chain made out of paper clips suggests that someone has taken the trouble to link paper clips together to make a chain. It is not in the nature of paper clips to make themselves up into a chain. But if you take a number of paper clips, open them up slightly and then shake them all together in a cocktail shaker, you will find at the end that clips have organized themselves into short or long chains.

(Web Dictionary of Cybernetics and Systems by Principia Cybernetica Web (no date),

Self-organizing, [Online].)

The theory suggests that the items of information on the village will organize themselves after their experience of both of Mind Map making and during Six Hats Thinking meetings.

Self organization has a place in *Lateral Thinking, a text book of creativity*.

Edward de Bono explains Self-organizing system as follows.

One can think of a secretary actively operating a filing system, of a librarian actively, cataloguing books, of a computer sorting out information. The mind however does not actively sort out information. The information sorts itself out and organizes itself into patterns.

(De Bono, *Lateral thinking, a text book of creativity*, 1970 : 28)

In order to gather diverse information Mind Map would help including information based on three fields of study, sociology, economics, and anthropology.

The three perspectives are

- the function of social institutions,
- people's incentives and disincentives to live and not to live in the community, and
- the relationship between community members and their natural environment.

During fieldwork, Mind Map making will bring in information on three main issues, community's social institutions, their incentives and disincentives for living in the village, and how villagers make use of their natural environment. The information will be discussed as raw materials in a Six Hats Thinking meeting. Hopefully this information will help community members to reach a consensus on how they could make their village a better place for them and their natural environment as well.

One factor that plays an important role in helping community members formulating a collaborative plan is the atmosphere of the meeting. Any session that requires new ideas should provide some time for the incubation of ideas. A relaxing period supports the organization of information as elaborated in the following paragraph.

Another method is to simply allow your brain to incubate an idea. In other words having completed your decision-making Mind Map, you allow your brain to relax. It is in times of rest and solitude that our brains harmonized and integrate all the data they have received. And it is in such times that we often make our most important and accurate decisions, because relaxation releases the gigantic powers of the parabrains—the 99 per cent of our unused mental ability, including that which is often called 'the paraconscious' ...

This method is supported by practical experience. For instance, many people report suddenly remembering where something is, suddenly having creative ideas, or suddenly realizing that they need to make a particular choice, while lying in the bath, shaving, driving, long-distance running, lying in bed, day dreaming, gardening, sitting on the beach, walking in the countryside, or being in any other calm, restful, solitary situation.

(Buzan, 1995 : 127)

Being aware of the importance of comfortable moments in supporting the self-organization of information, the researcher should be sensitive to the context of sessions during the study in order to facilitate the time for incubation of ideas on community development. Friendly conversation is useful in encouraging information flow. In addition, it may help person (s) constructing new ideas as put forward in the theories of self-organization of information.

Traditional "meeting" is not designed for self-organization of information but to "win" the discussion or debate. Most people take the meeting as an opportunity to win an argument. They propose an idea and support it with points in favor of the proposal. They listen to their opponent's information in order to attack it. Participants either attack or defend ideas during the meeting.

This causes confrontation, something frowned upon in Thai society.

The Six Hats Thinking method as mentioned earlier opens up a different atmosphere for a meeting. The role-playing of hats changing should cultivate fun and a relaxed atmosphere. Emotions, cautions, hopes, fears, facts, disagreements are all expressed not as a representative of individuals but as "an action" only. It is the hats that perform the thinking not the whole individual.

Thais like to play and prefer not to confront, as a result the Six Thinking Hats method appears to be a very appropriate and promising technique.

A playful situation supports the self-organization of information. The less the information is taken seriously (but in focus), the more flexible they are to make consensus among community members to develop their community along with their natural environment.

II. Interdisciplinary Approach

In order to provide a reliable direction for information gathering and analysis, theories will be taken as guidelines. Phenomena will be perceived from different perspectives. Theories will move the researcher around the subject of investigation and add depth to the explanation of the event. For example, living in the present community may be applicable because the capacity of the land to support villagers with food and cash (the land is their incentive). At the same time they may be here because the law could not keep them out (weak social institution). Both of the perspectives help the researcher understand the community and see the complexity or the subject of interest as well.

A community is not only the living place of resources consumers. There are social system, economics system, belief system and other sub-systems.

Rural Systems Research and Farming Systems Research Projects at Khon Khaen University worked with systems in rural community intensively. The project hosted The International Conference on Rapid Rural Appraisal in 1985. A statement in the report proceeding of that conference reads as follows.

The rural context of practising farmers is complex. They have to deal not only with crops and crop conditions but also with many other variables that together comprise the total rural system. Given the overall complexity of local systems, it is seldom possible for a professional specializing in any single discipline to adequately understand all of the factors with which farmers must contend...

(Somluckrat W. and others, 1990 : 11)

Understanding community is a complex matter as well. Because one event can be seen from differently points of view. When people grow only one kind of plant in the same area continuously, the soil goes bad. An agriculture expert may state that farmers do not have essential information. An economist may find out that they do this because of the debt system.

For example, farmers may grow corn only because the seed store's owner lend farmers a lot of money and command them to plant corn. An anthropologist may find some superstitious belief around that practice of monocropping. A sociologist realizes peer pressure in the community. All of the answers are important and interdependent.

Analysis from many fields yield different perspectives. Rapid Rural Appraisal (RRA) is a good example of methodology that provides the concept of triangulation to support the application of an interdisciplinary approach.

Triangulation

At the basic level, RRA can be seen as a methodology that consciously combines things, or that approaches information from several intentionally different point of view (usually a minimum of three, hence “triangulation”).

(Somluckrat W. and others, 1990 : 9)

Triangulation helps the researcher to see the subject from different perspective in order to improve accuracy and avoid bias.

The concept of triangulation is in line with the ideas of Edward De Bono.

De Bono who is the leading authority in the field of creative thinking, stated in "Six Action Shoes", a book on thinking and action that when investigation is needed:

There may be a need for a second person to show that the same data can indeed be looked at in a different way. There can also be a habit, suggested earlier, of always having at least two theories or hypotheses in mind.

(de Bono, Six Action Shoes, 1992, p.52)

It is helpful for the researcher to hold more than one theory in mind while collecting and analyzing data. Looking at a phenomenon with different perspectives would make the situation more comprehensible though it may require times of confusion during the process.

All together information on environmental problems, some solutions, and related theories help to construct the Graphic-based Participatory Methodology for Community Development. Mind Map and Six Hats thinking method are being used here with the intention to find out the possibility of using the methodology in Thai cultural context.

The following chapter on research methodology provides the structure of the study and some information on the subject community.

CHAPTER III

RESEARCH METHODOLOGY

Because the objective of this research is to test two tools, Mind Map and Six Hats thinking in making participatory community development, this study is executed in the manner of action research using a qualitative research methodology to assess the effectiveness of the two tools.

This section provides information on the structure of the study.

This chapter consists of following sections:

- I. Preparation before Fieldwork
- II. Fieldwork
- III. In-process Information Analysis and Additional Literature Review
- IV. Analysis of all Information
- V. Synthesis of Information and Research Presentation
- VI. Learning from Research Advisors
- VII. Qualitative Research Methodology

The sections are arranged to provide a comprehensive view of the study. In fact there are situations in which these parts of the study overlapped and were at times switched due to the real situation.

Preparation before Fieldwork

Before the fieldwork two preparations were conducted. One was the study of related reading materials and the other was the test of the tools before the fieldwork. The tools of Mind Map and Six Hats thinking were mainly learned from books and later from the Internet.

Tools tests were done informally. The researcher used Mind Map in different situations, for example in collecting information both for self education and in social gatherings. Mind Map is easily applied in almost any type of interpersonal communication session.

Six Hats Thinking session requires relatively more formality. But it was tested once in a small governmental organization. The session took three hours for orientation and a two hours practice session.

Fieldwork

The fieldwork of the study consisted of seven visits to the village during a period of one year. These informal visits lasted from seven to ten days in length. During these visits, the researcher learned about the community and tested the effectiveness of Mind Map and Six Hats thinking in facilitating participatory community development.

Early visits were dedicated for familiarization. The researcher stayed at the temple in order to be able to work on his field notes independently without interrupting villagers.

Informal interviews and participatory observations were conducted to learn about the village's circumstances as well as to gain trust from villagers. The application of Mind Map started during the third visit.

All through the study, the researcher began all interviews verbally and observed respondents for signs of approval in order to continue the interview or terminate it politely.

For interviews with Mind Map, starting during the third visit, the researcher asked for permission to keep a record, the Mind Map. During the talking- drawing interviews, the researcher transformed villagers' responses into pictures and keywords to keep pieces of information in a radiant structure as shown in Chapter 2. Literature Review. It was hoped that informal talks (*for getting acquainted*) and Mind Map making during interviews would pave the way for the introduction of Six Hats Thinking and the invitation for villagers to small meetings on community development.

The meetings with Six Hats Thinking started with the introduction of the method of focussed thinking (*Six Hats thinking*) which provided interested villagers with the basic concept of the method. After the overview of the meeting was presented these villagers were invited to small meeting sessions. The researcher's aim was to facilitate the sessions to achieve group consensus on village development action plans.

In-process Information Analysis and Additional Literature Review

After each visit, the researcher returned from the village with direct experiences, field notes, and a Mind Map. These pieces of information were put together and analyzed.

Along with the utilization of the raw material from the villages, after each visit, the researcher studied more literature related to the subject matter. After the time out of the village, the researcher returned to the site and continued the fieldwork.

Analysis of all Information

After the seventh fieldwork trip, all information was arranged in a master Mind Map which completed the information gathering process. Lessons learnt are studied for pattern, salient issues, and inter-related issues that answer the research question. The main purpose of the generalization is to understand the reasons behind the effectiveness and ineffectiveness of the proposed methodology.

Synthesis of Information and Research Presentation

The benefits of using of Graphic-based Methodology for Community Development and its weak points were synthesized into new ideas on how to improve the proposed method. The improvement is a part of the study as well as other recommendations for further study.

Finally, all of the experiences were prepared for concise presentation and a report that cover all issues for others who are interested in making and studying participatory development in the future. The review of all information for presentation is another opportunity to ponder the experience the researcher underwent.

Learning from Research Advisors

Information and experience from the fieldwork was presented to the research advisors in order to learn more from different points of view. Improvement of the initial information helped the researcher learn about both the strong and weak points of the work. Most of the comments from all advisors have been integrated into Chapter VI, Conclusions and Recommendations.

Qualitative Research Methodology

This study aimed to assess the effectiveness of the two proposed tools within the complex context of the village. Due to the possible complexity of the situation in this study, the qualitative methodology was applied. The flexibility and variety of research tools suggested by qualitative methodology provided a wide framework for the researcher to understand the subject matters, the participatory methodology and the community.

The introduction chapter of "*A Field Manual on Selected Qualitative Research Methods*" states that

The current challenge facing researchers in all fields of human sciences is how to make valid sense out of each person and his group's way of life in the light of this diversity and complexity. . .

. . . Data are collected in a variety of ways including conversations, participant observation with informal interviewing, in-depth interviews like life histories, and focus group discussions.

Moreover, oftentimes more than one technique is used to expand the quantity and quality of information, as well as to provide a check on its reliability. . . . [this] takes time and patience, which fortunately grow easier to control with increased experience.

