

Strategic Management of Upper Mae Kuang River Basin with the Participation of Civil Society

Winit Pharcharuen^a, Pathipan Sutigoolabud^b, Tipsuda Tangtragoon,^c Nikorn Mahawan^d

^{a,b,c,d} Maejo University Chiangmai, Thailand

^a winit.phacharuen@gmail.com , ^b pathipan@mju.ac.th. ^c tipsudy@yahoo.com. ^d nikorn512@yahoo.com

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Abstract: The purpose of this research was to analyze management patterns, barrier levels, factors affecting successful management of the river basin, as well as offering strategic guidelines that will serve as a mechanism for the effective involvement of civil society. However, the result of this research will be of benefit to the academic sector, policy implementation, to the society and community, natural resource, and environmental management, including educational research and various development forms. Many of which will lead to the development of natural resources and environment, and appropriate river basin management that are under the area. Target area and key informants consisting of Mae Kuang River Basin Network Committee, relevant government personnel, experts, scholars, community leaders, philosophers, villagers, and people in the area. A questionnaire, survey, interview, group meeting, workshop, and critical analysis were used as a form of data collection. The data were analyzed and were presented in both qualitative and quantitative. The result of the study showed that the management pattern and procedures, for the management of the Upper Mae Kuang River Basin, consists of for patterns such as 1) Government Management Pattern 2) Project Management through Royal Initiatives 3) Community Management 4.) Private organization or NGO. Whereby, operate according to King Rama 9 Philosophy: 1) implementation of the procedure from small to large 2) the process of reforestation in the people's mind learn, understand, access and development 3) support on a culture's resources, natural environment, and community, 4) participation and cooperation process from all parties. The results of the research lead to the development of the Upper Mae Kuang River Basin ecosystem. Which help improve the quality of river basin in the area, the community were able to live and eat abundantly around the river basin with the community economy from agro-forestry and eco-tourism management. The Barrier level from the management of the Upper Mae Kuang River Basin involves the quantitative participation of civil society was found to be low, as for the qualitative results, it was found that the government and the public sector lacked the knowledge and understanding of the holistic river basin management and the perceived information between government officials and people differed. And the implementation of redundant development / solving projects in the government sector. The factors affecting the success of the management of the Upper Mae Kuang River Basin include 1) the knowledge body that is appropriate to the geosocial characteristics and the learning process that can build awareness, build understanding based on culture, Wisdom and life 2) An explosion from the inside (inside out) caused by understanding, recognize the value system, reach out, generate opinion guidelines for developing and implement a plan of action and judgement. 3) Participation, identify love, unity, strength, through group processing, networking and empowerment from all sectors including government, private, academics, developers and communities 4) Holistic co-management. It is driven by vision, plan, working together and management in all dimensions. Analyzing the strategic guidelines that will serve as a mechanism for the effective involvement of civil society analysis include the following: 1) Integrated Management Strategy by the mechanism of the Integrated River Basin Management Committee River basin provisions and river basin management funds. 2) Strategies for driving the management process through the mechanism of the Institute of Natural Resources Environment and way of life for the future is responsible for driving knowledge management. Being the core of cooperation Expansion of concepts, principles, and knowledge..

Keywords: strategic management in the river basin; River basin management according to royal initiatives; Civil society participation

1. Introduction

His Late Majesty King Bhumibol Adulyadej Rama IX realized the long-term loss of forest, river basin and streams. Therefore, the royal initiative establishes the Huai Hong Khrai Royal Development Study Center and was initiated on December 11, 1982, at the Huai Hong Khrai River Basin, Doi Saket District Chiang Mai Province. To use, it as a channel for conducting experimental studies, research, and development patterns of landscape, society, and river basin. Allowing people to live in harmony with the forest sustainably. Another purpose for establishing the Huai Hong Khrai Royal Development Study Center was to resolve the degradation crisis in the river basin area and to further apply the results and knowledge gained from studies, experiments, and research in sustainable development. By developing both forest and fisheries simultaneously. [1] On March 25, 1992, there was a royal initiative programme to utilize the gained knowledge to develop upper Mae Kuang River Basin. In a project title Khun Mae Kuang Forest Development Project [2].

