RESULTS AND DISCUSSION

For conformity of the results to objectives and goals of Participatory Action Research (PAR) as well as presenting the research as a sequential process, the researcher hereby classifies the results into:

Part I: Workshop on Conflict Resolution of the Core Planning Team (CPT) and the People's Party (PP) in Kon Watershed Region

The CPT workshop is a process in participatory research for the government agency, private sector, tumbol administrative organization and local people for brainstorming systematically. Content, objectives and goals of individual workshop set by the researcher are used as a guideline for their conduct. Outputs of the workshop are later preceded to the PP workshop for their and additional comments before returning to the CPT for revision. The contents of the CPT and PP workshops are as follows (Table 11 and Figure 7).

Table 11 Contents and process of the CPT and PP workshops for dispute resolution in Kon watershed management

Issues	Contents	Outputs	Participatory Techniques
A. Preliminary Phase			
Project Orientation	• Introduction of objectives and research process • Introduction of the CPT and their roles • Knowledge of ecology, watershed management, sustainable development concept and government policy on natural resources management	• The integration of researcher to project site • The CPT understand the research process • The CPT obtained a knowledge of sustainable resources management • Comments of CPT to improve the research process	• Presentation • Discussion • Public hearing

Table 11 (Cont'd)

Issues	Contents	Outputs	Participatory Techniques
B. Planning Phase			
The 1st CPT workshop: problems and opportunities identification	• Education on watershed resources utilization and socio-economic development • Presentation for the watershed resource database by GIS system • Analysis strength-weakness-opportunity and threats (SWOT) of Kon watershed	• Problems and opportunities of Kon watershed management were identified and also indicated both internal and external factors towards Kon watershed area	• Presentation • Discussion • Focus group • SWOT analysis
The 1st PP workshop: problems and opportunities consideration	• Education on watershed resource utilization and socio-economic development • Presentation of the watershed resource database with GIS system • Analysis strengths-weakness-opportunity and threats (SWOT) of Kon watershed	• Recommendation from PP on problems and opportunities of Kon watershed	• Presentation • Discussion • Focus group • Card & chart technique • SWOT analysis
The 2nd CPT workshop: establishing a vision, goals and objectives	• Improvement for an output of the 1st CPT and PP workshops • Presentation of a process to set up vision, goal and objective • Brainstorming for establishing a vision, goals and objectives	• Vision, goals and objectives of Kon watershed management	• Presentation • Discussion • Focus group

Table 11 (Cont'd)

Issues	Contents	Outputs	Participatory Techniques
The 2nd PP workshop: vision, goals and objectives consideration	• Presentation of a process to set up vision, goal and objective • Consideration on vision, goals and objectives	• Recommendation from PP on vision, goals and objectives of Kon watershed	• Presentation • Discussion • Focus group
The 3rd CPT workshop: indicating land use zoning criteria	• Recognition and improvement of an output of the 2nd CPT and PP workshops • Presentation of a process to indicate land use zoning criteria • Brainstorming to indicate land use zoning criteria	• Land use zoning criteria in Kon watershed, emphasis on both physical criteria and socio-cultural criteria	• Presentation • Discussion • Focus group
The 3rd PP workshop: consideration on land use zoning criteria	• Presentation of a process to indicate land use zoning criteria • Consideration on land use zoning criteria	• recommendation on land use zoning criteria of Kon watershed	• Presentation • Discussion • Focus group
The 4th CPT workshop: management zoning and establishing management framework	• Recognition and improvement of an output of the 3rd CPT and PP workshops • Presentation on management zoning and establishing management framework • Brainstorming for management zoning and set up the Kon watershed management framework	• management zones • Kon watershed management framework associate to the land use zone	• Presentation • Discussion • Focus group

Table 11 (Cont'd)

Issues	Contents	Outputs	Participatory Techniques
The 4th PP workshop: consideration on management zones and management framework	• Presentation on management zoning and establishing management framework • Consideration for management zones and the Kon watershed management framework	• Recommendation on management zones and the Kon watershed management framework	• Presentation • Discussion • Focus group
C. Implementation Phase			
The 1st OSCPT (on site core planning team) workshop: preparing a pilot project	• Consideration on the Kon watershed management framwork • Establishing an on-site core planning team (OSCPT) of pilot watershed (Amphoe Chiang Klang) • Drafting a pilot project	• On-site core planning team of pilot watershed (Amphoe Chiang klang) • Selection of pilot project to emphasize on crisis problems	• Presentation • Discussion • Focus group
The 2nd OSCPT (on site core planning team) workshop: pilot project implementation	• estimate the existing of crisis problems in Kon watershed • education on crisis problem: early warning system • Training on GIS application for flooding and landslide warning	• the OSCPT understand and apply GIS to flooding and landslide warning • Local Administration Organization (LAO) can more immediately warning	• Presentation • Discussion • Field survey • Training and demonstration of an operation of warning system

Table 11 (Cont'd)

Issues	Contents	Outputs	Participatory Techniques
D. Project Monitoring & Evaluation Phase			
The Key Informants Brainstorming (KIB) : establishing a project monitoring and evaluation indicators	• Explain a framework of monitoring and evaluation indicators • Brainstorming for monitoring and evaluation of appropriate community participation process (ACPP) by each indicators	• Key informants monitored and evaluated the appropriate community participation process (ACPP) • Key informants suggested the development and application of appropriate community participation process (ACPP) for other watersheds	• AIC and FSC techniques • Focus group

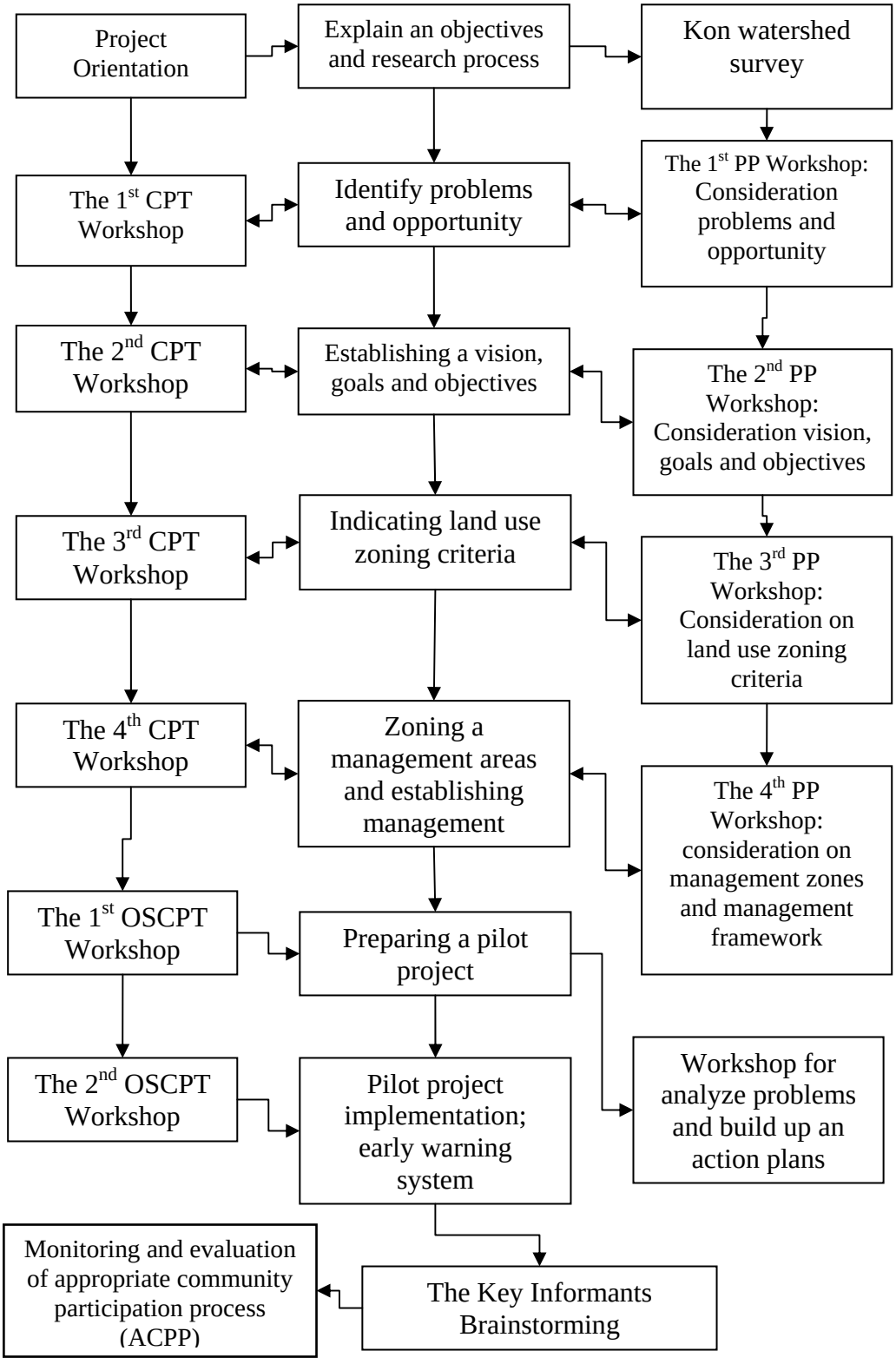

Figure 7 Contents and the process of the CPT and PP workshops for dispute resolution in Kon watershed management

Part II: Topographical and Land Use Analysis of Kon Watershed

Topographical and land use analysis of Kon watershed is a technical approach of collecting secondary data from related organizations. This approach links three techniques—GIS data information, field survey, and participatory rural appraisal (PRA). The role of co-researcher and researcher is to support in a survey of the watershed condition based on geographic-topographic characteristics, slope, land use, risk area, land slide, and to recheck a field survey information correspondence with secondary data to prepare for creating the watershed management framework. Database construction can be detailed in the following (Figure 8):

Figure 8 Topographyic survey in the Kon Watershed area and the land utilization

1. Elevation

Kon Watershed is a part of the Nan watershed area, situated at the coordinates of 19°15"-19°25"E and 10°051"-101°06"N, covering the areas around the Tung Chang, Chiang Klang, and Pua amphoes in Nan Province. The Kon watershed has a total area of 223.66 km^2, mostly land-level rather than high-elevated. The upper part of the area is also part of the Doi Phu Ka National Park.

In general, the Kon Watershed area is made up of complex mountainous regions with an elevation level between 100 m.MSL (Mean Sea Level) to 1,920 m.MSL. The watershed itself is 27 kilometers long and 15 kilometers wide. The results of an elevation analysis on the Kon Watershed shows that most of the land, which equals to 96.91 km^2 or 43.33% of the watershed area, is elevated to levels

approximately between 1,000-1,500 m.MSL. About 80.99 km^2 or 36.21% of the area is at 500-1,000 m.MSL elevation. (Table 12)

Table 12 Elevation analysis of the Kon watershed

Mean Sea Level (m.MSL)	Area (km^2)	Area Percentage
0-500	41.41	18.52
500-1,000	80.99	36.21
1,000-1,500	96.91	43.33
1500-2,000	4.35	1.94
Total	223.66	100

2. Slope

The Kon Watershed is elliptical in shape, with the main tributary being the Kon, which runs east to west. The area mainly has a steep slope. From a more detailed analysis of the slope, it was found that 45.76 km^2 (or 20.46% of the total area) had a slope steepness between 15-20%. In addition, up to 13.42% of the total area had a slope steepness of well over 35%, which can be classified as considerably high. The steepness of the slope affects the risk of soil erosion if the land is used inappropriately without thought to conservation principles (Table 13 and Figure 9).