(Yoddumnern-Attig, et al., 1991: 2-5)

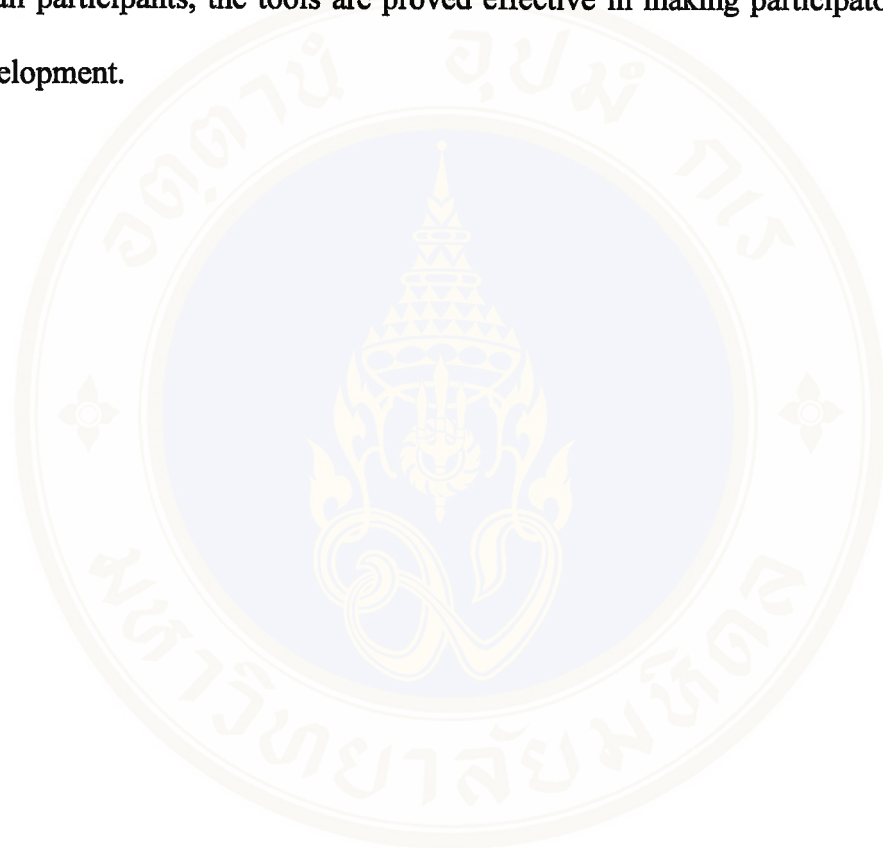
Information from various tools as mentioned in the excerpt above is important in understanding the expected dynamic among participants in both the Mind Map interview and Six Hats meeting(s). The success of qualitative research depends on the quality of information which should be cross checked with a variety of tools. Information from interviews, informal interaction, and direct observation constitutes the triangulation of research tools, which would improve the quality of information.

Researchers who conduct quantitative research rely on SPSS computer program. The Statistical Package for the Social Sciences is designed to process statistical data. To analyze certain data a researcher chooses a set of mathematical techniques which organize and manipulate data for the purpose of answering questions and testing theories. Different research questions call for different statistics. Quantitative researchers choose appropriate tools for specific purpose. Data in quantitative research is in the form of numbers.

In the process of learning about a community, qualitative researchers need different tools. Besides time and patience, some tools are useful, especially those that embrace the knowledge of how the human brain works. In this research such the tools are Mind Mapping and Six Hats Thinking.

The process and product assessment of this research was done in a qualitative manner too. The focus of the assessment is set on observing the direct response from the participants on both 1) interview sessions and 2) on the meetings. The result of the meeting is another indicator of the effectiveness of the proposed tools.

In conclusion, the assessment of this study relies on the use of interviews, informal interaction with the villagers, and direct observation assisted by the application of Mind Map during some interviews. If villagers show active participation and the environmental friendly community development plan is approved by all participants, the tools are proved effective in making participatory community development.



CHAPTER IV

APPLICATION OF THE TWO TECHNIQUES

This chapter presents the results arising from activities undertaken to learn the effectiveness of the proposed participatory planning methodologies for community development. The presentation of this chapter is divided into five sections,

- some information about the village
- the familiarization
- gaining an understanding on the community
- the use of Mind Map with interviews
- the introduction of Six Hats meeting to villagers.

Some Information about the Village

The village is near Huai Kha Khaeng Wildlife Sanctuary. This forest is in the list of the World's Natural Heritage sites recognized as exhibiting outstanding universal value. Huai Kha Khaeng Wildlife Sanctuary

stretch[es] over more than 600,000 hectares along the Myanmar border, the sanctuary, which is relatively intact, contains examples of almost all the forest types of continental South-East Asia. It is home to a very diverse array of animals, including 77% of the large mammals (especially elephants and tigers), 50% of the large birds and 33% of the land vertebrates to be found in this region.

(World Heritage Information Network, 1997 [Online].)

This protected area's conservation value can be described as follows

Huai Kha Khaeng Wildlife Sanctuary is one of the most outstanding conservation areas in mainland South-east Asia on account of its largely undisturbed primeval forest (Anon., 1984). It contains one of the last important areas of lowland riverine forest remaining in Thailand, which supports the last viable populations of several riparian bird species in the country. These include green peafowl, lesser fishing eagle, red-headed vulture and crested kingfisher. It is also the most important area in Thailand for Banteng and, together with Thung Yai Wildlife Sanctuary, for gaur. The combined area may be the only conservation area in Thailand large enough to offer long-term prospects for the survival of many large mammal species (Brockelman, 1987). The justification for the inscription of the Thung Yai-Huai Kha Khaeng Sanctuary complex (ONEB, 1990) argues that the site is biogeographically unique, capable of sustaining flora and fauna indefinitely, of exceptional natural beauty and scientific value, and includes very high biological diversity.

(World Conservation Monitoring Center, 1991, [Online].)

However, the integrity of this forest is far from secure.

Poaching is a persistent problem, but agricultural development, logging and dam projects to the east and south are facilitating access. The construction of the Thap Salao Dam to the east has resulted in deforestation of much of the buffer zone.

(World Conservation Monitoring Center, 1991, *ibid.*)

In the past people were moved out of Huay Kha Khaeng Wildlife Sanctuary ... There are no longer any hill-tribe villages within the sanctuary. Some Karen villages were relocated in about 1976 from the southernmost area to the south-east in Ban Rai District. The one Hmong village in the west was relocated in 1986 (B.J. Stewart-Cox, pers. comm.). Thai villages have recently been established in the proposed buffer zone, and it is hoped that they will be relocated in due course (ONEB, 1990).

(World Conservation Monitoring Center, *ibid.*)

The reason of the resettlement of people in Huay Kha Khaeng Wildlife Sanctuary is to secure the area.

The village of this study is a small village which is adjacent to Huay Kha Khaeng Wildlife Sanctuary. Green Mountain Village is located six kilometers from the main road. According to a short visit by the researcher in 1996, the track to the village is narrow and rough. Villagers said that the soil is worse than in the past. The increasing amount of fertilizer used by villagers is an indicator of decreasing soil fertility. Lack of water during the dry season is common.

There are 80 families in the community. The total population is about 500. Half of the community members are children. There are about the same amount of males and females in the village. Villagers are from different provinces including the north and northeastern provinces. Some villagers have lived here for more than 20 years. Big mangoes and coconut trees indicate the fact as they are grown by the time the first group of people came in the area. People do not legally own the land.

Almost all of villagers grow maize. There are a few people who occasionally gather forest products. The number of these wild product gatherers decreases as farm work becomes more intensive and government officials are more active in protecting the wildlife sanctuary. Further information was obtained during the familiarization period and is elaborated in the next section.

The Familiarization Period

Early visits to the village enabled the villagers and the researcher to get acquainted. I decided to stay at the temple in order to get sufficient involvement and sufficient privacy for field note study. During this period of two weeks (*three five-to-seven-day-long visits*) I learned about the community using functionalist theory guideline. The theory suggests that the effectiveness of any society in coping with difficulties and making progress depends on the functioning of its social institutions.

I took information of the social institutions as a structure for organising information. Information from the familiarization period was pooled with that from the fieldwork carried out later.

This section portrays the condition of each social institution. In order to make a concise presentation, information about social institutions, both from early and later fieldwork is combined to present the reader with a comprehensive view of the community.

1.1 The Temple

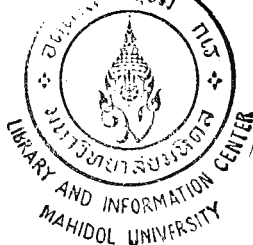
This temple was in fact not approved by the Thai religious authorities and legally was not a temple, but the function of it as a temple was clear. There was a central meeting building made of wood, a "*Sala*", with a Buddha image and various religious ceremonial artifacts. The villagers referred to it as a temple, so did I.

At the beginning of this study there was one monk living in a concrete shelter at the back of the *Sala*.

The *Sala* served the community as a meeting place. Located next to the main entrance of the village, this building without walls was a good place for me to observe the life of this community. This cool *Sala* was my working place when I organized my field notes daily.

The temple was not well taken care of. There were plastic bags, bottles, cigarette filters, broken glass, and other garbage all around in the temple yard. Chickens took a separate section of the *Sala*, which was used for keeping utensils and loud speakers for social gatherings, as their shelter and nest. Even the sacred altar was messy and filled with burnt incenses and melted candles. Insects ate religious books stored in a wooden closet.

I familiarized myself with the temple by cleaning the whole temple peacefully. Collecting garbage, sweeping the yard, cleaning the altar, I served the temple and made myself at home.



I went into the residential areas of the village with the monk almost every morning to receive people's offering. This was a good self-introduction to villagers. Every morning, there were about twenty families offering food for the monk. The food people offered to the monk reflected villagers' food consumption habits and their background. Many families offered Central Thai food while some of them offered Northeastern style foods such as fermented fish.

Later interviews pointed out that many families had moved from the Northeastern region. The relatively low participation rate in religious activities was confirmed by the number of villagers appearing on Buddhist holy days. Religious events that linked villagers with the temple was rare. There were old decorative paper flags at the temple and the chalkboard listing names of donators showed that the last celebration occurred five years before 1999, when this study was done.

As I introduced myself to villagers as a visitor living at the temple, I learned about the physical and cultural structure of the village. More details are elaborated in the next section on the understanding about the community.

The signs of support provided for the temple were the new three-room concrete building for monks and the water system including a concrete tank on a hill and a motorized water pump.

On my third visit another old monk who was a villager, had joined the temple. He was more active than the young monk in restoring the temple. He cleared the land, planted trees and initiated a project to construct another temple building. While the young monk often stayed in his cell and showed a strong interest in reading, the old monk worked in the sun to make the temple a better place to visit.

There were only approximately thirty villagers participating the Buddhist holy days. They often sat in clusters and kept a distance between their loose groups. I did not observe any conflict among people there but their interaction was relatively loose considering that they were in rural communities.

Interviews and informal talks with villagers indicated the weak function of the temple for the life of this village. The temple was a warehouse for community property especially loud speakers and sound system equipment and a meeting place when a community task was assigned by government sector such as at election times.

There were two persons who were addressed by villagers as “the mad” who often dropped by the temple for food and sometimes helped in religious ceremonies and other tasks assigned by the monk like digging away tree stumps, building a dike, or cutting down trees. One of them even helped in the preparation of a sacred altar before the ritual on a Buddhist holy day. One of these two insane persons was the son of a family in the village and the other had his family in Angthong province. Both of them often got drunk.

Less than ten times I saw the monk hold discussions with villagers on religious matters. The young monk mostly talked with the children but was almost all the time a good listener when villagers came by.

To conclude, the temple had relatively limited role on the life of the village.

It was a

- monk's shelter
- meeting place
- storage space for various equipment as loud speakers, amplifiers, tools, etc.

Clearly, as a representative of a religious institution, the monks and the temple did not establish a significantly strong relationship to make changes in the village.

1.2 The Families

The oldest families had lived in the village for more than thirty years. Some of them thought of the village as their second home while for some this is their only place to stay.