Upper Mae Kuang River Basin area is an upstream area Mae Kuang Dam and Udomthara, covering the Thep Sadet Sub-district, Pa Miang Sub-district, Choeng Doi Sub-District, Luang Nuea Sub-district, Mae Pong Sub-District, Doi Saket District, Huay Kaew Sub-District, and Mae On District, it has an area of

approximately 345,000 rai with the top of Doi Phu Langka Luang as the highest mountain. It has an altitude of approximately 2,031 meters above sea level. The general river basin forest is evergreen forest, mixed with deciduous forest, and dipterocarp forest, which is the source of 5 streams such as Mae Kuang Nam, Mae Wong Nam, Mae Wan Nam, Mae Nam River and Huai Kang Nam, all the 5 streams flow into the Mae Kuang Udomthara Dam. In this area, we have a total number of 27,032 people, 11,400 households, 55 house groups in 6 sub-districts, and 2 districts, living in the upper Mae Kuang river basin. They settle in this area together with when Chiang Mai city was about to be created in 1839. The original ethnic people were, Khmu, Lua, Pka Kueyor, Tai Lue (Xishuangbanna) and Lanna, their traditional way of life was by farming in plain and slope area. Make rice fields and plantations on the highlands. Their cultural and traditional beliefs are tied to the production of Miang for community economy [3].

Since 1992, the Mae Kuang River Basin has been managed according to the Philosophy of His Majesty King Bhumibol Adulyadej Rama IX. For more than 25 years in a concrete way, which as a result makes Mae Kuang River Basin, still acting as a river basin forest, producing water that flows into Mae Kuang Udomthara dam uninterrupted. The communities in the river basin can live in harmony with the natural ecosystem, while the river basin areas in the 13 northern provinces, which is the origin of 4 rivers such as Ping River, Wang River, Yom River and Nan River flow together as the Chao Phraya River. However, Chao Phraya River is an important river in Thailand covering a total of about 8.6 million hectares, and a population of about 800,000 people are utilizing the area for monoculture crops. They use herbicides for weeds and pests at a high rate. Therefore, result in a bad and critical condition for the river basin are and mountains affecting social life, and the overall ecosystem, causing economic damage worth more than 469 billion baht per year [4].

The researchers realized the concrete importance of the upper Mae Kuang River Basin. Therefore, we focus on the success model of efficient management of the Upper River basin. To study the pattern, process, of successful management of the river basin. Also, create management strategies for a river basin with the participation of civil society in all dimensions. To serve as a learning prototype and therefore, expand the results of the development and apply them to the King's Philosophy.

2. Research Objectives

The purpose of this research was to analyze management patterns, barrier levels, factors affecting successful management of the river basin, as well as offering strategic guidelines that will serve as a mechanism for the effective involvement of civil society.

3. Research Methods

A) Study Area

The study area, Upper Mae Kuang covers Doi Saket district, Pa Miang sub-district, Cherng sub-district, Luang Naua sub-district, Mae Pong sub-district, Including Huay Kaew sub-district, Mae-On district, covering an area of approximately 345, 000 hectares of which are vital to the ecosystem and communities. The river basin area is useful for the people in the communities in all aspects because of its complete resources. They use it for agriculture, fisheries, consumption and it is also an important route for water transportation that allows people to exchange cultures. Resulting in a mix of cultures in the Mae Kuang river area (Picture 1)