Table 13 Slope analysis of Kon Watershed

Slope Percentage	Area (km^2)	Area Percentage
0-5%	31.23	13.96
5-10%	22.11	9.88
10-15%	36.38	16.27
15-20%	45.76	20.46
20-25%	33.40	14.93
25-30%	16.38	7.32
30-35%	8.039	3.75
More than 35%	30.01	13.42
Total	223.66	100.00

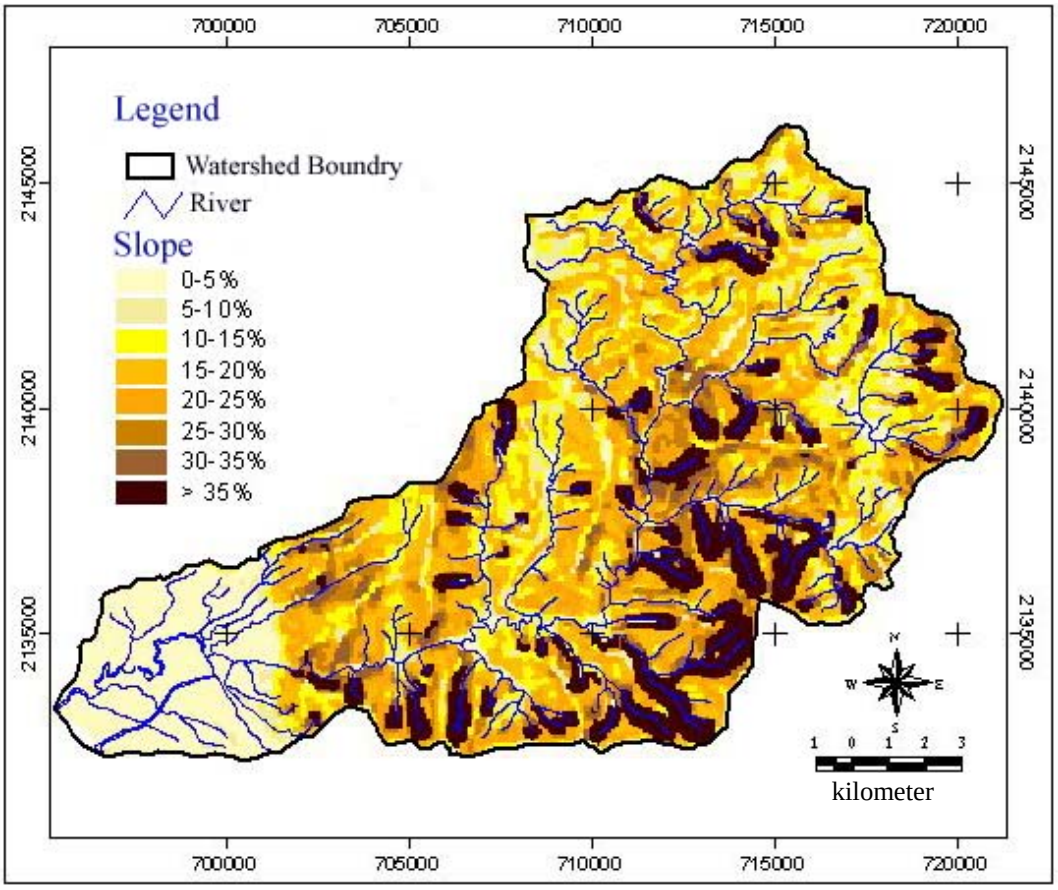

Figure 9 Slope characteristics of Kon watershed

3. Soil Characteristics

The Land Development Department reports that most of the Kon Watershed area is situated on a slope complex that possesses a soil depth of more than 150 centimeters with good drainage, with the total calculated at 197.26 km^2 or 88.20% of the watershed area. The rest of the land is composed of soil series, which is rather scattered along the lower watershed area.

From the analysis of elevation, slope, and soil characteristics, it is believed that the Kon watershed is a highly elevated, steeply sloped land and acts as an important water resource. This is especially true when considering the forested areas, composed mainly of hill evergreen forests or pine forests near the summit of the mountainous areas. Because there are various hill tribes that reside in the area, the usage of the watershed must be appropriately regulated and consistent with academic policies so that there are no adverse affects to the natural resources or environment.

Based on an analysis of the average annual rainfall in the past 30 years (from 1971-2000) done by the weather station in Amphoe Tung Chang in Nan Province, it was found that the amount of rainfall was estimated at 1,706 mm. August was the month with highest rainfall (measured at 355.8 millimeters), whereas

December had the least rainfall (measured at 4 mm.). The annual temperature averaged 23.1°C, with the relative humidity at 81% each year. A total of 1,249.9 mm. of water evaporates annually. When analyzing the wet and dry periods of the area, it was found that Kon Watershed had its wet period between the months of April and November (Figure 10). Therefore when heavy rainfall occurs, runoff water transpires relatively quickly, which results in much soil loss.

4. Analysis of Present Land Use

In categorizing land use according to watershed classification, it was discovered that about 80.45% of the Kon Watershed area is rated as a 1A watershed, which, according to regulations, means that the land should not be used for any activities. Additionally, when evaluating maps of protected areas, it was found that 99.89% of the Kon Watershed area was part of Doi Phu Ka National Park's forest conservation area, Pah Daeng Forest, the southeastern part of Nan River Forest, Nam Wa Forest, and Mae Jarim Forest. Some of the areas are within the boundaries of the Doi Phu Ka National Park, whereas the remaining 1.11% area is outside those boundaries.

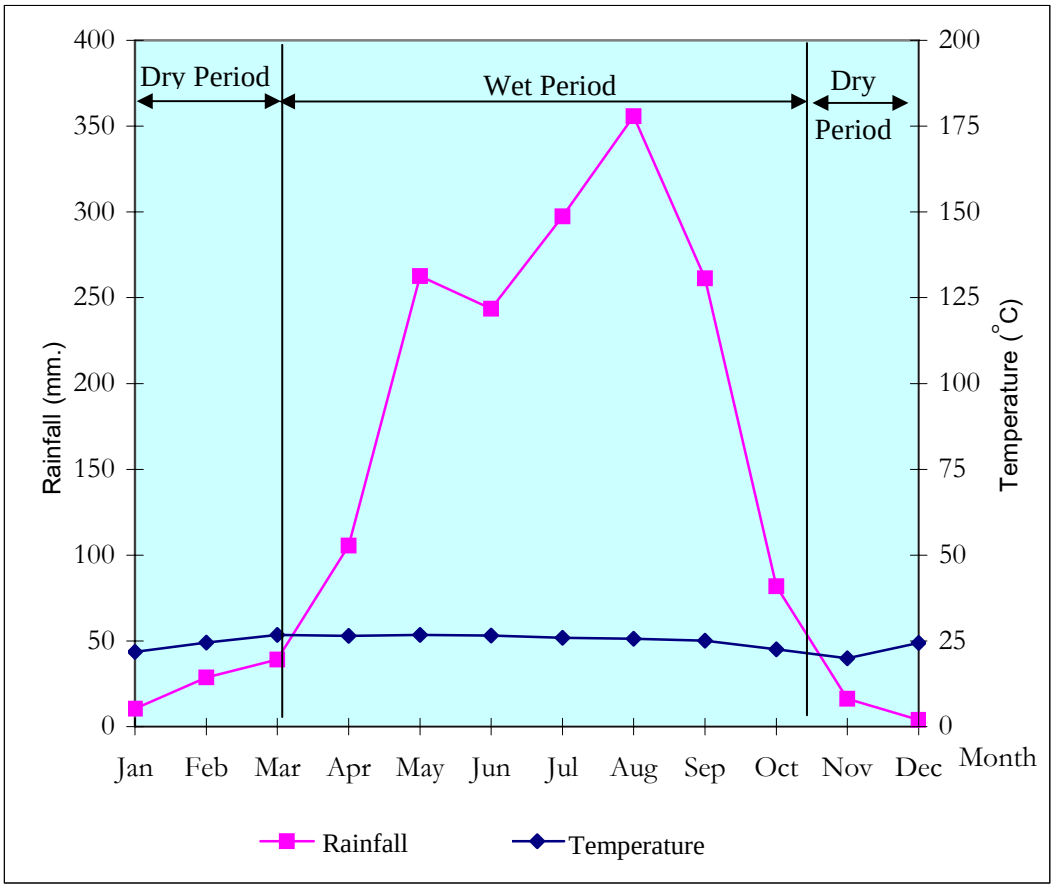

Figure 10 Wet period-dry period of Tung Chang climate station over the past 30 years (1971-2000).

The present land use and the regulations that should be applied to the watershed area are obviously not consistent with conservation policies. This is due to the fact that most of the land in the watershed area is used for shifting cultivation, while some parts have become deteriorated forests because they have been used for a long time. There are some remaining forests within the watershed area, such as the forest inside the national park. In the lower watershed area, the land has been used for paddy fields and to situate villages (Table 13 and Figure 7).

Table 14 Present land use of the Kon Watershed, Nan Province.

Land Use	Area (km^2)	Percent (%)
1. Forest	14.29	6.39
- Hill evergreen forests	8.80	3.93
- Mixed deciduous forests	5.22	2.33
- Mixed forest plantations	0.27	0.13
2. Deteriorated forest	57.02	25.49
- Deteriorated deciduous forests	21.28	9.51
- Deteriorated evergreen forests	35.74	15.98
3. Shifting cultivation	135.56	60.61
4. Level tracts of paddies	14.93	6.68
- Mixed fruits	0.57	0.25
- Rice	6.83	3.05
- Mixed crops	7.53	3.38
5. Villages	1.86	0.83
Total	223.66	100.00

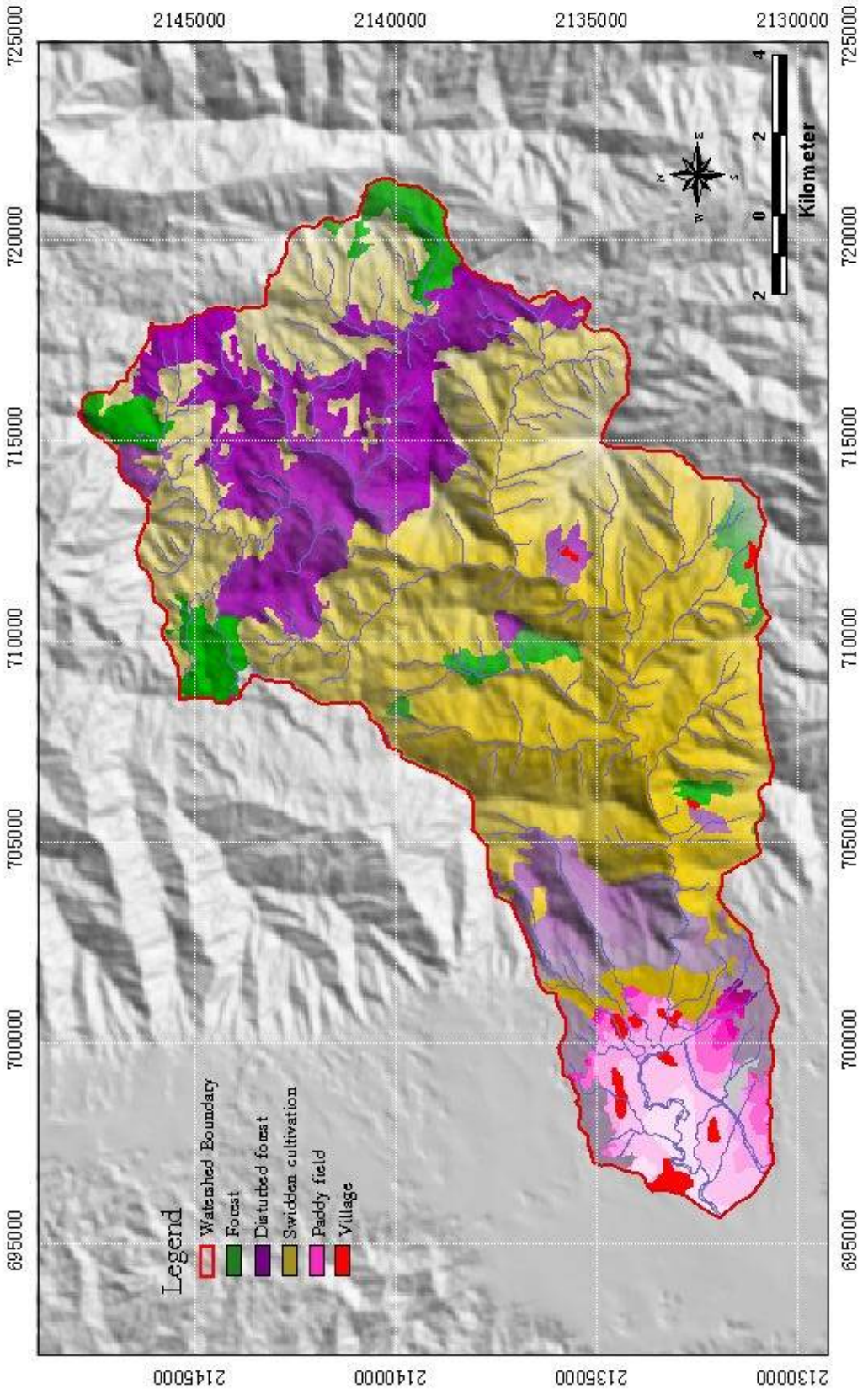

Figure 11 Present land use of the Kon Watershed

Part III: Socio-economics Characteristics of Kon Watershed

The socio-economics characteristics of Kon watershed is a data that can be fluctuated in relevance to several factors including economic catalyses, productivity, occupation, utilization of natural resources. Therefore, the researcher should focus on collecting primary data from governmental agency and local administrative organization, information related to crop cultivation, general income, and expenditure and irrigation system. Next stage, the researcher would bring all information to analyze and assess the competency of communities in economic and livelihood development situation. The detail is demonstrated in the following (Figure 12):