There were both extended and nuclear families in the village in rather equal numbers. Young children went to study outside the village during the day. Some old people in the village had their own homes somewhere else and came to live with their children occasionally. All together there were 211 adults and 400 children in the village.

Most people grew corn for their living. Only a few cultivated limes, or engaged themselves in diversified farming, and cattle raising. Both external and internal agents supported corn production in the village.

Villagers bought seed, fertilizer, and herbicide from the district market. The market grew well over the year this study was done. Merchants competed in promoting corn growing, which lured villagers to adopt the mono cropping of corn.

The internal support for maize growing was provided in the form of transportation by the village headman and his family. The six-wheel truck was kept very busy during harvesting time. During my seventh visit the headman had bought a secondhand bulldozer. Villagers could hire this machine to clear and grade pieces of land which were not accessible by the small driver-operated machines normally used.

Most families owned small multipurpose machines that worked as a plow and a truck. Motorcycles were common, especially among teenagers. Some days in the village, there were only a few people walking by on the dirt road stretching through the village as villagers mostly traveled on their private motorized vehicles.

Many families in the village had their original residence in the Central and Northeastern region. Their language, music on radio, and their food reflected these people's hometowns. Interviews and informal talk showed that many families had moved from the Upper Central region such as Nakorn Sawan and Northeastern provinces nearby such as Nakorn Ratchaseema.

During the dry season some villagers went to work in Bangkok as construction laborers. During an interview with one family a man came on his motorcycle to ask whether anyone in the family would like to join a construction team to work in Bangkok. The father of the family who was talking with me told me about the unpleasant condition at construction sites. He refused the invitation.

As I visited the community many times during the one-year period, I often missed some villagers who went to work somewhere else.

Some villagers also used their motorized plows to prepare plantations in other neighboring communities. Nakorn Sawan was a popular work site for villagers.

Most houses were built with thin pieces of wood. The ground area was open and used to store farming items. These houses were mostly old and rather in bad shape. New houses, especially those built for just-married couples, were one-storey houses built on the ground and made of concrete blocks.

Families were rather introverted even after many visits. They did not talk much about things. Villagers who had better economic status often had more to say. The interrelationship between families was rather loose and this is elaborated on in section 2, The Understanding on the Community.

1.3 Government

A few years ago, the villagers were afraid of being resettled by the government. Villagers lived in a state of uncertainty about whether their settlement was legally approved or not. The status of the community before 1999 was shaky, leaving villagers in fear and mistrustful of authority. They said that during the time, there were officials coming in the village to talk about resettlement that put heavy pressure on community members.

After a long waiting time, the government issued rights over the land for many people in this village. This was a major legal act that changed the village. Farming activities became more active than before, including the utilization of dead tree standing around in the village. The influence of the government on the village was most visible at that time.

Now the government has allowed the community to settle legally. In 1999, the village was approved to be a community in the governmental list.

Before 1999, the village headman in charge was not a community member. He was taking care of other communities and assigned to include this community as an extra part of his authority. Government services were not available. Even health officials hardly came to the village.

The rights over land was confirmed by the election of a member of the Organization of Sub-district Administration which took place during 1999. The legal event took place as an indicator of government acceptance of the village's existence in the area.

A village committee was set up but was not effective enough to cultivate a positive change in the community. Interviews with different community's members including the village headman and his villagers, and informal talks revealed conflict among groups in the village, which was fostered by the election.

Groups in connection with the village headman, and with the health volunteer, and with an independent candidate competed to win the people's votes. They provided free foods and drinks for villagers to win popularity. The tradition was accepted as normal among villagers. They said that it was fair to help and to be well taken care of.

The power of government was effective in various cases. Once the agricultural office at the district level provided fruit tree seedlings for free, the farm trucks were on the road and came back with many little trees for establishing fruit plantations. The villagers showed their willingness to accept help from the government.

The Ministry of Public Health provided roofed nine-tank water storage for the community. A piece of land was donated for the storage and dozen of villagers were employed to build it. The project was welcomed as well as the seedling distribution.

The government did not govern most of life's activities but any government support was welcomed.

It was possible that more construction projects would enter the community as the law had accepted the existence of this community. The authority of government officials is respected. Villagers treated them as bosses during the election. They were super polite when officials showed up in the village.

1.4 Economy

The economy of the village is based on agriculture. People earn their living from the production of corn. They buy seeds and other chemical products for their farms from a district central market. After the harvest, corn production from farms is sent to merchants in the same market. The corn production is sent to big factories.

The competition to manipulate people's farms for corn production was aggressive and various media were used such as posters, bill boards, printed advertising posted on trunks of big trees along the way to the market, in big groceries, and agricultural product stores. Some seed companies guaranteed farmers profits by proposing written contract to buy all the products.

The income of people in the community depended on the price of corn set by the companies that both sell the seed and buy the products.

The villagers had to buy seed every planting season as the corn was genetically manipulated to provide one crop only. Some farmers kept the seed for replanting and found the second-generation product failed to meet the standard.

The village's economy was money based. The two groceries sold gasoline for farm machines, condiments for the family's kitchen, sweets for children, and white whiskey.

Community members employed extra labor to prepare their land before the planting season. The village headman, the health volunteer, and an owner of a pick up truck had their individual village level small businesses. The transportation of corn production, students, and villagers to go to the market were good profit making endeavors. A new service in 1999 was a land clearing service provided by the village headman and his big blue bulldozer.

A family's consumption depended on the only two groceries in the village. Fish sauce, garlic, and liquor were best selling items in the village besides gasoline.

The amount of liquor sold in the village was an interesting phenomenon and is elaborated on in connection with surrounding factors in the section on the understanding of the community.

There was one family that tried to lead a self-sufficient life and the attempt was unconvincing for other villagers. The family avoided excessive expenses by using limited electronic appliances. They had an integrated farm focusing on vegetable and fruit trees. Besides the work in their farm this family sold their products at the district central market once in a while and accepted any farm employment in the neighborhood district as well.

There was one family engaging in livestock raising. The owner of the cattle stock gained a relatively high income from his expertise and business connections. They had life insurance made with a famous assurance company.

A family with a lime orchard had previously been a family of some wealth but without cooperation among family members, their fortune declined despite having good land and a good product.

Families had their own water wells. Some of them had television sets and radios powered by batteries. They paid ten Baht a time for a battery charging service. Private entertainment was available on screen and through radio stations. Boxing matches, concert, soap opera, news were favorite programs.

In conclusion, the economy was based on money from growing corn. The economic system of the village was more directly connected to the central market in-town than to the local community.

Business endeavors in the villages were mostly related to transportation, farm products, students, and trips to the district central market.

In the past villagers often collected bamboo shoots and wild mushrooms to supplement their extra incomes. This work consumed a lot of energy and the rewards were not always reliable. Community members often went into the forest for the forest products only when their work in the farm plot was done. When a barbed wire was setup to make a clear boundary between the village and the wildlife sanctuary, villagers stopped these activities completely.

Along with the barbed wire measure, the bamboo shoot factory decreased its demand for bamboo shoot as part of a government regulation to reduce forest encroachment which might disturb the delicate wildlife in the protected area.

At the time of the study, the forest was another world disconnected from the village with the barbed wire. It was not a market place or treasure-trove anymore. It was thought that any sensitive issue concerning the forest might take away their legal right to settle in the area.

1.5 Education

The only primary school was not well taken care of. Books were piled up untidily in a space separated from the classroom with broken pieces of particleboard. The classroom was messy with rotten pieces of poster on dusty walls. Even the chalkboards were worn-out. The water system for the school did not function properly. The number of students in the school was decreasing.

Till mid 1999, there were less than twenty students in the school. The only teacher had to take care of all the twenty students in different grades by himself. He had a limited role in the village.

Most of the students in the village went to study at a school outside the village on the way to the central district market. The school was much bigger than the one in the village and provided both primary and secondary education. The preference for this school located about ten kilometers away was supported by the affordability of motorcycles and the availability of a “school pick up truck” service run by a local villager.

There was a day care center in the village. The caretakers were two mothers in the village employed out of a government budget. There were about ten children in the center. One caretaker took this job because she did not have breast milk for her baby and needed to earn money for powdered milk. Because of this, her husband had to work as a ranger for the wildlife sanctuary.

The role of formal education from a villagers' point of view was to promote their children to gain a higher quality of life by getting higher education. Many families sent their children to study in town with relatives.

The school in the village was only for those who could not send their children to the school by the main road outside the village. Its physical condition and function were extremely limited.

2. The Understanding on the Community

This section is the synthesis of information on the community. The village was the context of the experiment to test the effectiveness of Mind Map and Six Hats meeting in participatory community planning.

The synthesis was done both during and after the fieldwork. At first these pieces of information were only words and scratches on pieces of paper. They were retrieved by the use of interviews, informal interaction with villagers, direct observation, and Mind Map interviews. Things came together as I learned more and more about the community.

In general, the organization of the people in this village was relatively loose. For example, villagers used their facilities as farm trucks, water wells, and farm plots with little cooperation. And when the work in their farm overwhelmed them, they hired others.

2.1 People

Though villagers were relatively less friendly compared to other rural communities I have experienced, most of them were willing to talk with me. The monk gave me permission to stay in a monk's cell. Food offered to the monk was my meals. They invited me to dinners. Some came by to talk with me as they thought I might be lonely. When I helped them build their community water tanks, they complimented me and expressed their gratitude.

These people told me about their lives. I learned that the soil preparation before corn growing required five plowing sessions. Those who had plantations close to the hill had to fight with wild boars.

An old man told me about his hometown in Angthong and his experience in this village since the fresh ground was still fertile. The village headman shared his dream to make a trail around the village for those visitors who want to stay in the village for vacation. The old monk taught me about trees. He said that trees needed exercises and moving in the wind was good for them. The health volunteer offered me a ride to the district market and told me about his grilled chicken stand in-town.

Interviews and informal talks with community members indicated that land was the most important incentive for them to stay in the village. As the government approved the land possession for plantations, villagers had strong connections with their piece of land. Other incentives were friends, fresh air, and their plantations.

I experienced the hospitality of the villagers and was grateful for their acts of kindness. The next topic (2.2) elaborates on some social defects observed and revealed through interviews. Although many of them were negative comments, I want to make clear that these comments are only the partial information and are stated in order to provide descriptive comments for further constructive comment. They are “not” the acts of labeling community’s members as “immoral” or “wrong”.

The conflicts among these people in the topic 2.2 are pointed out for objective perception not as judgmental reflections.

2.2 Passive Social Institutions

To some extent the limited positive movement in the village results from the limited role of different social institutions. As mentioned in the earlier section on familiarization, different social institutions failed to promote changes in the community. Certain institutions had their own limitations.

The young monk had limited interaction with the villagers. Community members said that he spent most of the time in his cell. The monk read a lot and reserved his judgement on what was going on in the village. He was about thirty years old and had been a monk since 1997. His hometown was in Nakorn Sawan.

The old monk was about seventy years old and was in the temple for less than three months. The monk was a layperson in this village, as a result he decided to make the village a better community. The mission was just beginning. He was planning to construct a building for food preparation for community gatherings.

A few years ago, there was another monk who misbehaved, got drunk and boasted about his ability to manipulate supernatural powers. The negative reputation of the temple limited the possibility of the religious institution to foster people's cooperation in making a better community. Once a group of villagers gathered in the temple to drink.

As mentioned before, school and governmental organizations of the village were relatively ineffective in developing the community's self-sufficiency. From this perspective, they were not actually well functioning institutions. Villagers had alternatives. They had social institutions somewhere else that met their needs.

Governmental projects that provide material were accepted but these efforts influenced the village only once in a while and did not promote people's participation for deliberative community development. They provided material not skills for community development.

The community members sent their children to the bigger school with more teachers and better educational facilities. As transportation was more convenient, most students in the village went to a better school outside. Little children went to school and back in pick-up truck while many older students had motorcycles.