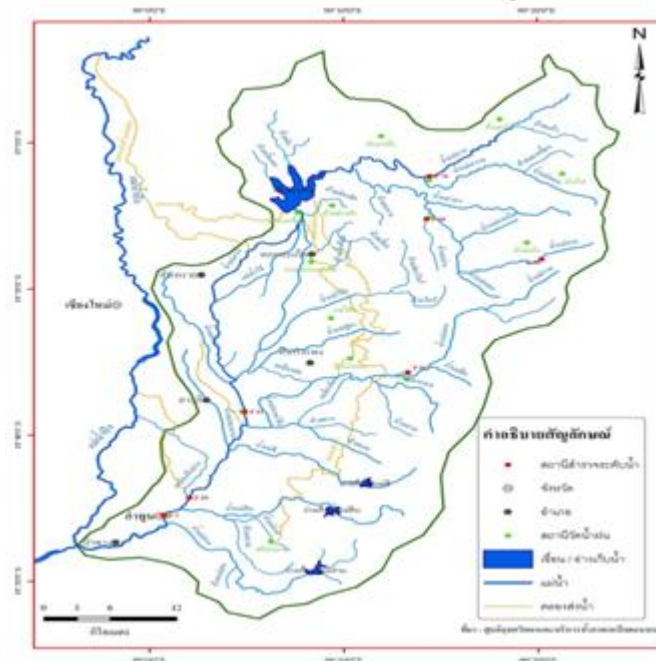


Figure 1 The path of the upper Mae Kuang River Basin

Source: Sustainable Management of River basin areas. According to the King's Philosophy, Intellectuals and Landscapes: Mae Kuang River Basin

B) Population and sample

This research is participatory research from all stakeholders in Mae Kuang River Basin and it consists of Network committee of Mae Kuang River Basin, related government personnel experts, scholars, community leaders, philosophers, villagers and people in the area. The sample groups and key informants were classified into 3 groups as follows:

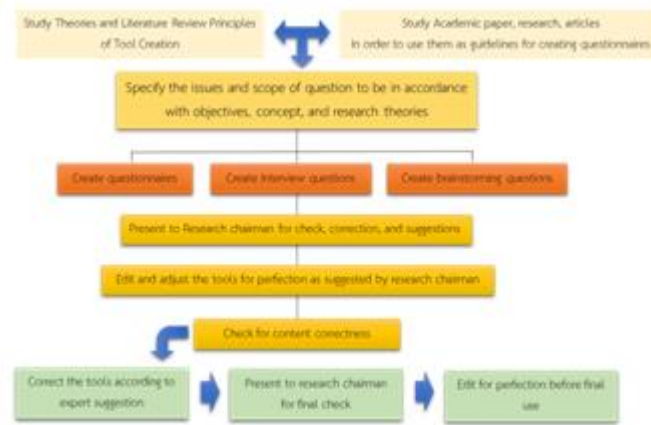
Group 1: Knowledge Transcription Stage, 5 sub-branches of the Mae Kuang River Basin, comprising of Network committee of Mae Kuang River Basin and the people in the community of Luang Nuea Sub-district (Huai Kang River), Pa Miang Sub-district Community (Mae Kuang River), Thep Sadet Sub-district Community (Mae Wan River - Mae Wong River), Huay Kaew Sub-district community (Mae Lai River) and Choeng Doi Sub-District and Mae Pong Sub-districts community. There were 400 questionnaires samples, 10 people were interviewed, group meeting of the 5 rivers consisting of 250 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

Group 2: Knowledge transfer platform, this consists of government executives in the area and Network Committee of Mae Kuang River Basin. 10 people were interviewed, group meeting of the 5 rivers consisting 80 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

Group 3: This group consists of academicians, experts and administrators, relevant government personnel (This population does not need to be in the 5 sub-basin areas of the Mae Kuang River Basin. 10 people were interviewed, group meeting of the 5 rivers consisting 80 people, including 80 people in the workshop and 80 people were involved for the criticism and review.

C) Research Tools and Quality Review of the Research Tool

1. The process of creating this research tool consists of questionnaires, interview, and forms used to formulate a question for brainstorming. The research team followed the following steps.



2. Quality review and inspection of the research tools, The research team did validity test on the questionnaires and interview questions by determining the conformity index (IOC) the evaluation results were classified by the expertise and the assessment criteria passed.

D) Data Collection

1. Document analysis: The study analyzed data (Documentary Data) by gathering evidence from primary sources, both from the media, with the use of information technology, research work, thesis, laws, journal articles, books and other related publications. The data were compiled systematically, and database was created for researching and presenting in group meetings, workshops and activities conducted at all stages of the research.

2. Field study: This was done after document and database creation for a guideline for implementation has been created. To get accurate result and information. This was done by collecting data through a survey in the communities, including the topography of the area. informal interviews from stakeholders were also included such as; Network Committee of Mae Kuang River Basin, relevant government personnel, experts, scholars, community leaders, philosophers, villagers and people in the area.