Figure 12 Surveying of socio-economics characteristics of Kon watershed

The Kon Watershed area spans Amphoe Chiang Klang (taking up three tambols that consist of Tambol Chiang Klang, Tambol Phaya Kaew, and Tambol Chiang Karn), Amphoe Pua (taking up Tambol Sakaad), and Amphoe Tung Chang (taking up Tambol Tung Chang). There are a total of 25 villages within the area, with 17 of those villages in the following five tambol administrative organizations (TAOs): Chiang Klang TAO, Phaya Kaew TAO, Chiang Karn TAO, Sakaad TAO, and Tung Chang TAO. The remaining eight villages are within the jurisdiction of the Tambol Sobkon municipality. The demographic status of the area can be summarized as follows:

1. Chiang Klang TAO

There are a total of six villages within the Kon Watershed in this TAO, consisting of Baan Doo, Baan Nong, Baan Kok, Baan Chee, Baan Ngew, and Baan Rom Sai for a total of 592 households that include 2,286 people. None of the villages has tap water for consumption; they depend on surface water and rainfall. Baan Doo is the only village that has water for use in agricultural purposes year-round, whereas Baan Kok and Baan Ngew have sufficient water for agriculture only during the rainy season. The other two villages do not have sufficient water. From evaluating land usage tenure, it was found that most tenure in Baan Ngew and Baan Doo were in the form of title deeds, whereas the majority of the 3 other villages had no form of tenure at all.

The people of the five villages under the jurisdiction of Chiang Klang TAO would be categorized as relatively poverty-stricken, due to their income levels. In each village, the average income per year is only 12,142 baht and thus does not reach the criteria of 20,000 baht per year. Details can be seen in Table 15.

Table 15 Socio-economics characteristics of the villages under Chiang Klang TAO

Village	Water for Agriculture			Paddies (Rai)	Plantation (Rai)	Orchard (Rai)	Dry season farming (Rai)	Total area (Rai)	Income : Baht / Person / Year
	Suffi-cient[1]	In rainy season[2]	Insuffi cient[3]						
Baan Doo (title deed)	✓			290	74	235	84	510	13,920
Baan Nong			✓	-	969	196	-	1,895	10,781
Baan Chee			✓	-	375	32	-	762	-
Baan Kok		✓		120	132	426	132	1,410	11,687
Baan Ngew (title deed)		✓		120	132	426	132	550	12,180
Baan Rom Sai			✓	-	115	60	-	175	-
Total	1	2	3	530	1682	1315	348	5,127	12,142[4]

Note: 1. Sufficient year-round 2. Sufficient only in the rainy season
3. Insufficient 4. Average
625 rai = 1 km^2 35 baht = 1 US dollar

Source: Department of Community Development (2003)

2. Phaya Kaew TAO

There are four villages in the Kon Watershed area that is under the jurisdiction of the Phaya Kaew TAO: Baan Phaya Kaew, Baan Pah Nam Yoi, Baan Gawet, and Baan Muang. There are 1,368 local hill tribe people living within these villages, making up 330 households. Every village has tap water to use, quality surface water sources, and rainwater for use in consumption and agriculture. Baan Phaya Kaew and Baan Pah Nam Yoi have insufficient water for consumption, while only Baan Muang has enough water for agricultural purposes year-round. The 3 remaining villages have insufficient water for agricultural use. When evaluating the tenure of land use, it was found that the majority of the tenure Baan Muang and Baan Phaya Kaew is in the form of NS.3K (a document certified by authorities that the land is being used, with maps of the area created with aerial images taken of the area). The other villages do not have tenure.

The people in the four villages under the jurisdiction of Phaya Kaew TAO would be categorized as very poverty-stricken due to their income levels. In each village, the average income per year is only 9,918 baht and thus does not reach the criteria of 20,000 baht per year. Details can be seen in Table 16.

Table 16 Socio-economics characteristics of the villages under Phaya Kaew TAO

Village	Water for Agriculture			Paddies (Rai)	Plantation (Rai)	Orchard (Rai)	Dry season farming (Rai)	Total area (Rai)	Income : Baht / Person / Year
	Suff-cient[1]	In rainy season[2]	Insuffi cient[3]						
Baan Phaya Kaew (NS.3K)			✓	120	71	74	-	82	11,157
Baan Pah Nam Yoi			✓	-	750	52	-	1,200	8,495
Baan Gawet			✓	16	932	250	-	1,690	9,722
Baan Muang (NS.3K)	✓			50	30	80	132	595	10,297
TOTAL	1	-	3	186	1,783	456	132	4,305	9,918[4]

Note: 1. Sufficient year-round 2. Sufficient only in the rainy season
3. Insufficient 4. Average
625 rai = 1 km^2 35 baht = 1 US dollar
Source: Department of Community Development (2003)

3. Chiang Karn TAO

Baan Wang Kaa is the only village within the studied area that is under the jurisdiction of the Chiang Karn TAO. The village consists of 65 households with 275 people. There is sufficient clean water for consumption purposes, while water for agricultural use is sufficient only in the rainy season. The village takes up 412 rai of

area, with 95 rai used for paddies, 83 rai used for plantations, and 35 rai used for orchards. Only 13 rai can be used for dry-season farming. Most of the land possesses a title deed.

4. Sakaad TAO

Four villages in the Kon Watershed area are under the jurisdiction of the Sakaad TAO: Baan Sakaad Nuea, Baan Sakaad Klang, Baan Sakaad Tai, and Baan Phu Kok. These villages consist of 529 households, totaling 2,202 people in a total combined village area of 16,662 rai. The majority of the villagers work on plantations or orchards.

The level of income earned by the people in Baan Sakaad Nuea would be considered as a little over the poverty level, with an average income of about 20,052 baht per year. Villagers in Baan Sakaad Klang would be considered poor, with an average income of only 11,759 baht per year. However, in Baan Sakaad Tai and Baan Phu Kok, the income level is very low and therefore the villagers would be classified as very poor. The overall picture for the income level of the villages in this tambol would, therefore, be relatively poverty-stricken, as the average annual income per year per person is much lower than 20,000 baht. Details can be seen in Table 17.

Table 17 Socio-economics characteristics of the villages under Sakaad TAO

Village	Water for Agriculture			Paddies (Rai)	Plantation (Rai)	Orchard (Rai)	Dry season farming (Rai)	Total area (Rai)	Income: Baht / Person / Year
	Suff-cient[1]	In rainy season[2]	Insuff icient[3]						
Sakaad Nuea			✓	-	583	235	-	962	20,052
Sakaad Klang			✓	-	11,045	99	-	1,200	11,759
Sakaad Tai			✓	-	1,762	124	-	8,000	3,799
Phu Kok			✓	-	960	460	-	6,500	5,244
Total			4	-	14,350	918	-	16,662	10,213.5[4]

Note: 1. Sufficient year-round 2. Sufficient only in the rainy season
3. Insufficient 4. Average
625 rai = 1 km^2 35 baht = 1 US dollar
Source: Department of Community Development (2003)

5. Tung Chang TAO, Amphoe Tung Chang

Baan Pang Kae is the only village within the studied area that is under the jurisdiction of the Tung Chang TAO. The village consists of 151 households with 1,682 people. There is sufficient clean water for consumption purposes, while water for agricultural use is sufficient only in the rainy season. The village takes up 25,400 rai of area, with 2,140 rai used for plantations and 2,260 rai used for orchards. There

are no paddies and no areas used for dry-season farming. Most areas do not possess tenure.

6. Tambol Sobkon Municipality

Tambol Sobkon municipality has nine villages located within the studied area under its jurisdiction, consisting of: Baan Siri-Udom, Baan Chiang Khom, Baan Jadee 1, Baan Jadee 2, Baan Sobkon 1, Baan Sobkon 2, Baan Naamka, Baan Poon, and Baan Kanna. There are 2,053 households with a total of 6,855 people. Most of the villages do not have sufficient water for agricultural purposes. The villages make up a total area of 13,373 rai, with most of the land used as paddies and plantations. Most of the villagers have title deeds to the land or NS.3 (a document certified by authorities stating that the land is being used, which includes maps done of the area through non-aerial photographs). The average annual income is 18,667 baht, which is lower than the 20,000 baht per year criteria. The demographic details of the villages can be seen in Table 18.

Table 18 Socio-economics characteristics of the villages under Sobkon municipality

Village	Water for Agriculture			Paddies (Rai)	Plantation (Rai)	Orchard (Rai)	Dry season farming (Rai)	Total area (Rai)	Income: Baht/ Person/ Year
	Sufficient [1]	In rainy season [2]	Insufficient [3]						
Siri-Udom		✓		354	615	102	-	1,071	-
Chiang Khom		✓		215	501	101	-	817	23,000
Jadee 1		✓		300	150	100	100	650	18,000
Jadee 2		✓		400	80	350	450	1,230	20,000
Sobkon 1	✓			1,650	250	350	1,200	3,450	23,000
Sobkon 2	✓			200	70	50	50	370	25,000
Naamka	✓			700	300	95	600	1,695	23,000
Kanna		✓		500	500	1,000	30	2,000	18,000
Poon		✓		250	1,000	800	40	2,090	18,000
Total	3	6	-	4,369	3,466	2,948	1,900	13,373	18,667[4]

Note: 1. Sufficient year-round 2. Sufficient only in the rainy season
3. Insufficient 4. Average
625 rai = 1 km^2 35 baht = 1 US dollar
Source: Tambol Sobkon Municipality (2003)

From an analysis of the demographic factors in communities residing within the Kon Watershed area under the jurisdiction of five tambols, several interesting factors were discovered. Most people in the communities are occupied in agriculture, especially in plantation work, with some working in orchards. Because of this, water is very important in production results for the communities. Rainwater is, however, still the main water source, as irrigation systems have not yet sufficiently covered the area. Dry-season farming thus cannot be done, resulting in the poverty-stricken

conditions of the people, almost all of whom earn considerably less than 20,000 baht each year.

The area's poverty and the lack of plans for natural resources management have resulted in rapid deterioration of the natural resources found in the watershed. Using the land for agricultural purposes without applying soil and water conservation principles on the upper watershed area has created a situation in which water for consumption is lacking. In addition, the chemicals used in agriculture have also had direct impact on the quality of water. These deteriorations in the natural resources have all resulted in disputes in the use of the resources. It is, therefore, imperative that the communities have the opportunity to participate in watershed management, with the local communities working with the government in order to solve the aforementioned problem.