During interviews and informal talks villagers rarely showed any points concerning the function of the temple.

Social gatherings were relatively infrequent. There was an organization of people in the village, trying to initiate better living conditions, when people heard of the threat of the resettlement. Villagers said that they grouped together and decided to go to Bangkok to ask for help from Her Majesty the Queen. They did not want to live in the area prepared by the government, as it was only rocky, and dry land.

The effort to ask help from Her Majesty was not completed as government officials came in and negotiated with the villagers. Finally, they received permission to stay in this village. Many of them mentioned this movement that kept them together in this piece of land.

Another example of cooperation was the village's efforts which involved a member of the Organization of Sub-district Administration and many community members. It turned out that a group of people who proposed to help villagers getting over government red tape cheated them. There were many social conflicts due to the cheating. Details of the movement are stated under topic 2.5, The External Negative Action on the Community.

The bodies of authority in the village were the village headman and the health volunteer. In the past the father of the family with a diversified farm was another active key person. But his aggressive working style and the cheating episode in the village a couple years before the study made him stay away from the village.

Both the village headman and the health volunteer have their own business in the village. They each run a transportation service. The village headman and his family provides an agricultural product transportation service with a six-wheel truck, while the health volunteer has a weekly pick up truck service to the market in-town for villagers. Both of them have a strong influence on the community. The health volunteer became a member of the Sub-district Administration Committee and has more authority in development initiation.

During my last visit, the headman said that the village should be developed into a beautiful tourist attraction. The newly elected member of Sub-district Administration Committee was thinking about improving the road to the village. However, their initiatives were the individual decisions of traditional leaders.

During the election for a member of the Organization of Sub-district Administration, conflicts were clearly visible. I went to a daytime drinking gathering provided to gain votes from villagers and got a negative report on the health volunteer who ran for election. They said that the health volunteer spent his time on his business and could not work for the village.

An assistant of the village headman was another candidate. He owned a grocery but did not give a vote-gaining party. He was sorry that the headman did not support his election. His comment on the vote buying in the village revealed conflicts among groups in the village. He pointed out that other candidates bought votes and used about ten thousand Baht to get elected. His point was that it was not worth it as the member of the Sub-district Administrative Committee got few benefits. He also said that the health volunteer had too many businesses and could not work for the community.

There was not only conflict among local political groups but also clashes between individuals and families. The villager who tried to live on the integrated farm was mentioned as being 'weird'. An old man who was among those to settle here thirty years ago said that the effort to make such agriculture was prone to fail. He was sure that integrated farm would not generate sufficient income for the farmer and mentioned the debt of the farmer. They were sometimes friends and sometimes not.

Issues of dislike often popped up during informal talk with villagers. The more I got acquainted with villagers, the more cases of conflicts were revealed. Even some family members had conflicts. An older sister attacked her younger brother with a long knife and the fight was reported around.

The cattle wandering around ate up corn in the field and caused quarrel among neighbors, even among relatives.

These conflicts kept villagers separate from one another. Individuals did not get together to make positive changes. Most of them preferred quiet living and spent most of their time behind their fences even though their neighbor was working just a few meters away. In most rural areas, this is an opportunity for neighbors to socialize.

One major form of recreation was drinking. White whiskey was one of the best selling items in the village. Spending a moment at the groceries in the village, one might see villagers dropping by to buy white whiskey. Taking a walk in the village, one would easily see a white whiskey bottle in a plastic bag with other common form of item as garlic, fish sauce, etc. bought from the grocery.

Drinking gatherings were a common entertainment for villagers and the rangers employed by the wildlife sanctuary. There were some places in the village that the drunk often used as a meeting place. Meeting places were often a house.

Some people got drunk almost all the time, including the owner of the lime orchard and his son, the old man who was a monk in the village, a village headman assistant, and the two insane men who often worked for the monk. The overall destructive effect of alcohol was not probed but at least a family that was well established in the past was suffering from father and son not spending their time and energy on farm work as they did in the past. They often got drunk after the death of the old man's wife. Drinking shook the stability of the community at the basic foundation, the family.

Social institutions in the community had limited roles. But there were other institutions, other schools, other temples, and other market place outside their village that villagers could rely on. Some villagers visited their relatives when they had problems with their neighbors. In a way this village was their residence but not their society.

2.3 The Connection between the Community and the Community outside

While social institutions in the village were weak, the community outside provided attractive incentives in the form of opportunities to earn money, healthcare, and education services.

The organization of community members was not perceived as crucial because villagers could make use of the market and school outside the village for their economy and their children's education.

As mentioned in the previous section (2.2 *Passive Social Institutions*) one could see that villagers in the community could survive without village collaboration. Their collaboration was thus extremely limited.

School pick-up service, groceries, weekly trip to the market, and agricultural product transportation businesses were provided not by villagers as a team but by individuals for profit.

Looking at the whole picture, one would see that direct transactions between individuals and the economy outside were stronger than any mutual inter-relationship among villagers. Villagers' agricultural career relied heavily on the buying and selling with the business sector in the central market, outside the village. This effectively governed their lives.

Besides income generation, recreation was dominated by individual entertainment in the form of television sets and radios. Music, boxing programs, and other broadcast commercial shows provided the community members with leisure opportunities.

The district market commanded villagers' economic life while nationwide entertainment programs kept them happy individually.

2.4 An External Negative Action

Another villagers' effort to improve their quality of life was the quest for a connection to the electricity grid. The movement was a cause of internal conflicts among groups of people in the village. The following information is based on interviews and informal talks with villagers.

In 1998, a large group of visitors came to the village. The head of the group lied that he was related to the royal family. His people mentioned to villagers that it was possible, with his help, to overcome the red tape in the government and get electricity for all villagers. Some people in the group said that the operation would cause some expense.

The owner of a grocery who was related in a minor way to the head of the group asked villagers for money to support the man for his help in this community project. The member of the Sub-district Administrative Committee at that time joined the project and argued aggressively with those who disagreed, including the village headman. Some villagers thought that this group was dishonest and went to inform the police.

The villagers broke into two groups at that time. The member of the Sub-district Administrative Committee also informed the police saying the villagers were making false accusations to the police.

Eventually the cheating was revealed. The member of the Sub-district Administrative Committee was charged and escaped for a year along with the owner of the grocery. There was no electricity and no Sub-district Administrative Committee member. The cheating episode ruined the hopes of villagers and made them unwilling to trust others in the village.

Collaboration among villagers was now almost impossible due to the deep divisions created in the community by this episode.

Most villagers preferred to concentrate on their own individual lives.

Informal talks on about conflicts in the village often lasted longer than that on cooperation among villagers. Most community members talked about conflicts of other groups. Villagers talked about conflicts among community leaders. Village headman talked about villagers' conflicts.

The community was a shelter of people from different origins. Villagers worked to survive with limited involvement with others. Life was better after the approval of their right to survive on these pieces of land cut off from the wildlife sanctuary. Conflicts among groups and people and weak social institutions were the context of the participatory methodology for community development and as we will see influenced the outcome of the research work.

2.5 Relationship between the Village and the Forest

After the government approved the village settlement a clear boundary was indicated to make sure that the community would not expand into the protected area.

As bamboo shoot industries were banned as a part of the forest protection program, villagers who did not enter the forest to search for bamboo shoots any more concentrated on farming and some engaged in various supplementary occupations.

Two old people who were hunters were employed as farm laborers. The only man who collected wild fruit for sale died. Community members were busy with their farm plots. Their land could now be utilized to full potential as they had gained right over the land. There was now no fear of resettlement.

Many villagers said that they had to take care of their land and their living well to keep the village here. If they destroyed the forest, their right to live in this area may be taken from them.

The forest was set apart from the village completely with barbed wire. Villagers agreed with the separation as it gave them the plantation and for some villagers they worked for the government in protecting the wildlife sanctuary.

3. The Interview Using Mind Map

Traditional interviews rely on verbal records. Interviewers take notes during their conversations with interviewees. Sometimes they make maps, crop calendars, family trees, etc. as a part of their investigation. These visual tools help organize information and make it more comprehensible for interviewees. This research proposes another tool as a supplement for those research tools.

Instead of writing information in a notebook, I tried using bigger sheets of paper to draw out narrated information during interviews. The focuses of conversation were the social institutions, the incentive and disincentives for living in the community, and the relationship between villagers and their natural environment. Information from these interviews was presented in the previous section, The Understanding of the Community (1) and some parts of the Familiarization (2). The lessons learnt about the application of Mind Map are as follows.

3.1 Introducing the Drawing to Keep Records

After the first three visits of familiarization, I began keeping a record during interviews to learn more about the community.

The fourth, fifth, and sixth field trips were dedicated to learn the effectiveness of Mind Map during interviews. Eleven drawing interviews (*using Mind Map as a part of conversation*) were conducted. All of them began with an ordinary conversation.

I had a normal conversation with respondents first before the Mind Map making session. About half of them were interviewed individually more than once. If the respondent showed a willingness to have a long conversation, I asked for permission to keep a record then I took a big notebook (33 X 42 cm.) and start drawing as described earlier in chapter two.

I did not formally explain the reasons for using drawing and keywords instead of normal note taking, but told them that it was more fun to do it that way. This was to keep our conversation being too academic. To make it a small deal, I chose cheap materials. The paper in the notebook was unbleached and instead of a pen I used cheap pencils to make the recording more casual.

Most villagers responded to the introduction of the drawing interview positively. They looked at the rough drawings curiously. For most interviewees, after a while the drawing was a familiar activity.

Examples of Mind Map made during the fieldwork are attached in the Appendix.

3.2 During the Interview

The drawing interviews made interviews more interesting, and after a while it became normal. The drawing did not attempt to capture everything in the conversation. There were times that our conversation went fast and drawing everything obstructed the continuity of the conversation. Every interview gave lessons. The following section provides information on the application of Mind Map to support interviews in the village.

3.2.1 On Material

A big sheet of paper was used to record information. The size of paper and media to write and draw on was important.

Drawing took more space than traditional note taking. The word 'house' occupied an area for four letters while the roughest drawing may be as big as person's palm. To put many pictures together in one place, it was decided to use unbleached sketch paper which was about twice the size of A4 paper.

Using this paper for sketching was very convenient and cheap. In addition, unbleached sketch paper gave an unofficial look to the Mind Map emphasizing the informal nature of the interview.

There were some problems regarding materials. Pencil drawing on unbleached paper was not as clear as using a felt-tip pen. And the monotone drawing was more difficult to manage when there were many things on paper. As more things were recorded, the big picture became more complicated and sometimes confusing. The use of colors helped.

Using colorful crayons for better information management was effective but a large number of them made the session too messy. Using many magic markers to keep information under different subtopics gave the same complexity.

An appropriate solution was the use of some colors only, four or five normal magic markers.

Keeping the equipment simple was better than adding an excess of them that might distract the flow of information.

3.2.2 Mind Map and Track Keeping

Mind Map making during interviews helped me keep track of the conversation. According to the research design, the content of the conversation was divided into three parts; social institutions, incentives and disincentives for staying in the village, and relationship between the forest and the community. Sometimes, these issues led to related issues.

As the aim of the research was also to understand people's perception of their own community situation, the unexpected information was important for developing a wider understanding of the community. After expanding of the topic in this way, the drawing helped me refer to unfinished matters. For example, when the talk on a respondent's farm shifted to a discussion about local conflicts and this new topic was followed, the drawing helped reminding the respondent about the unfinished topic. I only needed to refer to the unfinished drawing and mention briefly about the farm, and the almost forgotten topic was quickly revived.

I learned during some cases that the drawing should not be the main focus of the conversation. When I tried to make perfect drawing for all information, I felt tense and got stuck. The solution was stated in the next topic, as it was an important suggestion for the use of drawings during conversation.