3. The Work and Conference Stage: This was done in group meeting meetings to mobilize opinions from people involved in all sectors in the 5 sub-districts rivers area to take lessons on the management of the branch river basin, analyze the problems, needs and guidelines for the development of river basin management with the people involvement.

4. Data analysis and synthesis: This was done by gathering all information to evaluate them and create a strategy and mechanism for the Joint Management of Mae Kuang River Basin with the People Participation and Civil society. So, they can be presented for critique and review by stakeholders and related individuals to get complete and reliable information.

5. Critique and Review: This was a process of presenting information relating to strategies and mechanisms for the Management of Mae Kuang River Basin with civil society participation for all stakeholders to be aware of the strategy, check and review, include suggestions, add more data to achieve a perfect strategy.

E) Data Analysis

The research team analyzed received data, they include both quantitative and qualitative data. Therefore, the analysis was divided into 2 parts: in terms of qualitative data analysis. The research team analyzed the data according to the type of data collected from different sources, including the analysis of data obtained from document analysis which were compiled from books, textbooks, articles, and research works, Survey data analysis, include data from a real field survey such as an in-depth interview. In terms of quantitative data, including the evaluation of data obtained from the questionnaires and they were analyzed using Likert the Scale criteria [5].

F) Presentation of Analyzed data

The analysis of data in this research consists of 2 parts: qualitative and quantitative data. Presenting the qualitative information was done by writing them in a descriptive approach, which is the information obtained from the study, such as survey, interviews, group meetings Critical review and analysis, including data from various sources related to the topic of interest to confirm the researchers results on each issue. In terms of quantitative data, which includes data collected from the questionnaires and survey will be presented in the form of a table, using descriptive statistics for the explanatory variables, which includes, percentage, mean, and standard deviation, based on the characteristics of the variables.

4. Research Results

The content of this research was divided into four categories as follows:

A) Forms and Management Process of Upper Mae Kuang River Basin consists of 4 forms. 1) Managed by government agencies: This is a management process according to their duties and responsibilities, they have a plan, the budget has allocated by the government, they also have objectives, goals, and indicators of performance to determine how they manage. 2) Manage as Part of Royal Initiative Project is operated by a working group consisting of personnel, staff from relevant departments. They have a central platform for coordinating operations, planning, setting objectives and goals. 3) Community-based management model. Is an operation according to the way of life, according to the traditional culture and tradition of the people in the village, they have village committee, Natural Resources and Environment Conservation group, as the care coordinator with the participation of community members and various organizations from outside 4) Manage by private and non-governmental organization They operate to promote and support community activities according to the needs of the community or joint planning to manage the activity process

Operational Activities in River basin Management consists of 5 activities, they include: 1) Prevention: Maintain natural resources such as inspection activities, suppressing regulations, 2) Rehabilitation: Improving and enhancing ecological efficiency, such as planting 3 trees with 4 benefits, reforestation, Building upstream dams. 3) Development, Promotion, Support and Community Development such as professional development, support of inputs, building a learning process, sustainable use of resources, development of a resource-based community, and economy system 4) Development of Participatory Processes such as group process development, the establishment of river basin conservation groups and committee for the river basin, activities on the cultural base of forest stream, including environmental education activities 5) Development Prototype learning Center for Community such as Baan Pasak Ngam Model of river basin restoration management under Royal Initiative of Ban Mae Kampong, Ecotourism management by Ban Pang Champi community, model for restoring natural water sources, etc.

Management Process of River basins: This was driven by the concept theory of the King's Philosophy. His Majesty King Bhumibol Adulyadej Rama IX, as follows: 1) Proceed step by step from small to large Management of the Upper Mae Kuang River Basin. Determine the area and divided them into three phases: Phase 1 - 30,000 rai, Phase 2 - 70,000 rai and Phase 3 - 245,000 rai. It covers the upper Mae Kuang River Basin. To practice management skills and show operational efficiency 2) The Process of Reforestation in the People's Mind: learn, understand, access, develop, the first stage of development is to reforest in the people's mind so they can understand, and realize to achieve a common goal of understanding and then gradually decide to consider the appropriate operational guidelines in line with the geosocial characteristics as deems necessary. 3) Cultural-based Support. Natural resources and community environment, each community has a cultural base, Local wisdom that has been accumulated as a way of living. Community culture-based support is encouraged to connect to changes in development leading to sustainable satisfaction. 4) Participation Process and Cooperation from All Parties this is a process of strengthening, and mobilize resources from all sectors, reduce conflicts, create justice, reduce the complexity of operating together.