Part IV: Conflict Resolution Process in Kon Watershed Management

Conflict resolution process in the Kon watershed management is implemented by CPT in the CPT and PP workshop. This workshop aims at establishing the cooperation among stakeholders within the Kon watershed to reduce emerging conflicts in Kon watershed. In particular, the utilization of natural resources that lack of appropriate conservation operation. From that reason, the natural resource was damaged increasingly, including soil degradation, deforestation in head water supply and non-appropriate agriculture. All of several factors aforementioned are as a result of poverty and livelihood impact.

Therefore, conflict resolution in a watershed region toward natural resource consumption should employ an analysis of reflexive real problem for establishing management framework to associate to main conflict components, which consists of governmental policy, people's need and resource's potentiality. These components will affect to an awareness of using natural resources in such an effective conservation way and contributing to communities in Kon watershed to design criteria or measure of natural resource management in equality.

Since the researcher had designed community participation model for conflict reduction in Kon watershed through the process of CPT establisment as a key mechanism. As a result, the CPT plays an apparent role in designing the practice for stakeholders in managing natural resources in the Kon watershed region. Nonetheless, the designation of PP mechanism and its role will be a tool for a consensus building to reduce conflicts to create an enforcement to the operation of the CPT

The main content of CPT and PP workshop is developed and initiated by the CPT. Then, initiative description or outputs from the CPT will be brought to PP forum for their openness criticism prior to a final revision and suggestion.commit In the final stage, the researcher will act as a process facilitator to provide and such a transparent workshop and aeration of participation process. The advocated local agenda emerging from the CPT and PP workshops will lead to promote a consensus building. (Table 19 and Figure 13, Figure 14)

Table 19 The advocated local agenda emerging from the CPT and PP workshops

Conference agenda	Advocated local agenda from CPT&PP workshops	Guidelines for ACPP Improvement
A. Preliminary Phase		
CPT and several sectors totalizes 80 persons participate in project orientation workshop	• Empowering conservation knowledge for the people of Kon watershed region • Expectation of PP in CPT taking an extensive role in conflict resolution and governmental agency paying intention on issues • Some involved sectors have not been selected CPT committee	• Identifying and acknowledging process methodology and research goal to CPT and PP continuously. In addition, demonstration of information in the workshops and releasing campaign • Introducing responsibility and role of CPT and PP to board committee. • Submitting institutional list to Nan provincial governor for additional CPT board.
B. Planning Phase		
CPT&PP1 workshops : problems and opportunities analysis -50 participants in the CPT workshop -75 participants in the PP workshop	• Natural resources in Kon watershed was damaged rapidly, especially deforestation in upper land forest for shift cultivation. • Problems toward Kon condition should be utilized in PT&PP planning	• Research team explored situation in field for examining data accuracy • Researcher set up GIS database about natural resources and environmental condition of Kon watershed
CPT&PP2 workshop: Establishing a vision, goals and objectives - 49 participants in the CPT workshop - 75 participants in the PP workshop	• The vision should span issues in natural resource rehabilitation and quality improvement of people in the Kon watershed • Goals and objective for Kon watershed management should cover every critical issue of problem at local level	• Vision should be concise so the Kon people will easily comprehend • Goals and objective should be define to cover theoretical work, conservation, restoration, pollution control , socio-economic development and effective administration

Table 19 (Cont'd)

Conference agenda	Advocated local agenda from CPT&PP workshops	Guidelines for ACPP Improvement
CPT&PP3 workshop: Establishing management land use zoning criteria - 50 participants in the CPT workshop - 70 participants in the PP workshop	• Topologic characteristics in land use zoning should not be considered as a merely criterion. In particular, regulation for an allocation of a protected area. • People who settle permanently should have their rights for living in the watershed region	• CPT and PP contribute in designing criteria by taking topologic and socio characteristics into consideration • Designed criteria should be investigated by the researcher for possibility of land use zoning
CPT&PP4 workshop: Establishing management zones and managing guidelines of land use zoning. -45 participants in the CPT workshop - 70 participants in the PP workshop	• GIS system to managing guideline for land use zoning should be clarify • CPT & PP lack of effective skill in utilization of GIS system to establishing a guideline for land use zoning	• Researcher incoporated with CPT and PP broght GIS system for establishing guideline of land use zoning in a context of work. • Researcher supported GIS specialist in the CPT & PP operation process.
C. Implementation Phase		
CPT workshop in local livel1: Creating an action plan - 35 participants in the CPT workshop	• Accelerated the pilot project to the watershed community prior to an occurrence of serious effects on flooding and land sliding • Supporting cooperation of academic institute in watershed.	• Researcher organized CPT workshop for creating an action plan • CPT participates in selection of supporting institute relevant to the project operation
CPT workshop in local livel2: Project implementation -40 participants in the CPT workshop	• Support of budget for academic institutes to educate the watershed community and provide a state-of-art technology like computers for the GIS development to an early warning system of flash flood and land slide	• Researcher must explain to CPT for adaptive early warning system related to natural disasters • The training process should be involved in the early warning system to local administrative staffs of organization

Table 19 (Cont'd)

Conference agenda	Advocated local agenda from CPT&PP workshops	Guidelines for ACPP Improvement
D. Monitoring & Evaluation Phase		
Barnstorming key person : Creating a system for Monitoring & Evaluation - 15 participants in each CPT vs. PP workshop (total 11 times)	• CPT & PP need practical monitoring and evaluation approach, creating action plan and indicated measures • Evaluation and monitoring should be reported to several sectors and people in Kon watershed continuously.	• The key role of CPT&PP actors is to participate in designing indicator of evaluation and monitoring process with researcher. • CPT&PP participate in providing recommendation of research methodology, when accomplished each of workshops. • Selected key informants participate in research evaluation process consist of multi-stakeholders, governmental representatives, local administrative organizations and the community leaders.

Figure 13 The CPT Workshop

Figure 14 The PP Workshop

In the workshops of the core planning team (CPT1) and the results of the meetings set up to listen to the opinions of the people's party (PP1), some conclusions could be made for the Kon Watershed planning and management. The important concepts are discussed below.

1. Analyzing Problems

One important concept was analyzing the problems in the Kon Watershed. These problems were categorized into five main areas: natural resources; economics; quality of life; environmental pollution; and management. Results are shown in Table 20.

Table 20 Analyzing problems in the Kon watershed area

Problems	Cause of the Problems
1. Natural Resources Aspects	
1.1 Soil erosion	• No plants or forests covering the topsoil • Deforestation
1.2 Soil deterioration	• Inappropriate agriculture and lack of conservation techniques • Using excessive chemicals • No forests covering the soil • Repeated plantings of certain crops
1.3 Lack of land for earning income	• Expanding land for investors • Vague land borders • Insufficient lands for earning income • Traditional values of some groups of people in using large tracts of land for agricultural purposes
1.4 Lack of water in the dry season	• Deforestation • No storage of water from natural sources • Utilizing swidden agriculture
1.5 Floods during the rainy season	• Logging of forests • Utilizing swidden agriculture
1.6 Kon is getting shallower	• Soil erosion • Bank destruction
1.7 Forest fires	• Burning the area to engage in swidden agriculture • Hunting wild animals • Burning to create hay for animal feed
1.8 Logging and deforestation	• Expanding agricultural land or residences • Lack of knowledge and understanding in utilizing land • A competitive economic environment that encourages more income earning • Engaging in swidden agriculture
1.9 Near-extinction of wild animals	• Hunting animals • Setting forest fires

Table 20 (Cont'd)

Problems	Cause of the Problems
2. Economics Aspects	
2.1 Debt	• Low income • Low agricultural production • Lack of savings in households
2.2 Agricultural produce yields low income	• Uncertainty in prices and the agricultural market • Low agricultural yields per rai • High cost of seeds • Middlemen with restrictive or pre-set prices
2.3 High production cost	• The land is steep and elevated, not suitable for agriculture • The cost of investments are high
2.4 Lack of a market to support the product	• Supplies in excess of market demand • Lack of agricultural modification of the products into other forms
2.5 Unemployment	• No available work in the area
2.6 Tourism activities are unable to create income	• Few tourist spots • Lack of budget for developing tourist areas • Government authorities are not interested in developing tourist areas • Lack of public relations
3. Quality of Life Aspects	
3.1 Lack of schooling, especially in the elevated areas	• Incomplete coverage of all tambols with regards to schooling opportunities • Lack of supporting budget for educational supplies • Lack of scholarships
3.2 Lack of good public utilities	• Insufficient public utilities • Insufficient quality in maintenance/care • Low quality of the environment • Lack of good garbage management
3.3 Inconvenient transportation	• Pot-holed streets (through water logs) • Substandard streets • Some community areas are in conserved forests, thus forcing people to ask for permission from the Royal Forestry Department before establishing roads
3.4 Lack of tap water in some areas	• Insufficient amount of tap water
3.5 Conflicts in the community	• Unclear system in community administration • Conflicting goals and benefits within the communities
3.6 Problems with the young people	• The spread of drugs
3.7 Problems of addictive substances	• Open market for alcohol

Table 20 (Cont'd)

Problems	Cause of the Problems
3.8 Missing or fading local traditions	• Younger generations are not interested in traditions • Economic conditions force a decrease in traditional festivities
4. Environmental Pollution Aspects	
4.1 Chemical residue in soil and water	• Farmers use chemicals with lack of understanding and knowledge
4.2 Trash, particles, and breeding grounds for disease	• No garbage collection available or inefficient garbage collection • Insufficient or deplorable garbage disposal areas
4.3 Environmental deterioration	• Lack of good urban planning • Lack of cemetery management
4.4 Air pollution	• Using insecticides or weed killers • The smell from garbage • The smell from animal excrement • The burning of areas for agricultural purposes, which results in smoke covering the area
5. Management Aspects	
5.1 Coordination between various authorities is still not effective	• The disappearance of some authorities after the government system reformations • Individuals in the various authorities lack management skills, such as province administration organizations, tambol administrative organizations, and municipalities
5.2 Communication between government authorities	• Slow service • Rude to customers • Inefficient service • Problematic diagnosis
5.3 Existing laws do not cover the problems that occur	• The issuance of laws is not consistent with real conditions
5.4 Low amount of budget for the communities	• The government sets aside little money for the community budgets
5.5 Lack of community participation	• Lack of opportunities for the people to express opinions • Lack of coordination between the government, the private sector, and the people

2. Analysis of Strengths, Weaknesses, Opportunities, and Threats (SWOT)

From the SWOT Analysis, it was discovered that the Kon Watershed area was in a deteriorated state, especially when considering the decreasing forest areas

and the lack of water resources. In addition, there is also the problem of illegal land possession. Details are found in Tables 21.

Table 21 SWOT analysis of Kon Watershed

Strengths (+)	Weaknesses (-)
1. The local people are ready to cooperate with government organizations in conserving natural resources in accordance with government policies 2. The area is suitable for conservation development as well as the promotion of mixed agriculture (planting cool-climate flowers, local flowers, etc) 3. The forests along the water is rich and full 4. Education reaches all areas	1. Massive deforestation 2. Soil deterioration 3. Communities lack knowledge and understanding in managing / utilizing the forest in a sustainable way in accordance with conservation principles 4. Vague land ownership and lack of land distribution that would ensure future security, both from the residents themselves and through trespassing into forests 5. Low agricultural yields in the area, creating the need for more land 6. Old belief systems that promote wasteful use of land 7. Inconvenient transportation in the area for government authorities to go to 8. Some people still engage in logging 9. People think that throwing garbage or waste into water sources is a normal matter 10. People still believe and are familiar with the use of chemicals in agriculture 11. Lack of large water storage facilities for use in the area
Opportunities (+)	Threats (-)
1. The trend of conserving natural resources has pushed conservation in the area 2. The critical condition of a nearby water source has stimulated local people to think about conserving the Kon Watershed area 3. The government has clear policies for increasing the effectiveness of managing the development of the Kon Watershed area	1. Capitalism has created the desire for a higher quality of living through focusing mainly on economic status 2. Failures in the management of conservation areas by the government have created distrust in the people 3. There is behavioral copying done by the people, as can be seen from trying to futilely imitate the better lifestyle of nearby communities 4. Unclear and unsuitable government policies for solving problems 5. Outsiders have trespassed into the area to use the higher lands 6. The new management structure of government authorities is vague, with obstacles inherent in its own operations

3. Vision

Both committees (CPT & PP) have suggested many visions, all of which are rather similar in concept. An overall vision that concludes and covers all the important points could be said as follows:

"Kon Watershed is life-together we divide management zones, ensure the balance of the ecosystems, and increase the quality of life."