3.2.3 Illustrating

During my early experience, I tried to draw all the narrated data in the Mind Map. The conversation was changed into a listening-drawing session. I spent most of the time with my paper instead of my informant. I lost eye contact and did not see the respondent's body language. I was more like drawing comic strips or animation cartooning than gathering information and getting to know my respondent.

After the ineffective drawing session, I changed the way I drew information on paper. In stead of drawing everything, I drew key actor, action, and finally concept.

Drawing object, people, animals, trees, mountain, etc. was easy. Drawing their actions was more difficult but the most difficult part during drawing session was the visualization of the concept. Drawing skills was not a serious problem as pictures were drawn in the context, just rough lines was enough to visualize objects. Some interviewer might feel the inability to draw but drawing is like other skills, the more we practice the more we can accomplish.

I had difficult time visualizing *'People from different hometowns did not interact much'* or *'Village headman had too many responsibilities to work for the village'*. These kinds of issues contained abstract messages. To visualize abstract concept as *'conflicts'* or *'responsibility'*, words helped.

One way to do that was to draw pictures of subject in the sentence and write some word to explain the concept. The technique of using a combination of pictures and words was not new.

In fact it was explained and illustrated in books I had read during my literature review. But it was only during the fieldwork, that I realized the nature of such a combination.

Drawing of any place or area referred to by the respondents made discussion more effective. Instead of giving a long complicated verbal explanation over and over again, pointing to a picture was easier and less confusing. For instance, some villagers grow different plants in their plantation, using hand drawing map, even a roughly drawn map, facilitated the straightforward location of things in and around the villagers' farm.

It proved easier to draw only key objects, actions, and concepts during the interviews. In this way the drawing-plus-words record was more manageable and kept the conversation flowing.

3.2.4 The Length of the Session

In this study, drawing the Mind Map combined with the interview was one of the tools for learning about the community. This tool was dedicated to getting information on social institutions, incentives and disincentive of living in the community, and relationship between the community and their natural environment.

Early Mind Map sessions, especially when I visualized every piece of information, tended to be problematic and exhausting and I often felt I was concentrating more on the drawing than on what the respondent was saying.

I felt I missed things and even gave the impression that I was more interested in my drawing than in the respondent. It looked like I was making the respondent doubt my interest in what respondent had to say. I missed eye contact and opportunity to observe respondent's body language.

When I drew only key items and concepts, the interview was simpler and more effective in getting expected information. The length of the drawing session to cover only these three topics was reduced to about thirty to forty minutes from more than an hour when drawing everything.

Information gathering was often followed by informal conversation about things of interest to the informant. Sometimes it focussed on their children, their future, or their plantation. The total conversation, the greeting, the drawing-talking session, and informal talk often took from ninety minutes to two hours.

3.3 Hand Gestures and Visual Language

During fieldwork, various types of interaction could be 'mined' for information gathering. It was not until the last two visits that I noticed that in fact people tried to communicate visually much of the time. Visual language was embedded in almost every natural interaction, especially in the form of hand gestures, which is a kind of "drawing in the air".

The observation on the natural ability to communicate visually was triggered by an informal talk with an assistant to the village headman. I visited him and talked about the development of the village, especially on agriculture.

We talked and took a walk to the charcoal pit, in which he buried wood under a big pile of slowly burning rice husks. We sat on the ground and talked about grapevines. The man picked up pieces of wood from the ground and started forming lines of vines as he expressed his plan to change his corn plantation into a vineyard for more stable and sustainable income. He did that unintentionally. I thought that he would use the lines to explain in details about his plan but the man just said that he would go to buy young vines first. He pointed at the line of pieces of wood on the ground and said that they would cost thousands of Baht.

I was quite interested in his manner but did not get a clear idea about the '*natural diagram*' on the ground. We talked for a while and went back to the temple. The arrangement of pieces of wood reminded me of other natural things people do during normal interaction that reflected their need to communicate visually. Surprisingly, every move of our hands was the desire to make pictures a part of our communication.

Following this observation, my perception on individuals' hand gesture changed. I saw individuals making invisible drawing with hands, fingers, arms, and, in some occasion, with body.

In addition, the observation took me back to the time I talked with villagers at a grocery and their use of bottle caps to explain how the big cheating episode happened.

The assumption that in fact people were all trying to make visual communication encouraged me to learn more about using visualization to make better participatory planning. I felt more and more it was a natural form of communication, whatever one's level of education.

The differences between plain talk without visual elements and conversation with visual aids were observed. Visualization made complexity more comprehensible. The effectiveness of drawing in thinking helped me during the data analysis for this study as well.

3.4 Mind Map and Information Analysis

Getting a lot of information from the community was an expected output. As mentioned in an earlier chapter on the literature review, the Mind Map should be helpful in manipulating lots of information.

After fieldwork, I put all information on a newsprint-sized piece of paper in order to see the big picture. From this master map of information, I pondered on the study with the aim to learn about the effectiveness of the proposed tools, Mind Map and Six Hats thinking in the light of the village's context.

It helped as all the information from field notes and related issues were visible all the time on the big sheet of paper.

The visualized information helped me see the inter-relationship between people and things clearly. Because the analysis was done after I obtained more materials on visual thinking, I drew more pictures as a part of information analysis. Visual thinking was effective in identifying related items, which appeared to be disconnected at first.



In conclusion, Mind Mapping facilitated both interviews and information analysis. From events structuring the field work, it was possible that in fact people were trying to communicate visually all the time but the effort is not utilized to its full potential. The potential of the visual communication was illustrated more in the Chapter V, the Discussion.

4. The Introduction to Six Hats Meeting

The attempt to apply Six Hats thinking, a proposed tool for village meeting, confronted major difficulties caused both by the nature of the method, my own limitation in manipulating the method, and social conditions in the village.

Before the fieldwork, the village of the study looked like any other rural community especially physically, the location, appearance of houses, people's way of life. But as the fieldwork went on signs of conflict among villagers and groups, as mentioned earlier in the section on the understanding on the community, suggested that community meetings might not be appropriate at this point.

I ignored the early signs of difficulty in getting the community involved in the participatory community development process because of my positive thinking that the village meeting could help villagers improve their lives. Finally I decided to invite some villagers to participate in a small community meeting.

During the sixth visit I started to introduce Six Hats Thinking to those respondents that appeared interested in doing something to improve their community during one on one conversation and found that it was very difficult to do.

The method was not comprehensible at first due to its abstract quality, my own limitations in persuasion, and because the village during the time of this introduction was not a cooperative community.

I tried to introduce the idea of Six Hats thinking/ meeting to other villagers and could not get the message across well. Seven villagers showed an interest in the idea of village development but their reaction to the method of Six Hats was too weak to suggest a meeting using this technique would be successful..

The direct response was that these informants stated they 'did not understand'. The indirect response was silence and confusion in their facial expressions.

Another rejection was not on the method of Six Thinking Hats itself but on getting villagers together to plan for their own community. Community members were aware of disintegration among themselves and groups in the village. Some villagers refused to attend a village meeting.

I tried two different ways to invite these villagers to a small meeting on village development. In the early introduction to the Six Hats thinking, the significance of the villagers meeting was stated. Later I talked about the potential of the village to be developed then redirected the conversation to the process of a good meeting.

When it came to the introduction of village meeting, respondents showed no enthusiasm. The cause behind their limited interest on the proposed meeting was partly the cheating episode as mentioned in topic 2.3, An External Negative Action.

Villagers pointed out that collaboration was not well established in the village, as a result, a meeting would not be the answer for village development. Community members had conflicts with one another and believed that the lack of a sense of community which existed at that time made participation impossible.

Besides these obstacles, villagers' perception of community development played a significant role as well. After the introduction of community meeting was not accepted, I asked community members about the future of the village and learned that their perception on development could partly account for the unsuccessful introduction of village meetings for participatory development.

Community members believed that development programs were the responsibility of government officials.

Development was road improvement, community loud speaker system, water tank, school, child center, ranger station, and other concrete program initiated and carried out by the government.

Some villagers thought that they should work on their farms and when it was time, the government or other organization would take action to help them. Some villagers thought that their efforts to make changes in the community would only create troubles as once had happened when they tried to get electricity for their community. In that episode they ended up with conflicts among themselves and serious issues in court.

The introduction of the Six Hats meeting was unsuccessful. Probably greater preparation was needed before introducing such a method. The reasons behind the lack of success are important. They are presented in the next Chapter, Discussion.

CHAPTER V

DISCUSSION

This chapter is the outcome of further analysis of the results of the study and related information synthesized together. The results of the study raised some questions for additional investigation especially on the causes of the results. This chapter provides possible reasons behind the effectiveness and limitations of the Mind Map and Six Hats thinking/meeting as tools for participatory planning methodology for community development. This chapter is divided into four sections, one is dedicated to Mind Map, another for Six Hats thinking/meeting, one to Visual Language meeting, and the last part discusses my personal learning as a part of this study.

1. Mind Map and Visual Language Communication

In this study, the Mind Map was an important tool for information gathering and making individual participation in learning about the community. The functions of this visual tool were observed during the study, reported in the previous chapter, and discussed in this chapter in order to understand the mechanism of the tool in making effective participatory planning methodology for community development. Its functions were elaborated as follows.

1.1 Pictorial mapping is interesting and fun.

Visual communication is a natural form of communication. When we see the world and record it in the form of writing, the record represents a limited perspective depending on the reader's concepts. Pictures consist of more open-ended memories.

Drawing a record provides an opportunity for viewers to learn and discuss about something naturally, the way we hold a fruit and start talking about what we are seeing, tasting, smelling, touching, and thinking. Respondents of the interview with Mind Maps were more interested in the topics of interview. The tool helped improve personal interaction. Every respondent enjoyed the drawing-interviewing session. It was acceptable, I believed, partly because Thais like having fun. Working and playing appear not to be strict divisions of time for Thais as all work should have an element of fun.

Cave painting, children's drawing, street signs, and many of our communicative items have proved to be an effective language since early times. The reasons why these visual items are more interesting than written records is the fact that,

- they resemble real objects and
- they activate the right brain.

Larry Raymond, the founder and director of the Visual Language Research Center (1994), invented a method that applied visualization in planning, problem solving, and reengineering. Instead of just verbal discussion he added a flow map of decision making with pictures.

The graphic flow chart was made up of pictures as rivers (representing process), crocodile (representing risk), etc. The chart helped bringing participants together. He mentioned in his book, 'Reinventing Communication' that

An analyst later looked at our (*visualized*) map and made a traditional flow diagram out of it, just to see what it would look like. As you can see, it might be accurate, but it's hard work just to look at it and it sure doesn't get your blood moving."
(Raymond, 1994: 22)

Graphic records add an attractive element to traditional information gathering. An interesting event is likely to increase participation if well applied.

A part of participation is from the fact that drawing requires the participants' 'act of decoding'. Though drawings resemble images of items, they still call for viewers' effort to decode the lines and color. Decoding is a kind of participation. A Graphic designer uses this idea in making their communications work.

...the designer never travels 100% of the way. The idea has to be 'seen' or decoded, and this demands an active recipient. The audience may need to travel only 5% or as much as 40% toward the designer in order to unlock the puzzle and get the idea.

(McAlhone & Stuart, 1996: 19)

A messy look gives a graphic map conveys the impression of flexible, indefinite information to both mapmaker and viewer. Sketches of pictures and messy lines remind the reader of living organisms and ecosystems. They are ready to be reconsidered, added, eliminated, and reformed. The sketch quality of pictorial maps signals continual learning and thinking.

The visual invitation to participation adds charm and stimulates interactivity.

The use of graphics motivates participants to contribute in a visual-assisted session.