B) To study and analyze the level of problems and obstacles in the management of the Upper Mae Kuang River Basin.

From the survey results in terms of obstacles in the management of Upper Mae Kuang River Basin, the result found out the following 9 issues: 1) The people in the community lack the idea of ownership in the natural resources 2) They lack the awareness and Love to cherish the natural resources in their area. 3) The data shows that the people's problems and needs are not being solved and developed 4) Operation of the various development project of the government are complex 5) They lack the understanding of joint management of river basin 6) Government Management was limited 7) Difference in awareness and understanding among government officials and the people 8) Fairness in the utilization of natural resources in the river basin and 9) lack in the Integration of local wisdom and modern management. To develop a management process suitable for the context of the area leading to management prototyping and expanding the concept. In conclusion, the analysis from the questionnaire showed that most of the respondents did not participate in the management of the Mae Kuang River Basin. Meanwhile, most of those who answered the question do not participate in the Management of Mae Kuang River Basin. At the same time, those who answered the question and participate in the management of the river basin were few. Therefore, it is interesting that there are problems with the Management of Mae Kuang River Basin with the participation of the civil society, what are the factors that contribute to the success of managing river basins. Therefore, strategies and mechanisms to manage the Upper Mae Kuang river basin water with civil society participation can be presented.

C) Successful Management of river basin in ecosystem structure.

The result found that the upper Mae Kuang River Basin has abundant quality. River basin resources have changed from the jungles of 7.93% of the drainage basin. In 1990, it became a river basin forest with 51.62% denser of the river basin. In the year 2016, the amount of water being liberated flows into Mae Kuang Udomthara Dam. In 1993 - 2000 there was an average of flow in September at 43.63 million cubic meters. Increased to 44.47 million cubic meters in the year 2001 to 2016. This shows the effectiveness of river basin area, which serves as an area to store and mop water, including the discharge of water from the ecosystem more effectively.

The river basin community lifestyle reflects the model of "support people living with the forest." The community has learned the king's philosophy the principles of living insufficiency economy, Sustainable use of river basin resources, Adaptation from the traditional way by quitting farming on the highlands, Development of agroforestry system, Planting additional crops according to the royal initiative, planting 3 trees with 4 benefits, for example, coffee cultivation together with upstream forest, persimmon cultivation, adjust to mixed agriculture and learn to collect, development of added value from forest products and ecosystems. The researcher found that 1) The upper highlands is useful in agroforestry and ecotourism 2) The central area land is used in rice terraces, mixed agriculture, mushroom cultivation, seedling propagation. Ornamental flowers Agricultural product processing Tourism - Homestay 3) The lower area, which is quite sloping and flat, has a pattern of utilization of farm, rice, mixed garden, and livestock, fishery and ecotourism. And environment

The factors affecting the success of the management of upper Mae Kuang River Basin include 1) The knowledge body is in accordance and appropriate with the characteristics of the social landscape and the learning process that can build awareness, build understanding based on culture, wisdom, and way of life 2) Explosion from inside out, this is as a result from understanding, aware of the value system, access to ideas development and development guidelines, implement planning, and decision making 3) Participation: know love, unity, strengthen through network group, process and empowerment from all sectors including government, private sector, academics, developers and communities. 4) Holistic collective management. It is driving work with vision, having a plan, and working together. Including the management of all dimension connectively.

D) Strategies and Mechanisms in the Management of Upper Mae Kuang River Basin with the Participation of Civil Society.