4. Goals

After establishing a unified vision, both committees began suggesting work goals that would enable the vision to be reached. Five goals were selected, as follows:

1) Let the people, communities, and government and private organizations would participate in dividing management zones in the Kon Watershed area in a way that is consistent with the properties of the land

2) Conserve, restore, and utilize the natural resources and environment of Kon Watershed in a sustainable, valuable, and fair way.

3) Control, prevent, and lessen environmental pollution to standard levels for the quality of human, plant, and animal life in Kon Watershed

4) Let the people have the strength and abilities to raise their economic development, public utilities and social structure in order to increase the quality of life for people in the Kon Watershed

5) Let the people in the upper Kon Watershed receive educational opportunities in order to increase their knowledge and indigenous skills consistent with the available natural resources in the area

5. Objectives

After the two committees established goals in working to set up land management zones, 9 objectives were created together for use in working towards achieving the established goals.

1) Establish land management zones in the Kon Watershed area through participation by the local people based on appropriate conservation, maintenance, restoration, and utilization of the land.

2) Renovate the management, laws, budget, participation, and techniques of the various organizations in the Kon Watershed so they would become more effective and efficient

3) Restore deteriorated natural resources to full richness and support the balance of ecosystems

4) Control, prevent, solve, and eliminate pollution in water sources and other environments to avoid adverse affects on health and quality of life of people living in the Kon Watershed area

5) Enable the communities to be self-sufficient, work together as a strong team, and have the potential to build a network of learning and manage the community

6) Promote and develop professions for the people in the Kon Watershed area so they would have a better life and be able to raise their economic and social status continuously

7) Create education plans, public utilities, and basic infrastructures for communities in the Kon Watershed area so they all may have equal opportunities for development

8) Create community knowledge, awareness, and conscience in loving and caring for their local areas, natural resources, and environment within the Kon Watershed area

9) To disseminate knowledge, create a learning network that is consistent with the area's development

6. Division of Management Zones by Land Usage in Kon Watershed

The tool used in the division of Kon Watershed into management zones is an information system, which is useful in analyzing and evaluating results for the area. To use an information system, there is a need to input, analyze, and collect data in standard ways, before the information is pulled from the information system through cross-tabulation in order to make decisions regarding the division of land management zones.

6.1 Criteria used for the division of the area into land management zones can be summarized as follows:

1) Preservation Zones

1.1) Areas that are still covered with rich forest

1.2) Areas that should be conserved for tourist purposes, such as caves and waterfalls

1.3) Areas with soil that is shallower than 25 cm, which would be unsuitable for agricultural purposes

1.4) Areas on the banks of both sides of a water source and all areas within a 50-meter radius

1.5) Areas with a slope steeper than 35%

1.6) Areas that are historically or culturally important

1.7) Areas in protected areas or conserved forests

1.8) Areas that would have violent impacts on the ecosystem, such as areas that are the sources of water, areas with difficult-to-find plant, areas with food, and areas that are home to wild animals

1.9) Areas for security

2) Utilization zones

2.1) Areas for earning income and the previous locations of communities

2.2) Areas with soil deeper than 25 cm

2.3) Areas with a gradual slope of less than 35%

2.4) Areas that the Sustainable Development Project has already organized

2.5) Areas located more than 50 meters away from both banks of a body of water

2.6) Areas of deteriorated forest that is suitable for distribution to farmers who have no land

2.7) Areas outside of protected places

2.8) Areas that would not have violent impacts on the ecosystem and natural disasters

2.9) Areas that have potentially important minerals, suitable for the country’s economic development

2.10) Areas outside of those that should be conserved or protected

6.2 Land Management Zones in the Kon Watershed Area

1) Preserved and protected areas are locations within the watershed area suitable for conservation, such as water sources, places that have high risk of

natural disasters and environmental impacts through the unsuitability of the land to agriculture (such as shallow soil, steep slopes, low soil nutrients) or those that have delicate ecosystems. In the present watershed area, some locations fit these descriptions. They are classified into 2 subcategories for suitable regulations and conservation/restoration plans, as follows:

1.1) Preserved or protected places without conflicts are those that are suitable for preservation or protection. In the present state, these areas are within the boundaries of areas protected by law and have not been trespassed into, or are within areas that already have government policies or projects for restoration.

1.2) Preserved or protected places that have conflicts are those that are suitable for conservation and protection; however, in their present state they have been utilized by people without following principles of natural resource and environmental conservation, through such activities as farming and residence establishment. These also include areas that are outside the jurisdiction of conservation laws.

2) Utilization zones are areas that have the potential for beneficial uses other than the conservation of natural resources and environment, due to the factors such as the following: these are level tracts of land with deep, rich soil and thus have the potential for various kinds of agriculture, or are already residential areas. The category is divided into the following two subcategories:

2.1) Utilization zones that have no conflicts are areas suitable for use in a variety of ways. At present, utilization of these zones exists but may not be consistent, or these areas may have been utilized in ways that were not proper in accordance to academic principles. The people who utilize these lands are those who have a legal right to do so.

2.2) Utilization zones that have conflicts are those that are appropriate for agricultural or residential use, but at present may or may not be utilized. These areas are in protected places, part of the national park, or legally preserved through other methods – meaning those who utilize these areas are doing so illegally.

6.3 Maps of Land Management Zones in Kon Watershed Areas

The available information system was used in accordance with the criteria by the core planning team and the people’s party to establishing land management zones. Information such as the topographical characteristics, biological characteristics, demographics, and title deeds were all used in establishing land management zones. The information was analyzed and filtered into pieces of information that could actually be used, as shown Table 22 and Figure 5.

Table 22 Management zones in Kon watershed areas

Land Management Zones	Area (km^2.)	Area (rai)	%
1. Preserved and protected areas	163.02	101,888	72.89
1.1 Preserved and protected areas with no conflicts	119.63	74,770	53.49
1.2 Preserved and protected areas with conflicts	43.39	27,118	19.40
2. Utilization zones	60.64	37,897	27.11
2.1 Utilization zones with no conflicts	20.95	13,091	9.36
2.2 Utilization zones with conflicts	39.69	24,806	17.75
Total	223.66	139,784	100.00

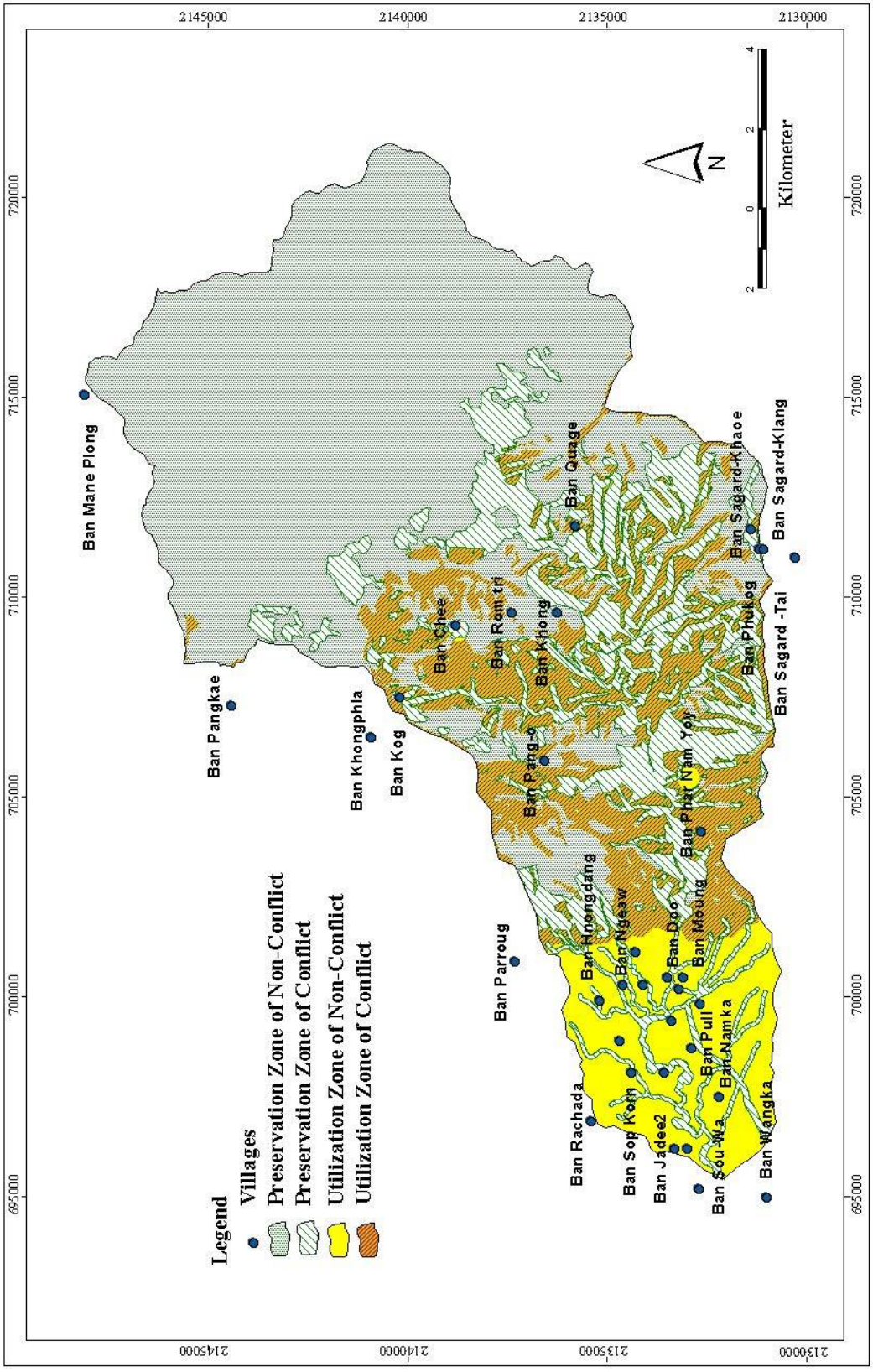

Figure 15 Map of 4 types Management zones in Kon watershed area

6.4 Land Allocated Assessment for Determined Land Use with Conflicted Utilization Zone

The assessment terminological of determined land use for providing services to users with a portion of 15 rai per one household is only specific measure used for natural resources management in conflicted utilization zone. The allocation of land management based on geographical database reveals to the limitation of land capability. These measures lead to conclusions as follows;

1) Agrarians who live or settle in a non-conflicted utilization zone do not perceive considerably.

2) As stipulated for the allocating land measure, land classified as preservation land is allocated to land user. Forest land of these categories must locate in conflicted utilization zone and remarkable high land capability appropriate for supported agriculture activities.

3) The meaning of “community group” refers to communities that have interconnection area.

4) People who live outside the Kon watershed area do not perceive considerable.

The purpose of scenario analyses based on communication technological information database indicated the area of Utilization with conflict zone covering 24,806 rai is separated by two typical land use areas, following as land capability. Include, land zone that appropriate for provide agriculture service but located outside area had covered 5,706 rai, land allocated area for provide only agriculture utilization is divide portion 15 rai per 1 household had covered 17,160 rai. partial of land use certificate can allocate agriculture land to each individual household include the 11 following communities. (Table 23 and Figure 16)

Group 1: compose of Ban Kok, Ban Shi, Ban Romsai, and Ban Nong include 370 households.

Group 2: compose of Ban Keaw include 117 households.

Group 3: compose of Ban Sakaad Neaua, Ban Sakaad Klang, Ban Sakaad Tai and Ban Pu Kok include 529 households.

Group 4: compose of Ban Pa-Num-Youe include 108 households.

Group 5: compose of Ban Pang Kae include 151 households but most of individual households are utilizing land fertilizer in outside watershed boundary (amount of land identified land capability are 300 rai).