1.2 Mind Map provided whole picture of the situation.

Finding the whole picture in a fragmented world has become a defining characteristic of the modern world. Complex and interactive systems such as social, economic, and political movements require lucid and holistic tools, like mapping. Map making is an ideal tool for dealing with complexity. Charles Hampden-Turner in his book *Maps of the Mind*, suggested that

We 'map' with words as well as images but because words come in bits and pieces many people have assumed that the world is in bits and pieces too, with bits corresponding to words. 'Not so,' said Alfred Korzybski, 'the map is not the thing.' Word maps have a fragmentary structure that derives from language itself, not necessarily from what language describes. The idea of linear cause and effect, for example, is inherent in the structure of a sentence, where a subject acts by way of a verb upon an object, but this may be a very inadequate rendering of what is happening, especially of mutual influences. One way to correct this verbal bias is to supplement words with visual maps. If the human mind is to be conceived as a whole as well as parts, we need not just words to convey parts, but pattern, pictures and schemata to convey the whole.

(Hampden-Turner, 1981: 8)

Social institutions; villagers' incentives and disincentives and their utilization of natural resources are interconnected. They are examples of subject matters that require the application of mapping in organizing and synthesizing information.

A pictorial map helped me see the whole picture of the community in which inter-relationships directed the rise and fall of events in the village. These webs of activities were visible and could be confirmed during the information analysis with the help of mapping. Mind Map made during the interviews helped the respondents avoid confusion. Drawing helped simplify confusing questions related to different things such as location, situation, etc.

A comprehensive picture is helpful in making systems more manageable and provides space for additional information, such as remarks or changes. One of the most significant benefits from the flexibility of mapping with pictures is its ability to depict “changes”.

The aim of social investigation before making any development project is to get not only a snapshot of the subject society but also the movement of the community. Mapping provides space for expansion of the whole picture in the form of area, time, action, and actors among the midst of changes. Looking at Mind Map, one could see the opportunity to expand and increase related items in the map by taking space between branches of information or making additional lines in a radiant pattern. Traditional note taking, in words, could not fully support this demand for making “living” information.

While making a map, especially with pictures, the mapmaker could point out relationships between items recorded in the map with the ease as drawing lines of connection and writing the explanation on the line. Different aspects of change can be specifically identified by different color of lines. Lines of relationship are effective in making the recorded information dynamic.

The comprehensive picture is like branches and roots of a tree, the subject matter. The roots are the causes and the branches are the results, which at the same time are causes of other phenomenon, and have mutual relationship to one another as well. The mutual inter-relationship among events and subjects calls for mapping that keeps whole pictures in perspective all the time. As a community is always complex, a pictorial map facilitates the study of the community to retain the complexity and avoid reduction.

During this study, the use of pictures in the community meeting directly was not applied, but the application of drawings may be explored in the future. In planning the comprehensive picture is important, as a result helping community members to gain same perspective would be another contribution of visual language in participatory development.

1.3 Illustrated record supports effective real-time reference.

Instead of restating a topic verbally in order to ask questions on the issue for additional details, drawings provide quick and accurate communication.

During fieldwork, when I would like to know more about the invasion of wild monkeys, instead of addressing the location of the corn plantation to the east about a kilometer from the temple then ask about those monkeys, I pointed to the picture of the land with monkeys around. The verbal reference took about thirty seconds and perhaps was confusing, while pointing at the part in the map made during the discussion took only five seconds before the location was identified. Shorter and more accurate identification supported interviews effectively.

During information analysis, pictorial information reminded me of points to be discussed in this chapter. The master Mind Map with all pieces of information helps me see the pictures of systems in the community clearly before I could start structuring this report. When I read for additional information to add depth to my experience, the map allowed me to mark names of books and their specific information into the main structure, the research design.

Information about roles of temples, schools, bodies of authority, and other issues were visible all through the time I worked. This chapter on discussion is less messy as the process was supported by drawings that kept information manageable.

Issue identification during interviews and information analysis is simpler when a pictorial map is used. The convenience gained from using pictures in making references during interviews was useful for both interviewer and respondents.

1.4 Mind Map triggers information for additional related items.

The triggering effect often happened when information from different sources was pooled, as during daily field notes reviewing and during final information analysis after fieldwork. As the mapping process went on, things that seemed not related showed a definite relationship. For example, transportation business in the village and daycare center might not share a thing in common. But when all information was put in one Mind Map, it suggested that villagers could work together when issues were perceived to have reached crisis point.

They grouped together to go to Bangkok to ask for help before they got land titles. They tried to collect money to pay for getting electricity. They organized a school pick up service so their children could go to a better school. And, they helped in organizing election in the village when government officials assigned this duty to them. The community collaborated when the situation called for their collective efforts. Pictures in the map triggered this observation.

Sometimes the ability of map making to spark off new ideas was caused by the ambiguity of the drawings. Quick sketch was not an exact imitation but only a virtual reminder. We do not need neat picture to support accurate communications and to stimulate participants. Simple drawings work the best. The drawing itself is not the only key to the effectiveness, the process of drawing together with participants guiding the content is another half of the work.

1.5 Drawing and thinking

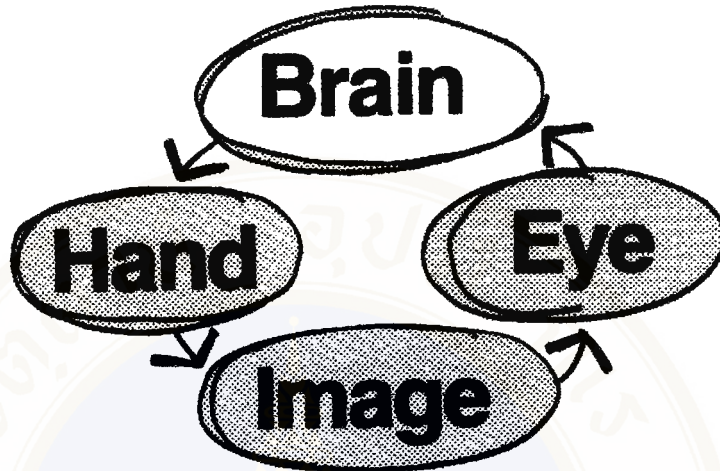
The roles of drawing especially during information gathering, reorganization of information, and information analysis, was significant. Drawing promotes active consideration, which provides insights as a result of information analysis.

Hanks & Belliston (1992: 7) stated in “Draw, A visual approach to thinking, learning and communication”, that

“As a process of thinking or understanding, drawing begins with the hand expressing a visual image and the trained eye and mind evaluating and changing the drawing as it develops. Drawing can be considered a complete process ... a cycle.”

Figure 5.1 shows the cycle mentioned by Hanks & Belliston.

Figure 5.1 Drawing and thinking are interrelated. (Hanks & Belliston, 1992: 12)



The cycle includes hand, image, eye, and brain working together. The process around the use of drawing contrasts with the traditional image the thinker sitting still with a very serious facial expression as in the famous Rodin statue. Drawing, the movement of hand equipped with a marking device, is interconnected with the activity of our brain.

Frank R. Wilson, a neurologist and the medical director of the Peter F. Oswald Health Program for Performing Artists at the University of California School of Medicine, San Francisco, wrote that

Bodily movement and brain activity are functionally interdependent, and their synergy is so powerfully formulated that no single science or discipline can independently explain skill or behavior.

Wilson (1998: 10)

I experienced a major stagnation during the last few months of writing up this study. The longer I spent time in front of a personal computer and repeatedly typed up this document, the more often I got stuck.

My problem may be caused by passivity during documentation. Sitting at a writing table, working with limited movement put more pressure on me than the ambiguity I faced in the community.

The act of drawing was body movement and according to Carla Hannaford, Ph.D., a neurophysiologist and educator, bodily movement is not only a physical exercise.

Real learning-the kind of learning that establishes meaningful connection for the learner-is not complete until there is some output, some physical, personal expression of thought. Much of learning involves the establishment of skills that enable us to express our knowledge. Speaking, writing, computing, drawing, art, playing music, singing, moving gracefully in dance and sports: the development of our knowledge goes hand in hand with the development of our skills that support and express that knowledge.

Hannaford (1995:87)

The live drawing that gave rough and mostly incomplete pictures was a movement, a kinesthetic activity that activates thinking. The incompleteness of the drawing was beneficial in other aspects as well. It promoted continual learning about the subject matter(s).

1.6 Mind Map and other visual communication is growing in making more effective collaboration

Tapping into the global movement on visual language on the Internet, one finds many organizations including drawing in their endeavors.

Visual Language is being widely applied to various collaborative operations. Graphic facilitation and graphic recording are new important skills in the world of information technology and full bandwidth communication.

There are companies and individuals providing facilitation services for organizations. Some of them offer a translation service, turning words into pictures.

The publicized emergence of visual language in the present time is supported by advance information technology.

Most of the applications of visual language process in making effective meetings could be very relevant for participatory planning. One recent example is on health issue. Management Sciences for Health, Inc. has hosted a workshop entitled “Developing High-Performance Health Programs: Why Management and Leadership Matter”. The workshop applied graphic facilitation, addressed as “graphic display of group process and discussion that stimulates participation, creativity and focus”.

Firms that provide the service can be reached for by the use of an Internet browser in the World Wide Web.

Books on using drawing/picture as a part of thinking both individually and collaboratively are widely available. Examples of these guide books on visual communication and drawing/thinking are; *Beyond Words; A guide to drawing out ideas* (Sonneman: 1997), *Drawing on the Right Side of the Brain* (Edwards: 1999), *Draw; A visual approach to thinking, learning and communicating* (Hanks & Belliston: 1992). These manuals rely on scientific knowledge on human cognition.

Information in both the printed materials and on the World Wide Web suggests that pictures will be a key element along with words in making effective communication for social movement. A consensus is emerging that adding pictures to communications improves its effectiveness and stimulates creativity and participation.

In Thailand, there are some social movements that incorporate graphic elements into their working processes. Examples can be found in activities initiated by Civicnet Institute, Thailand. Books and seminars from the institute incorporate visual elements, though these are limited to mostly diagrams.

Mind Map sessions are applied as a part of participatory planning by the National Economic and Social Development Committee. One observation on the application is that facilitators rely on the use of words, which does not support the full-bandwidth communication (*picture and words in combination*).

The same observation appears in books on Mind Map (*in Thai*) and on organizational change as Future Search (Weisbord & Janoff, 2000). Words are still the main mode of communication in many social movements. When pictures are eliminated, formality and logic tends to be overused. Communication is distorted and becomes less productive.

According to the observation on the use of visual language communication in the present time both worldwide and nationwide, social activity, especially the participatory movement in Thailand, could be improved. One way to increase people's effectiveness in making collaborative creativity is by adding accurate knowledge, practical skills, and a positive attitude toward visual language communication among the practitioners.

2. Six Hats Thinking Method in Participatory Community Development

The test of the Six Hats thinking method in the subject community was discouraged, as mentioned in Chapter IV.

The obstacles were the nature of the method, the existing social context, and the characteristic of the research.

The method is relatively abstract. It caused confusion to villagers since the early introduction.

Furthermore, the social context of the village did not suggest collaboration. Villagers are fragmented socially. The negative impact of dishonest effort to get electricity made the bad situation worse. They wanted to avoid such situations and so were reluctant to join village meetings.

The third limitation was that I did not have enough influence to pull in the villagers to work together. I lacked authority. Other possible reasons behind the failure of Six Hats thinking, in the subject community, are as follows.

2.1 Business personnel ask for the method, the villagers did not.

While firms in business are interested in the method then applied the process, villagers in the subject community had no background and motivation to join the suggested collaboration.