From the study analyzes, the management process of Upper Mae Kuang River Basin management found out the following strategies:

1) Integrated Management Strategy by Integrated River Basin Management Mechanism river basin provisions and river basin management funds. This area is a landscape ecology, with elements that are linked together as a structure and function. Therefore, the Management of the river basin must consider the management of all elements at the same time, we cannot focus on just one component, because the ecosystem is holistic, any small change in one section will affect the whole system. Therefore the management of the ecosystem is done with an integrated method. However, in this research, the research found out the following strategies

1.1) Integrated Committee on River basin Management Mechanism: Operate as a committee which is structured as a river basin council, It consists of representatives from all sectors, including the community, government sector, private sector, academicians and developers. They plan together, co-ordinate plans for each sector, fused into river basin management, and jointly operate according to each role and duties according to skills and abilities

1.2) Legislative Management Mechanism: The river basin council or the river basin committee jointly consider establishing rules, regulations, and conditions as a guideline for action in determining roles and duties that should be performed. Undesirable and conditions for managing problems, obstacles, provisions, prohibitions, excuses

1.3) Fund Management Mechanism: This is to mobilize factors in the management of river basin areas, establish a fund with, create a committee to manage the fund for transparency. Therefore, there should be a source of the funds with support from the government, donations including various types of fundraising.

2) Management Process Strategy: The mechanism of the Institute of Natural Resources Environment and Way of Life for Future / Green. They are responsible for driving and knowledge management. They are the core co-operation centre and expansion of concepts, principles and knowledge



5. SUGGESTIONS

Based on the findings from this research, the researchers have the following suggestion for the Management of Upper Mae Kuang River Basin with the Participation of Civil Society. The suggestions include both policy suggestions and how to implement those policies into practice. Including suggestion for further studies.

A) recommendation policy.

1) Strategy formation for the Management of Upper Mae Kuang River Basin with the Participation of Civil Society will be successful only if the government and private sector adjust their roles, thinking methods, processes, and methods of operation.

2) The system of Government management should improve, such as the process, structure and operation. They should emphasis on integration as a key guideline.

B) Suggestion for Practical Use of the Policy.

1) Participatory operation of the civil society in determining the strategic mechanism, including project plans, and activities. So that all sectors operate appropriately according to their role and duties.

2) After the achievement of the strategic plan for the management of the Mae Kuang River Basin with the participation of civil society, there should be a workshop to convey the plan into action and the operating results should be followed up quarterly and at the end of the operating period, the person responsible for each project prepares an operational report. Along with a summary of the overall performance to be able to assess the operating situation within the framework of the work plan.

3) During the year of the plan implementation, there should be a central agency that coordinates and organizes meetings to continuously monitor the performance of all responsible parties.

C) Suggestion for Future Studies

1) There should be a study on the processes for driving strategies and integrated systems management mechanisms for the river basin. To serve as a guideline for creating strategic management of another river basin.

2) There should be a study on how to increase the efficiency of Network enhancement in participatory river basin management. To achieve the concept of integrating river basin management. That will lead to the creation of tools and mechanisms to operate effectively.

6. Conclusion

This research was both qualitative and quantitative research, intending to analyze management patterns, barrier levels, factors affecting successful management of river basin in Mae Kuang River Basin Doi Saket District - Mae On District, Chiang Mai Province and to consider synthesize strategic proposals and mechanisms for sustainable management of river basin areas, which is important for formulating solutions in resolving degradation crisis in the river basin area. From this study, it was found that the model was successful by introducing the king philosophy, His

Majesty King Bhumibol Adulyadej Ram 9 to drive expansion and achieve concrete results. The lesson learned from this prototype model can be applied in the management of the River Basin with the participation of civil society with the following strategies 1) Integrated strategy management with integrated committee management mechanism, legislative mechanism, and fund management mechanism. and 2) Management Process Strategy with the institute of natural resources and environment and way of life for a future mechanism, acting as a centre for knowledge management. Under today's rapid changes in society, economy, politics, and technology, we focus on driving the economy based on technological innovation. However, in the past, the base of natural resources and the environment has been done to cause global warming. Depleted resources biological loss, diversity, pollution, water source and stream destruction. Affect the quality of life in human society as a whole. Therefore, Human society must focus on development based on sustainable natural resources and the environment. The strategies and mechanisms for the management of the Upper Mae Kuang River Basin from this study is a lesson of success that is important for creating practical benefits to natural resources and the environment. Especially in river basin areas that should be realized and jointly rehabilitated quickly

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