Table 23 Demonstration of land use categorized followed criteria of identifying land use for agriculture holding

Category of land use security measure	Household	Land Covered (rai-unit)	% of Watershed Area
1. Preservation and protected legal area	-	74770	53.49
2. Restoration of soil, water resources, forest arena controlled.	-	27118	19.40
3. Enhance utilization zone.	-	13091	9.36
4. High agriculture capability zone.	-	24806	17.75
4.1 Land appropriate for supported agriculture activity but located outside land allocated.	-	5,706	4.08
4.2 Land allocating for each individual household divided proportion is 15 rai per 1 household	-	17,160	12.28
1) Ban Nong	119	5,550	3.97
2) Ban Shi	68		
3)Ban Kok	100		
4) Ban Rom Sai	83		
5) Ban Pa Num Youe	108	1620	1.16
6) Ban Keaw	117	1755	1.25
7) Ban Sakaad Naeu	66	7,935	5.68
8) Ban Sakaad Klang	176		
9) Ban Sakaad Tai	163		
10) Ban Pu Kok	124		
11) Ban Pang Kae	151**	300	0.21
	1,275	-	-
Total watershed area		139,787	-

Note** Partial population utilize land outside the watershed area

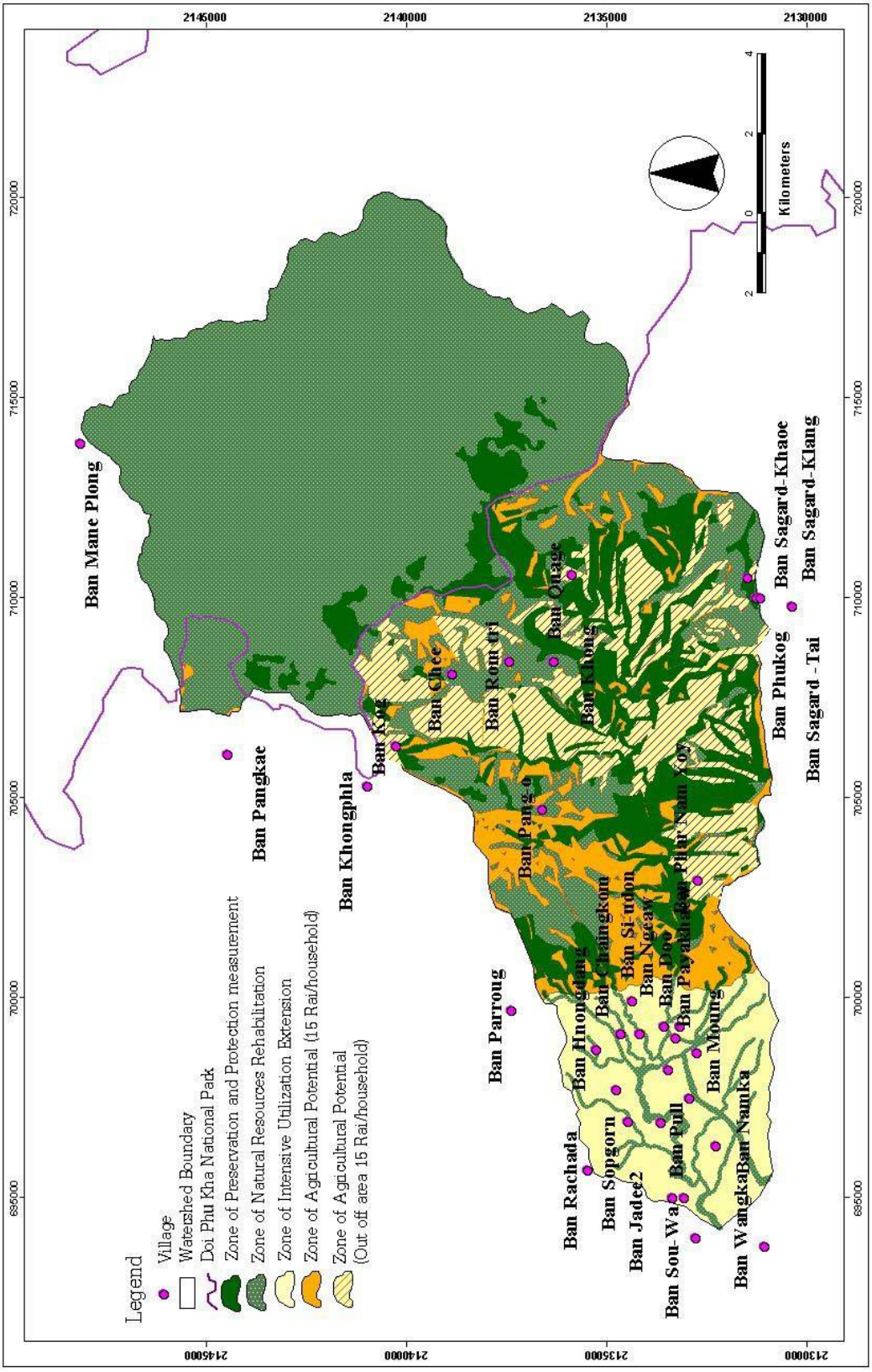

Figure 16 Land allocated assessment for determined land use with conflicted utilization zone

7. Emergency plan of natural resources management in Kon Watershed

1) Determined land use boundary survey plan

Emergency plan is necessary for continuing determined land use pattern strategies. The priority of these plans is formulating CPT situation. The CPT situation selected by local governor and their important roles compose of proceeding environmental resolution plan and engage cooperative of multi-stakeholder partnership including cooperative multi-stakeholder partnership for participation design land use boundaries survey. The initial process should begin with organizing community decision-making participation process to seek for an acceptance. The resultant accepted reflective community needs assessment adapted to drawn mapping, identify land ownership and finally define plant crop.

From the investigation of the Kon watershed case study , the researcher suggests that should to manage database can shown land management controlled whole all country and forest protection zone physical, also defined authorities managed directly by government authority or private ownership for restricted criteria of approval land ownership and easier to investigate and protect destruction forest situation by land tenure.

2) Water resources integrated plan

The main objective of water resources management supply provides for user in watershed area to promote agriculture activities. Therefore, it should be formulate water resources management plan that accordance to environmental circumstance and can support agriculture activities. The content of plan procedure emphasizes on the development of small water resources to have enough capacity to support agriculture supplies and household life. The priority practices must resolve a prior conflict on water resources, especifically, between people on upper catchments basin and people in lower catchments basin.

3) Building capacity of land use and promotion of sustainable development plan

The main objectives of these plans are building capacity of land use for more effective by a development of agricultural productive system, modification of agriculture produce, marketing plan setup, community enterprise establishment and eco-agriculture practice promotion for reducing chemical fertilizer utilization. The main organizations to take accountability are Department of mineral Resources, and Department of Agriculture Development.

4) Promotion of community strengthening plan

The focus point of these plan is to promote community strengthening and enhance quality of life by developing community leadership capacity and embody

environmental consciousness in youth groups including to establish multi-stakeholder partnership network for proceeding conservation practice.

8. Project Planning of Kon watershed's natural resource management

Creating Project Planning is the most important of systematical planning to bring strategic plan reformed to actual practical outcome accomplishment. The sharpen project planning should focus on people participantion on natural resource management in the Kon watershed. Moreover, the procedure must be dependent on several factors such as local issue, vision, goal, objective and natural resource allocation by identifying activities project planning according to limited land use pattern. The project planning activities can be listed in Table 24.

Table 24 Project plan of resources management through multi-stakeholder cooperation model in Kon watershed.

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
1.Protected area without conflict	1.1 Capacity building of organization such as government agencies and civic organization for maintaining upper land forest.	1) Enhancing Conservation coordination/ Surveying forest area with Doi Phu Ka National Park staff.	✓					1) Kon head watershed management unit. 2) Doi Phu Ka National Park. 3) Local administrative organization
		2) Training on forest reservation for forest protected staff.	✓					
	1.2 Building people participant in forest reservation.	1) Setting up volunteer group platform for protected community forest and supporting facilitate procurement i.e. social service, operational equipment and employment benefit.	✓					
		2) Supporting civic organization / Local administrative organization participant in monitoring forest area, particularly previous community accountability of forest conservation.	✓					

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
1. protected area/conservation area without conflict (cont'd)	1.3 Restoration and rehabilitation in forest encroachment area.	1) Preparing area for forest restoration.	✓					1) Kon head watershed management unit. 2)Local administrative organization 3) Academic Institute
		2) Preparing seeding plant suitable with area feature circumstance.	✓					
		3) Establishing community participant in forest plantation programme and providing employment benefit.		✓				
		4) Monitoring and protecting forest planted area .		✓	✓	✓	✓	
	1.4 Protecting forest fire situation through people participation	1) Providing forest fire break area	✓	✓	✓	✓	✓	1) Academic Institute 2) Kon head watershed management unit. 3) Local administrative organization
		2) Provided forest fire monitoring system function by local community and governmental agencies associated.	✓					
		3) Providing effective equipment for preventing forest fire.	✓		✓			

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
1. protected area/conservation area without conflict (cont'd)	1.5 Public relation/Contributing knowledge or information involved in forest upper land restoration monitoring and evaluating result.	1) Asset forest upper land restoration monitoring and evaluation planning program.	✓					1) Academic Institute 2) Kon head watershed management unit. 3) Local administrative organization
		2) Organizing data base system for continue monitoring and evaluating development terminology.	✓					
		3) Organizing media relation campaign in specific field and boarding widespread access in other areas.	✓	✓				
	1.6 Researching and studying in forest beneficiaries usage and forest community management suitability for estimating buffer zone.	1)Limiting specific area of study based on the characteristic area appearance appropriate with forest rehabilitation.	✓					1) Academic Institute 2 Kon head watershed management unit.
		2) Organizing research project approach involved in community beneficiaries forest utilization situation.	✓	✓				

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
2. Protected area with conflict	2.1 Estimating upper land forest and extensive fertile value area being protected area.	1) Clarifying upper land forest area by community participation.	⚑					1) Kon head watershed management unit. 2) Local administrative organization
		2) Building the collaborative consensus and creating upper forest conservation public commitment.	⚑					
		3) Setting community board committee for monitoring, preventing and maintaining forest encroachment situation.	⚑					
	2.2 Promoting forest cultivation for community benefits.	1) Forest plantation of three plants typical and have four beneficiaries such as Tea Tree	⚑	⚑	⚑			1) Kon head watershed management unit. 2) District agricultural governmental agency
		2) Organizing herbal garden in communities.	⚑					

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
2. Protected area with conflict (cont'd)	2.3 Building educational systematically service integrating schools in high land	1) Providing primarily educational systematically insurance.	⚑	⚑	⚑	⚑	⚑	1) Academic Institute
		2) Developing potential of educational staff consistency.	⚑	⚑	⚑	⚑	⚑	
		3) Improving environmental education curriculum for establishing conservation consciousness embodied and natural resource knowledge in local level.	⚑					
		4) Providing modern learning tool/technologies that its can response to local requirement.	⚑					
		5) Providing budget of social service for educational facilitator following educational insurance regular system.	⚑	⚑	⚑	⚑	⚑	

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
2. Protected area with conflict (cont'd)	2.4 Agriculture conservation philosophy enhancement.	1) Exposure trip to observe agro-conservation initiatives.	✓	✓				1) Kon head watershed management unit. 2) Local administrative organization 3) Academic Institute
		2) Creating occupation groups.	✓					
		3) Setting marketplace in community.	✓					
		4) Setting value-addition of agriculture productivity constitution.	✓					
		5) Demonstrating agro conservation plant experimental.	✓					
	2.5 Public relation/ Contributing quality of life in community level.	1) Supporting family planning programme.	✓	✓	✓	✓	✓	1) Kon head watershed management unit. 2) Local administrative organization 3) Academic Institute
		2) Building awareness and consciousness of self-sufficiency economy philosophy.	✓	✓	✓	✓	✓	