Business sector approaches the thinking/meeting method, Six Hats thinking, as it shows them opportunity to increase their ability in working as a team. Most of the users study the method from Dr. Edward de Bono's book as a result of their own

motivation. Some require more than reading material and enter training programs on the method in order to experience the thinking technique beyond the book.

People who use Six Hats thinking method are often profit-driven personnel in the business sector, they often start from inner motivation to increase productivity of their organization. This study tried to introduce the method to community members without investigating their motivation to start a collaborative endeavor for community development.

This is possibly the major cause of the shortcoming of the application of the tool, in this study.

2.2 The method is too abstract.

Another observation on the failure is that the method is too abstract. Though it is called by a concrete name, Six Hats thinking method, it is highly symbolic.

Facts, feelings, weak points, new ideas, possibility, and thinking process are all approached through the symbols of different colored hats. The method confused the villagers.

One of the major purposes in using Six Hats thinking method is to help participants develop skills in separating thinking from feeling. But in the village people usually mixed their feeling and their opinion together so they could not quite see the value of trying to separate them and they seemed to be confused by this somewhat abstract idea.

The Six Hats method training by a certified trainer in Thailand generally took two days. The trainer recommends that it should be carried out after learning foundation of creative thinking. Probably even greater preparation or even a different approach may be necessary to communicate the tool to people with a low level of informal education.

2.3 Villagers' need for collaboration was relatively low.

Taking a look at the families in the subject village, one would see that each family could live by themselves without any deliberate act of collaboration with other community members. They could run their farms, they had their own water well, they could access the outside community on their own farm truck or motor cycle to get their necessities.

Another limitation related to with people's low motivation was the design of this study. The initiation of collaborative effort was not tied in with any authority. Considering the significance of the government sector on the village, one would see that government officials could possibility make a difference in this village.

The seedling distribution by the agricultural office, the day-care center, and the election of a member of the Sub-district Administration Committee had relatively high levels of participation. This suggests that if the participatory planning methodology is done by or in cooperation with a government sector, it might be successful. The government is still an effective agency in motivating people in a local community.

2.4 Social intervention calls for social preparation.

The lessons in this study suggests that cultural context, for example perception of community members on development, plays a significant role in making social movement, it is therefore important to make appropriate preparation before attempting any intervention in a community.

The application of Six Hats Thinking may be more applicable if villagers were mobilized to work together in a small pilot project that is more concrete in order to set collaborative atmosphere among participants.

One limitation of the application of Six Hats Thinking in this study might be that the execution of the method was not designed as a problem based session. The entry point of the method as in order to conduct community development was perhaps too broad. The introduction did not state a problem to be solved. As a result the mission was not attractive for community members.

3. Crisis and Development

Change is an important element in development. A social trait that repeats itself for long a time might lock the society into the same lifestyle. There were signs that changes were created mostly by crises.

According to the villagers' statement, villagers grouped together when they were informed that they had to move away from the present area. At that time of threat and uncertainty, government officers came by and told villagers about the legal measure for resettlement. It was villagers' collaborative efforts that saved them from being resettled.

School pick-up truck was another evidence suggesting that a crisis could move people to make change together. The primary school in the village was not able to support children's education effectively. It was small and there was only one teacher taking care of all grades. When the owner of the truck offered the community plan for school transportation, it was welcomed and attracted wide participation.

Crisis is an important factor in creating active participation.

4. A Lesson on Listening

Listening requires some skills especially in applying an open learner's mindset.

During interviews and even informal talks, I found out that there were times, quite often during early interactions with villagers, that I took the role of informant instead of learner.

One of the most frequent ideas, that I pushed to villagers and found that it was not well presented, was the profitability of diversified farming. During the first three visits, when conversation was related to farming, I often tried to convince villagers to change their maize farm into a fruit orchard and integrated farm with various types of crops. Examples were raised and most of the time I had to play the "yes, but" game. They agreed with me but pointed out their limitation as seed money, marketing problem, or lack of knowledge. Villagers had their own reasons behind their life styles.

There were some other issues that I tried too much to feed villagers with. Education, cooperation, eco-tourism, and many other suggestions were presented verbally during conversation that was transformed from learning to teaching. Sometimes my narration took half the time of the conversation.

Mind Map making help me keep track of interviews and helped me learn that giving information required good timing. Making change did not consist of giving information but of getting cooperation on some objectives. The important part of the collaboration was the listening to learn about the participants' points of view for making changes that fit all parties: the participants, change agent, and the context.

Listening may appear easy but there is a big difference between hearing and listening. Hearing is only a sensory process while listening was a cognitive one that requires learning and practice.

5. Visual Thinking and Qualitative Research in Social Sciences

During the last three months before this documentation was completed, my own expectation and disappointment about the limitation of information synthesis was frustrating. Fewer insights were cultivated and more time was spent on editing and writing.

Information was spread all over my working room but did not give any promising meaning. The documentation of the study was a repetitive task in front of a personal computer. Fewer bodily movements were taken compared to the field work and information analysis.

Typing, reading, pondering the existing information, and making pages were parts of the slow process of the study. As I reviewed related issues I found out that I used limited drawing during this rather passive period of the research.

After realizing the cause of my passivity, I started turning concepts into drawing to stimulate my mind, walking around while reading, and even bringing documents with me while cleaning the house. Drawing and body exercise helped me approach qualitative information effectively.

Mapping complexity helped me gain understanding. Human society is always complex. The complexity makes collaboration difficult for participants may interpret what they hear differently. Misunderstanding destroys a positive atmosphere as well as consumes time and energy. Visual language is useful in making a discussion a more concrete social event. It helps clarification, expansion of ideas and makes the social interaction more fun and fruitful.

In conclusion, using Visual Language, the combination of pictures and words promotes effective information gathering and facilitates clear communication. The use of this full bandwidth communication facilitates both individual and collaborative learning.

The use of the Six Hats thinking method in a village context was not effectively tested in this study due to the limitation embedded in the nature of the method, the design of the study, and the social context at the time of the study. But the adaptation of social preparation before the intervention may pave the way for the application of this tool.

The application of Six Hats Thinking in a similar environment to the Thai rural context, was reported by Dr Simon Batchelor (Batchelor, 2000).

Village "animators" - native Cambodians - applied an adapted version of the Six Hat Thinking as part of a Cambodian development program and found it to be a useful tool for guiding or framing open ended conversations and thereby allowing the people of the program to go through the process of discovering their own thoughts and feelings about important topics. It also had a strong role to play in disarming emotions, and preventing conflict among participants.

Although Batchelor does not discuss the factors accounting for the success in applying the tool some of the success may be attributable to the facts that the animators spent considerable time getting to know villagers and the application of the method was part of a quite comprehensive development program involving agriculture, business and community development which delivered quite tangible benefits to the community such as water pumps.

The Cambodian experience is an encouragement for development workers, government officials, and other change agents to continue applying and adapting/improving the tool for effective participatory development in the Thai cultural context.

The search for a possible method in making participatory planning is still on the move. More should be cultivated from the types of experience illustrated in this research.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Society is looking toward a better future through the power of participation. The study has tested two tools for effective participatory planning for community development.

This study is undertaken in the realm of social science, the study of human society and of individual relationships in and to society. Generally, social science is regarded as including sociology, psychology, anthropology, economics, political science, and history. The results of the study showed that the community of the study consists of many sub-systems and these sub-systems could be understood by drawing on all the disciplines mentioned above.

The effort to initiate a community development process was not fully successful but the evidence suggests that visual language facilitates the holistic and dynamic study of social groups, processes and problems.

Visual Language

Mind Map supported interviews, information gathering, information processing, and the analysis of inter-related issues under investigation. Beyond the benefit for the social scientist, the Visual Language meeting, which is the adaptation of Mind Map, shed light on ways to improve group collaborations.

The attraction of the pictorial process, the relationship between bodily movement and thinking, and the capacity of a graphic map to present a holistic picture of living issues together suggest that it could play an important role in the process of constructive participation.

The effectiveness of visual language expanded from the application of Mind Map was visible during the study and the additional test out of the field in different contexts. It helps to focus interviews, adds fun into the conversation, makes complex issues (for interviewer) more comprehensible, and provides a holistic picture for both respondents and interviewer.

In another experiment presented in the appendix, the use of visual language meeting for government officials helped to facilitate better communication both among individuals and groups. Participants were active in making their own map portraying inter-related items. The relaxed atmosphere during the sessions might lead to the misinterpretation that this was simply a group of people playing but the outcome confirmed the effectiveness of Visual Language meeting.

The capability of visual language to make clear communication and create an atmosphere of fun suggests that it can make participatory development and other types of collaboration more effective and pleasant with fewer conflicts caused by misunderstanding.

The Mind Map was effective in information gathering and analysis as well. In the fieldwork, it helped the participants' to focus and helped the interviewer and respondents to investigate and record the way of life in the village.

The drawing along with interviews helps keeping track of the narration and makes references fast and accurate. Double checking the accuracy of information with drawing was convenient.

During information processing and analysis, pictorial maps facilitated pattern recognition. It was possible that both the map and the act of drawing facilitated the activity of the brain.

In conclusion, Mind Map and visual language facilitates the individual's thinking process, clear communication, and helps create a positive atmosphere for participatory endeavor.

Six Hats thinking

The introduction of Six Hats meeting to village community planning was not as effective as was expected due to the fact that it is an abstract process focusing on different modes of the mind or, different activities of the brain. One vivid distinction between the application of the method among business people and among villagers of the subject community was the way it was treated.

While business personnel study the method from reading material intentionally before applying the method as a tool for collaborative creativity, the method was introduced to villagers without any relevant background or faith in the method.

Villagers were still traumatized by being cheated by outsiders and their faith in group collaboration was ruined at the time of the study. Moreover, villagers were self-reliant, even without deliberate organization, they could lead their own lives.

Even the staff in a university division found that the method to be rather incomprehensible and impractical. The limitation of Six Hats thinking was rather clear.

The reasons behind the difficulty in applying the method could be identified into three parts,

- the facilitator who introduces the method,
- the nature of participants, and
- the atmosphere or the context.

In further trial of the method it would be more useful to deal with these three factors at once. The facilitator may prepare the atmosphere to be ready for people's participation, by working with participants in a small pilot participatory project before the intervention using Six Hats Thinking. The introduction of the method should be prepared appropriately to suit the conditions of Thais especially in a rural community.

The Graphic Based Participatory Methodology for Community Development that include two processes, the application of Mind Map and Six Hats thinking, was tested and investigated. Visual Language technique, which was expanded from Mind Map, showed signs of applicability while Six Hats thinking faced obstruction and required further adaptation. Some possible reasons behind the results of the experiment were shown in this study and further study should be conducted to confirm or contradict these results.

Much research and the emergence of a graphic facilitation business reflect the capacity of visual language to facilitate effective collaboration.

In Thailand, the constitution encourages people's participation in public policy and projects. The public hearing is mentioned as a mandatory process for development projects.

People's participation has not proved very successful in the past. While a traditional collaborative meeting for planning has relied on words and diagrams, graphic/drawing could improve participatory activities in both organizations and communities and make them more constructive, creative and fruitful.

For Researcher

Researchers should pay attention to the nature of the organization or community under study before making further action in initiating collaboration. The preliminary finding should cover the motivation of participants, the political system (body of authority), the social system, and the connection between the context and the existing situation of the subject community.

The researcher should learn and practise visual thinking as a preparation before starting the drawing session; interviews; information gathering, processing, and analysis; and visual/drawing thinking for participatory meetings. A confident facilitator will be better able to solve any difficulties that are thrown up and will be more flexible in applying the tool in the field.

Some facilitators suggest that there should be at least two persons involved in graphic facilitation. One facilitator manages the meeting process while the other functions as a graphic recorder working hand in hand with the facilitator.