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
3. Utilization zone without conflict	3.1 Establishing water contained resource for providing agriculture activity and community supply.	1) Exploring and assessing suitability of area for constructing water contained resource.	✓					1) Royal Irrigation Department 2) Local administrative organization.
		2) Establishing water contained resource.		✓				
		3) Establishing irrigation system of agriculture activity supply.		✓				
	3.2 Non-toxic agriculture cultivation/agro conservation conceptual perspective.	1) Demonstrating agro conservation economic plant experimental.	✓					1) District agricultural governmental agency. 2) Local administrative organization.
		2) Training on non-toxic agriculture perspective for contributing better understanding and knowledge.	✓					
		3) Setting non-toxic agriculture group constitute.	✓					
		4) Producing bio-fertilizer.	✓	✓	✓	✓	✓	

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
3. Utilization zone without conflict (cont'd)	3.2 Non-toxic agriculture cultivation/agro conservation conceptual perspective.(cont;d)	5) Planting vegetation for soil & water conservation enhancement in slope area.	⚑	⚑	⚑	⚑	⚑	
	3.3 Value-addition agriculture productivity.	1) Designing agriculture productivity brand name underlines local feature.	⚑					1) Local administrative organization. 2) District agricultural governmental agency.
		2) Formulating financial enterprise in local level through setting saving group or credit union constitute of agriculture productivity reform.	⚑	⚑	⚑			
		3) Implementing agriculture productivity reform technology that modest technology is appropriate with Longan transformation.	⚑					
		4) Setting marketplace in community.	⚑	⚑	⚑			

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
3. Utilization zone without conflict (cont'd)	3.4 Developing primarily facilitate requirement and infrastructure system.	1) Improving infrastructure service and community facilitated.	⚑	⚑				1) Local administrative organization. 2) Provincial Electricity Authority 3) Telephone of Thailand
		2) Improving electricity and communication system access every community.	⚑	⚑				
	3.5 Public educational service and long life learning process enhancement.	1) Providing educational insurance for guarantee qualitative of education.	⚑	⚑	⚑	⚑	⚑	1) Academic Institute 2) Local administrative organization.
		2) Improving environmental education curriculum for establishing conservation consciousness embodied and natural resource knowledge in local level.	⚑					
		3) Developing potential possibility of educational staff consistency.	⚑	⚑	⚑	⚑	⚑	
		4) Providing modern learning tool/technologies that its response to local requirement.	⚑					

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
3. Utilization zone without conflict (cont'd)	3.5 Public educational service and long life learning process enhancement.(cont'd)	5) Setting Telecommunication technology center in community.	✓	✓				
	3.6 Building capacity of healthy service system strengthening.	1) Providing good quality of equipment for staff.	✓	✓				1) Healthy public service. 2) Local administrative organization.
		2) Supporting volunteer practice of effective charity / social service activities.	✓	✓	✓	✓	✓	
		3) Organizing sport programme activity in community.	✓	✓	✓	✓	✓	
		4) Providing sufficiency athletic tool.	✓	✓				

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
3. Utilization zone without conflict (cont'd)	3.7 Preventing and preserving environmental circumstance and natural resource.	1) Providing place for reduce waste and garbage from households.	✓					1) Nan governmental provincial authority 2) Local administrative organization.
		2) Designing and establishing high potential of garbage systematically model.		✓	✓			
		3) Colleting garbage from each household and get rid of it in appropriated place which people prior selected.	✓	✓	✓	✓	✓	
		4) Monitoring and testing environmental circumstance.	✓	✓	✓	✓	✓	
4.Utilization zone with conflict	4.1 Limiting land use pattern.	1) Exploring and making mark in utilization zone or crop zone by joined with community.	✓	✓				1) Nan governmental provincial authority. 2) Department of national park wildlife and plant conservation.
		2) Land allocation to households, Each household not controls over 15 rai.	✓					
		3) Guaranteed land ownership right status by land use law.	✓	✓				

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
4. Utilization zone with conflict (cont'd)	4.2 Contributing education.	1) Providing educational insurance for guarantee qualitative of education.	⚑	⚑	⚑	⚑	⚑	1) Academic Institute. 2) Local Administrative organization.
		2) Improving environmental education curriculum for establishing conservation consciousness embodied and natural resource knowledge in local level.	⚑					
		3) Developing potential of educational staff consistency.	⚑	⚑	⚑	⚑	⚑	
		4) Providing modern learning tool/technologies that its response to local requirement.	⚑					
		5) Providing educational fund.	⚑					

Table 24 (Cont'd)

Land management zones	Project plan	Project activities	Time horizon (Year)					Key actor organization
			1	2	3	4	5	
4. Utilization zone with conflict (cont'd)	4.3 Supporting alliance associated formation and peer exchange learning center emerge.	1) Creating alliance associated.	✓					1) Academic Institute. 2) Local Administrative organization.
		2) Setting communication technology.	✓					
		3) Setting natural disaster alarming technology in community.	✓	✓	✓	✓	✓	
	4.4 Supporting local knowledge.	1) Training on local intellectual communicator.	✓		✓		✓	1) Academic Institute.
		2) Collecting local intellectual data.	✓	✓	✓	✓	✓	
	4.5 Accelerated occupation improvement both of agriculture sector and commercial sector.	1) Exposure trip to observe other case.	✓		✓		✓	1) Local Administrative organization. 2) District agricultural governmental agency.
		2) Accelerated occupational group in manufacturing sector.	✓					
	4.6 Empowered tradition and culture.	1) Organizing traditional festival in every year and set up Buddha religious constitute in local level.	✓	✓	✓	✓	✓	1) Buddha religious constitute

9. Transition of Strategies to Action Plan

The achievement of sustainable natural resource management procedure in the Kon watershed area via multi-stakeholder partnerships is found to be more effective if they are adapted strategies towards the action plan.

1) A success of CPT situation procedures is based on an integrated framework containing: Bases are function-participatory-decentralization: AFP&D theoretical approach takes as its point of emerging identification of target area for practice. This was then followed by an integrated several sectors of multi stakeholder partnerships to support conservation policy in community level, the transitional strategies toward action plan process must focus on people participation, the work on environmental issues of the Kon watershed basin local governmental organization should be evolving towards a higher level of cooperation, and towards amore solidly based institutional platform for sustainable preservation practice.

2) Design the step of transitional strategies toward natural resources management action plan in Kon watershed area as follows.

2.1) Review the national policies, strategies, focused on natural resources and environmental management in the Kon watershed area.

2.2) The domain natural resources management participation builds perspectives and capacities for effective action among core planning team-CPT situation and multi-stakeholder partnerships participation. The CPT situation appears to important roles in domain watershed environmental conservation: 1) building bridges among divers stakeholders, 2) implementing collective action and contributing community participation process in watershed natural resources management, 3) implifying the important issues and 4) performing other accountability involving environmental preservation assigned from the district governor

2.3) Coordinate of defining achieve ultimate goal, consequence of urgent problem and resolution priority responsiveness community need assessment include consideration of the appropriate way to make a decision.

2.4) Establish the detail of guideline project in proceeding environmental management practice by identifying role of staff, supporting organization and duties function of each partnership that is fit in timeframe.

2.5) Prepare budget management.

2.6) Multi-stakeholder partnerships are cooperative environmental resolution practice in target site.

2.7) Monitor exiting standards for participatory monitoring and evaluating methodology at the local level and dissemination of the result by KPI's terminology. The proportion of monitoring team includes the representative from several sectors.

The Evaluation actors are major players in monitoring whole project procedure and assessing environmental solution plan for improving watershed environmental conservation according to community need assessment.

3) The implementation and action builds on closed cooperativeness for reducing the duplication of actions and improves understanding of each sectors.

3.1) Centralized governmental agencies are Department of Nation Park, Wildlife and Plants, Royal Forestry Department, Department of Mineral Resources.

3.2) Decentralize governmental agencies in provincial level are Office of Agriculture Department, Healthy Services Welfare Department

3.3) Local administrative organization

3.4) Non-profit organization or private sector

4) Project management activity accordance several practices covered aspect.

4.1) Protection, conservation and restoration natural resources management plan

4.2) Pollution controlled plan

4.3) Socio-economic development plan

4.4) Community capacity building plan

4.5) Adapt administrative management mechanism plan i.e. adjust law, regulation, cooperative mechanism of each project.

The purpose of each management activity has the portion of develop natural resources balance by emphasized on land use security.

5) Reformation of action plan to actual practice: The efforts of multiple institute and organizations providing cooperative for development. Currently, the provincial administrative regulate based on Prime ministry principle identify the manifested authority of CEO for conduct and forward development activity in provincial level and all of institute in each provincial must provide the practice project follow provincial strategies framework.

6) Flexible of strategies plan is necessary to adopted action plan to actual practice. The characteristic of good plan should include the obvious practice direction, and practical timeframe.

10. Construction of Pilot Project

Pilot project construction is a part of an improvement of Appropriate Community Participation Process (ACPP) for conflict resolution in Kon watershed management through designing the Kon management action plan and links stakeholders in Kon watershed. This strategy would empower stakeholders to experience and transform the plan to practice. The researcher begins the pilot plan by by designating a board committee at local level, selecting a target area in Amphoe Chiang Klang to transform the plan to practice. Meanwhile, the researcher cooperated with Amphoe Chiang Klang to constitute the CPT of Chiang Klang with a portion of several sectors in the following :

Table 25 Number and ratio of Chiang Klang CPT constitution

CPT	Number of Members (persons)
1. Chairman of board committee (Chief District Officer of Chiang Klang)	1
2. Major of Sobkon Municipality or Chairman of Chiang Klang administrative organization	2
3. Secretary of board committee (School director)	1
4. Municipality or Tambol administrative organization	2
5. Governmental authority agency	8
6. Local Government Agency	21
Total	35

Key performance of Chiang Klang CPT is to promote and implement the action plan to achieve goals. In addition, it is to collet and look closely at critical issue in Amphoe Chiang Klang and support a mechanism of operation at local level through the development of pilot project preparation and implementation to practice to achieve the set goals.

For the action plan which Chiang Klang CPT made an approval entitled “Developing community strengthening for investigating early warning system” is a project that aims at creating understanding and consciousness for the community people to realize a danger from natural disasters like flash flood, and landslide. This is caused by, in the past, landslide had occurred in many areas of the Kon watershed and emerged a high-risk of communities for their living in such a steep land area. Therefore, for preventing the communities to be affected from natural disasters, it is clear that the community leadership should be encouraged for a learning, Local administrative organization and academic institutes in local scale is capable of delivering news and information regarding natural resources condition in Kon watershed and thus developing a computer usability for distributing information urgently. The step of action plan development are :

Figure 17 Cooperation with the Chief District Officer of Chiang Klang and relevant institutes

Figure 18 Surveying of landslide situation in Baan Kok, Chiang Klang TAO

1) Coordination with the Chief District Officer of Chiang Klang to designate for stakeholder partnerships in target watershed, set up Chiang Klang CPT constitution and associate with governmental agency in local scale.

2) Determination of selection criteria for Baan Kok and Chiang Klang TAO, where are targeted for the action plan implementation because they are located in upper land forest of Kon watershed.

3) Surveying of Baan Kok surroundings by consideration of shelter scattered, land use zoning, landslide clue and agriculture activity in the land slope area.

4) Collection of primary data of target area and set up a rapid accessible information system regarding data of early warning system for flash flood, landslide.

5) Setting the Chiang Klang CPT workshop 1 for the pilot project, including analyzing problem, establishing management guideline by creating draft action plan. (Figure 19)

6) Setting the Chiang Klang CPT workshop 2 to understanding causes of natural disasters and training for skill of early warning system used towards flash flood and landslide (Figure 20)

Figure 19 Chiang Klang CPT workshop 1 : Creating an action plan

Figure 20 Chiang Klang CPT workshop 2 : Training for community leadership in the Kon watershed region

Indeed, bring an action plan theory to practice in Amphoe Chiang Klang site where visited. The researcher evaluated the project implementation by CPT participation process of development and evaluation the action plan based on a focus groups technique, which demonstrated variety of perspectives and experiences in the following:

Table 26 Summary of action plan evaluation results by Chiang Klang CPT

Evaluation advocacy	Recommendation of Chiang Klang CPT
1. Stakeholder partnership participation	• Emerging Chiang Klang CPT mechanism platform; it conformed key actors, who is responsible to the project procedure and co-work with Ampaur Chiang Klang. • The upper land forest institute provides the cooperation. • The academic institute enables a support of materials and computers.

Table 26 (Cont'd)

Evaluation advocacy	Recommendation of Chiang Klang CPT
2. Theoretical data and technical approach.	• Lack of knowledge and skill on communication technology in some CPT. • Researcher helps clarify the technique significance and the use to CPT. • Information can be complicated that CPT skills needed developed.
3. The pilot project timeframe	• The duration of project plan operation undertaken is not efficient so skills can be constrained the community capacity building. • Establishing the pilot project and distributing to the Kon watershed areas
4. The adaptability of pilot project to a local scale.	• The adaptability of pilot project to Kon watershed areas to practice, nonetheless being supported in budget from a governmental sector. • The utilization project plan initiative toward to real action should begin from Tambol administrative organization in local level. • Skill development to the community leaders so that knowledge will be further utilized

11. Monitoring and Evaluation Program

The monitoring and assessment techniques not only increase the impact of natural resource management in the Kon watershed area, but also help guarantee improve effectiveness, obtain best achieve goal, and build reviewing and learning more deeply into their own strategies if several plans cannot be responded. Therefore, the resultant consensus from collaborative inquiry must lead actual practices to reform. The assessment process includes an importance element.

11.1 Evaluation framework

First, the formal assessment creates learning partnership or civic participation. The process have involved community member and is a review for implementation of governmental policy and local government organization strategies since the promotion from government authority can change the action plan to actual environmental resolution practices.

Second, a review of all natural resource management projects in Kon watershed area has done on the past.

11.2 Evaluation period

1) Evaluation of ongoing project procedure

2) Evaluation of accomplished project procedure for a review

11.3 Monitoring and Evaluation mechanism

1) A reformation of accountability evaluation committee in the watershed area level to create an evaluated participation atmosphere both of informal feedback or unexpected outcome and formal resultant evaluation. The evaluation system includes two approaches.

- Monitoring and evaluation of academic research institute
- Monitoring and evaluation of natural resource users

The resultant from the assessment must be an analysis and summary for finding conclusion and considerable process lead to plan adjustment.

2) Monitoring and evaluation indicators

- Increasing and expanding of the forest areas
- Increasing of forest managed by community
- Increasing of mixed-agriculture
- Number of farmers who utilize non-toxic fertilizer
- Number of farmers who conserve water and soil
- Concept in agriculture practice
- Collection of population acting for environmental preservation
- Water resource services for agricultural activities
- Quality of water resources

11.4 Monitoring and evaluation methodology

1) Evaluation inquiry accessed by organizing participation meeting, focus group, deep interview, sub-structure interview

2) Evaluation of investigation using a modern technological tool

3) Quantitative evaluation approach including monitoring the community economic change

Part V: Laws Revision and Improvement

One important component in the social development process is people participation towards the conservation and the use of environment and natural resources. This is clearly indicated in Thai Institution B.E. 2540.

People participation in watershed dispute resolution requires strong support and enforcement of government sector. Participation process comprises of six steps:

1) Acknowledgment

2) Thought sharing

3) Decision making

4) Implementation

5) Monitoring and evaluation, and

6) Mutual benefits sharing

Therefore, it should be added that people participation is one article within natural resources and environment related laws.

There are several laws and regulations in relation to natural resources and environmental management such as the Enhancement and Conservation of National Environmental Quality Act (B.E.2535), National Protected Area Act, National Park Act, Land Planning Act, Agricultural Land Reform Act, and so on. Each act designates different purposes and provides authorization to specific governmental agencies. According to this, it leads to less effective natural resources and environmental management in the watershed areas.

However, it is presently found that there are a large number of communities situated in the Kon Watershed Area and other watershed areas, especially ethnic minority groups which are scattered over the area. This makes it difficult for natural resource management, especially in the 1A class-watershed area where is a sensitive zone for environmental impacts.

Hence, recommendation for this is to reconsider the ministerial decision regarding the classification of watershed area in relation to the use of class 1A and 1B. This requires the check of period of settlement and agricultural activities undertaken on case by case basis. In addition, it needs to designate and differentiate

a permanent conservation area and using area based upon land capability. Each act will be used to set up the land use conditions in various forest areas. Only environmental friendly practices will be allowed to be undertaken in some forest areas.

Part VI: Validity Test and Results

Validity measurement process of PAR research concerns concept of community management and learning. Community will be invited to participate in research undertaking process started from its early stage up to implementation in target areas, including participatory monitoring and evaluation.

Therefore, in order to have PAR research process compatible with community context in watershed area, validity test and evaluation is strongly required to ensure that research results can be used for dispute resolution in watershed area. Mills (2000) realizes the importance of PAR research and sees that there's uniqueness in this research type which includes following criteria:

1) Process Validity, depending on the credibility of collecting data to answer research questions/scientific hypothesis.

2) Democratic Validity, relevance of target population identified by research objective. The implementation of research terminology and results must reflect perspective and ideology of social actors.

3) Outcome Validity, the implementation of research outcome must be able to solve conflicts, based on knowledge gained from research.

4) Catalytic Validity, related to research process to raise awareness and participation of people to solve conflicts.

5) Dialogic Validity, related to quality of research through the dialog performed by stakeholders in such research.

Validity measurement of Appropriate Community Participation Process for Dispute Resolution in Kon Watershed Management, Nan province, researcher set key performance indicators (KPI's) in four domains (Mills, 2000) by allowing core planning team (CPT) to set up the plan and inviting community representatives to involve in evaluation process through Focus Group (Table 27 and Figure 21).

Table 27 Indicators and result of appropriate community participation process

Validity	Indicators	Results
1. Process validity	1.1 Innovative research process methodology	There's clear research design from the beginning
	1.2 Selection of timeframe horizon	Long-term implementation period (more than 2-3 years)
	1.3 Appropriateness of meeting agenda	Meeting agenda set clearly
2. Democratic validity	2.1 Diversity of stakeholders	There's diversity of stakeholders partnerships in CPT and community representatives
	2.2 Decision making based on rational arguments.	GIS data and criteria agreed by stakeholders are used to support decision making
	2.3 Deliberative democracy and inclusive decision-making on public sphere/freedom of opinions expression	Doable through small group discussion
	2.4 None dominated decision-making process/ free from opinion control	Sometimes group of local people who lose their benefits express their thoughts in the meeting
3. Outcome validity	3.1 Ability to solve conflict	This process can help solve conflict in the watershed area, however it takes time.
	3.2 Results meet the needs of community	It's the need of community to solve land use conflicts in watershed area
	3.3 Compatible to government policy	Government has policy to promote and support people participation in sustainable natural resources management in watershed area
	3.4 Result of sustainable natural resources management in watershed area	The formation of land use zone in watershed area and long-term and short-term implementation plan for this.

Table 27 (Cont'd)

Validity	Indicators	Results
4. Catalytic validity	4.1 Stakeholders gain knowledge on dispute resolution	Facilitator and researcher provide participants knowledge on participatory decision making system development process for dispute resolution.
	4.2 Watershed natural resources conservation awareness of stakeholders raised	Level of awareness is varied because of different background of stakeholders e.g. economic and social status, education, and culture
	4.3 Community cooperation empowered	Community cooperation in the project is hugely empowered, especially in community leaders and local government agencies
5. Dialogic validity	5.1 Possibility of implementation in the Kon watershed area	Watershed dispute resolution is going well
	5.2 Magnification to other watershed areas	This can be magnified to other watershed areas, based upon support from government policy

Figure 21 Focus group meeting for ACPP validity test

Part VII: Limitation of Appropriate Community Participation Process (ACPP)

Although conflict resolution process in Kon watershed management can help solving problem occurred in Kon watershed, but it can be considered bringing an adaptive ACPP technique to other watershed areas because it has necessity to adjust the approach and guideline to fit in each current issue context which differentiated topologic characteristics, crucial of situation. Therefore, through this approach would be developed by sophisticated initiative planning framework and open criticism, deliberative discussion on designed resolution strategic plan-interaction among researcher and diversity stakeholder, and researcher should co-work with civil society groups continuously. In Kon watershed case studies, for creating excepted appropriate ACPP guideline, would reduce limitation by supporting community participation based on traditional and cultural capital. In addition, the operation process must not be rush in time for stakeholder exchange learning. Nevertheless, the limitation of ACPP approach in Kon watershed comprises of:

1) It takes time to implement the appropriate community participation process for dispute resolution in Kon Watershed Area. In particular, the meeting among representatives from people party must not provide any impact to villagers' professional practices. The readiness of people in target areas must be considered, for example, villagers' attitude towards land use, villagers' behaviors and familiarity in natural resources usage. These factors will be effect to participation process. Therefore, timeframe for implementation should not be limited, but it should be suitable with context of each area.

2) The cooperation from local agencies, especially government which is CPT members, is crucial factor for success. The lack of continuity and serious implementation will affect meeting and participatory decision making processes. Major obstacle found is the daily working amount of those in local government agencies which is quite a lot. Accordingly, other persons who don't have authority to make decision are assigned to attend the meeting instead of the key ones. In addition, some agencies see that land use issue is not in their responsibility, therefore sufficient participation is not provided. This effects long-term implementation of the project.

3) The lack of continual participation of stakeholders in meetings and workshops. Therefore, the mechanism to stimulate people's interest and participation should be put in place through the two-way communication between researcher, CPT members and representatives from people party. Samples of communication activities are newsletter, meeting minutes, publicity through provincial, district and community leader channels.

4) Language barrier-since the participants are from various ethnic minority groups watershed areas based who have their own dialects, therefore it's difficult to communicate effectively which everyone could understand everything thoroughly. Hence, limitation to communicate is found in languages use as well as culture difference.

5) Governance system and laws-this is an important issue for master participatory development. This also links to cooperation from stakeholders in watershed areas. In the past, official governmental system which portrayed superior and inferior type of governance created the sense of discrimination in some groups. They felt that they were taken away from accessing to social opportunities and special treat in term of laws enforcement to people in watershed areas by using laws on protected areas as a main tool for natural resources and environment management.

6) The credibility local people have towards local government agencies especially on quality of life development. Credibility can bring about strong cooperation between local people and local government agencies in dispute resolution, participation process and effective implementation.

7) Qualified facilitator is strongly required. Participants are from various sectors in society such as government agencies, private sector, non-governmental organizations, local administrative offices and education institutions, so they have different mind set. In order to empower participants and convey them information on land use and land conservation and restoration, facilitator must be skillful, has good understanding on the issues, experiences and capability to conduct and facilitate the meeting, as well as encourage participants to brainstorm based upon topics provided which will help achieve aims of meeting.

Part VIII: Factors for Consideration in Implementing ACPP in Other Watershed Areas

Importantly, a comprehension of geographical, socio-cultural factors towards a community should be worthily considered before the application of ACPP to other watershed regions. In addition, an update information database of natural resources in watershed regions can be utilized effectively in the analysis and planning. The said factors can be considered as follows.

1) Geographical factor of target watershed area. Each area has different size, geographical location, type of natural resources; therefore geographical factors must be carefully considered for watershed area selection. It's obvious that complex geographical watershed area is a factor for land use planning.

2) Socio-economic of people in target watershed area. This is an important factor because this is indicator for economic and social status of people in the area, including land use, land possession, natural resources use conflict, settlement pattern, and existence of ethnic minority groups.

3) Natural resources and environment database in watershed must be sufficiently available for land use planning and working process. Database must be updated on a regular basis in a GIS format in order to be efficiently used for land use planning. In addition, data must be correct and obtained from credible government agencies.

4) Establishment of CPT or representatives of people party. This must be highly recognized. Equally number of representatives from government agencies, private sector, local government organizations and people party to be members of working groups is recommended. There should also be room for flexibility to do the work effectively.

5) Budget. This is also important for the achievement of the project. If there is insufficient budget, the facilitation of workshop and meeting might not be smoothly and in the right process.