For Organizations

The art and science of visual facilitation in Thailand is very young. Most meetings have been conducted in logical style and mostly were formal, not promoting collaboration. There is no documentation indicating the execution of the process so far. But a demand for better group process in making collaborative change through active participation can be observed.

Meeting participants have complained about confusion during the meeting due to the problem that “They did not see the same picture”. The Visual Language process can help to overcome this confusion by making ideas more concrete.

As government officials dealing with natural resources protection are having difficulties dealing with people living close to protected area as in the village of this study, application of Mind Map and adaptation of Six Hats Thinking may be useful for them. Park people may apply the methodology in getting connected with villagers and help them start collaborative development projects and programs, as villagers are ready to. The authority and responsibility of government officials would be a good motivation for them to apply new methods to improve their mission.

A workshop on visual thinking or Visual Language meeting could be useful in-service training for making more effective teamwork.

For Lay people

One problem occurring among discussion groups is that people tend to argue about 'words'. It is a common practice to invest one's words with strong emotions. Reasoning and excusing may be the same thing in the end.

We may solve the problem by clarifying our ideas with both techniques presented in this research. Drawing can help us see more new dimensions of the old subject matter while different modes of thinking could help us see the matter from other viewpoints. Clear understanding helps we get rid of useless debate during precious meeting time. Clarity also helps us explain even complex systems more effectively either to individuals or groups.

Let us take a look at an old situation presented in verse making a motion picture in the readers' minds.

Six wise men of India

An elephant did find

And carefully they felt its shape

(For all of them were blind).

The first he felt toward the tusk,

It does to me appear,

This marvel of an elephant

Is very like a spear.'

The second sensed the creature's side

Extended flat and tall,

'Ahah!' he cried and did conclude,

'This animal's a wall.'

The third had reached towards a leg

And said, 'It's clear to me

What we should all have instead

This creature's like a tree.'

The fourth had come upon the trunk
Which he did seize and shake,
Quoth he, this so-called elephant
Is really just a snake.'

The fifth had felt the creature's ear
And fingers o'er it ran,
'I have the answer, never fear,
The creature's like a fan!'

The sixth had come upon the tail
As blindly he did grope,
'Let my conviction now prevail
This creature's like a rope.'

And so these men of missing sight
Each argued loud and long
Though each was partly in the right
They all were in the wrong.

Hampden-Turner (1982: 9-10)

Successful participatory endeavors are based on mutual understanding and constructive social inter-relationships. As such effective communication is immensely important. Visual Language communication could play a crucial role in such efforts.

We are living in a rapidly changing world. In order to deal with the chaos of systems constructively, a new paradigm should be introduced and nurtured. Our journey into chaos is more rich, comprehensive and useful when we take it collaboratively. More team players could mean more resources as well as more conflicts.

Mutual understanding is required to create synergy from a team. It is a new adventure to bring complicated minds together and access the complexity of hard and soft sciences, natural sciences and social sciences blending as one. The adventure is full of uncertainty. Visual Language communication as experienced in this study is a part of the adventure.

In *Strategic Thinking and the New Science*, T. Irene Sanders (1998: 6) quoted Marcel Proust's words in *La Prisooiere*, reading "The only real voyage of discovery . . . consists not in seeking new landscapes but in having new eyes . . .". With a new pictorial map of things and systems created among participants, all could see their old existing world with new eyes. The new perspective should bring all out of ambiguity and facilitate working together to create a better world.

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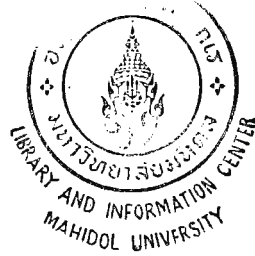
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Appendix

Using Visual Language Meeting

After the fieldwork in the village, I went back to study global progress on the use of pictures in meetings. There were more books and web sites related to the issue and the books were available from the Internet bookstore. These books were good sources of information on conducting more effective meetings with the use of drawing.

Direct experience from the village and insights from reading materials showed ways to make participatory planning more meaningful. I studied these materials and had a chance to apply what I call Visual Language Meeting in a three-day workshop for seventy government officials.

All the participants were officials at the district level. An active Head of District Official initiated the training. The objective of the training was to provide tools for officials to work on participatory development with villagers. I designed and then conducted the participatory meeting to fit three days.

The basic concept of the Mind Map session was the one applied in the village. But instead of drawing pictures during one-on-one interview, I used the process for listening and speaking to seventy participants. Drawing pictures was expanded to accompany the explanations presented by the participants and to get participants' input by encouraging them to draw.

The workshop on the use of drawing in making an effective meeting covered one day and a morning. It started with a presentation of the strong points of drawing in making effective meeting and in creating a more interesting atmosphere that promotes active participation. This part was less participatory than the following session. It took one day. Another one day and a half were provided for participants to work as groups to illustrate situations of drug abuse and malnutrition.

Most groups had at least one person taking roles of facilitator and graphic recorder. Finally their Mind Maps were presented to the whole group. Most participants took active roles during the workshop. The project coordinator said that officials often dropped out from large group meeting but for this Visual Language Meeting workshop, they attended the whole process.

The process was live (*drawn up during the presentation*) and simple drawing helped a lot. Communication was clear and even the complex communication benefited from the drawing. Picture depicting complex concepts often caused questions that people in the meeting could ask for clarification easily as the subject matter was there for all to see, add, cut, modify, or even erase to make better one(s) for better understanding. An example was a picture of a mother using her foot to keep her baby away from her.

Participants were interested in the picture and asked questions immediately when the flip chart paper was put on the board. The group representative explained that some mothers did not breast feed her infant because she was worried about the shape of her breast. Other participants were very impressed on both the information and the presentation.

Another strongly impressive situation was the Mind Map showing a picture of a very thin child with big, round stomach. The feeling of the participants when they saw the picture, even a rough contour, was much stronger than the words 'child with malnutrition'. People's participation and the effective communication through the session suggested that the role of visual language was important and could improve the effectiveness of participatory planning.

The process of freehand drawing possibly promoted thinking. Participants of the Visual Language were quick in recalling information and thinking of solutions.

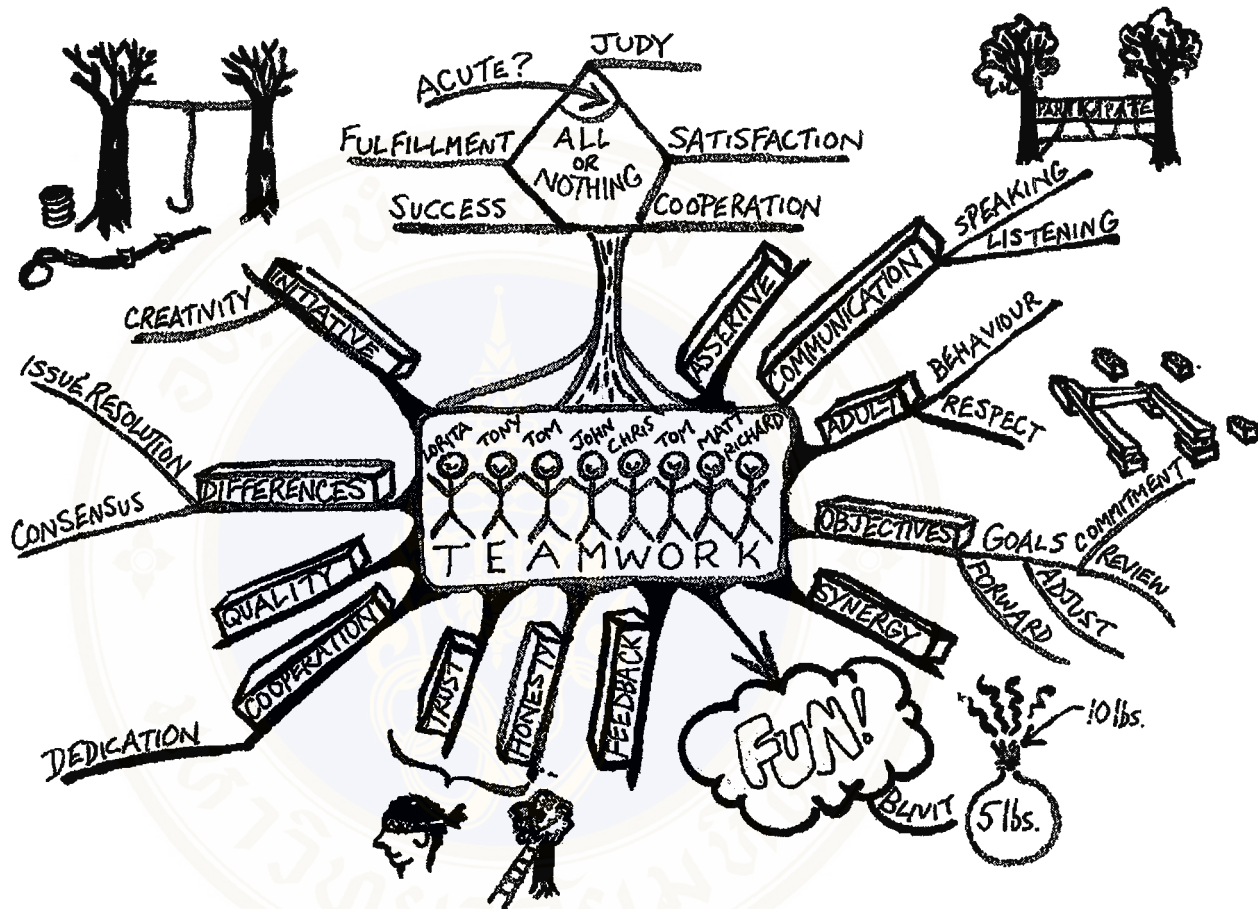
Visual language increased people's participation as the use of this visual tool required participants' attention to enjoy information recorded in the form of pictures.

During the Visual Language meeting provided for seventy district level officials, participants were significantly active especially when they were working on making a visual map of certain issues. There was no entertainment provided during the three-days workshop. The process of making graphic map on malnutrition and drug abuse was both goal-oriented, and entertaining. Participants showed their willingness to find out reasons behind malnutrition and drug abuse to add to the big picture of the subject under investigation. One reason was because they would like to see funny graphics in the Mind Map and another was that the pictures gave them insight.

For example, when there were many pictures of schools and hospitals in the map as parts of the solutions to the problems, some participants mentioned that the two agencies had too great a work load and suggested that other organizations should get involved in solving the problems of malnutrition and drug abuse.

Participants realized that it was too much for only few organizations to solve the problems with complex roots. They saw the situation with new eyes as pictures were made and presented instead of a written record.

For further study, the method should be applied in different organizations especially at grassroots level, with different topics, and in different cultural contexts. Hopefully, compared to the traditional meeting conducted in most organizations nowadays, the visual language meeting would solve the problem of low participation with low effectiveness, especially in the Thai context, where fun and work are interconnected.



Mind Map on the development of team-work by Digital executives.

An example of Mind Map. (Buzan, Mind Map Book, 1996 : 171)

A Mind Map made during an interview with a villager is reproduced, translated, and shown in the following page. The original map was created in Thai on unbleached paper. The rough drawing and short keywords are shown here resembling the original map.

BIOGRAPHY

NAME Mr. Kitjakaan Chuaychuwong

DATE OF BIRTH 9 January 1968

PLACE OF BIRTH Bangkok, Thailand

INSTITUTIONS ATTENDED Chulalongkorn University, 1985 - 1988
Bachelor of Arts (English and Drama Arts)

Mahidol University, 1995 - 2000
Master of Arts (Environmental Social Sciences)

POSITION & OFFICE Peace Corps of the United States of America,
Thailand, Training Section, Language and Cross
Cultural Trainer, Language Training Coordinator,
and Training Specialist. 1989 - 1994