

# Mekong Institute

Research Working Paper Series 2012



People's Participation in Community Based Natural  
Resources Management in Prek Thnot Community  
Protected Area, Kampot Province, Cambodia

CHHOM Vichar



**NEW ZEALAND**  
Embassy BANGKOK  
TE AKA AORERE

**Mekong Institute**

Research Working Paper Series 2012

**People's Participation in Community Based  
Natural Resource Management in Prek  
Thnot Community Protected Area,  
Kampot Province, Cambodia**

**CHHOM Vichar**

December, 2012

**CHHOM Vichar** is a Master's Degree student of Natural Resource Management and Rural Development of the Royal University of Agriculture (RUA) of Cambodia. While studying in the university, she worked part-time at Kampong Thom Province, dealing with tasks related to fish paste at Stung Chinit Community. Furthermore, during her thesis research, she worked as a volunteer researcher with WAP (The Wetlands Alliance Program) on the livelihood status and utilization of coastal fisheries resource in coastal community and extension of crab bank at Kampot Province.

This publication of Working Paper Series is part of the Mekong Institute – New Zealand Ambassador Scholarship (MINZAS) program. The project and the papers published under this series are part of a capacity-building program to enhance the research skills of young researchers in the GMS countries.

The findings, interpretations, and conclusions expressed in this report are entirely those of the authors and do not necessarily reflect the views of Mekong Institute or its donors/sponsors. Mekong Institute does not guarantee the accuracy of the data include in this publication and accepts no responsibility for any consequence of their use.

For more information, please contact the Technical Coordination and Communication Department of Mekong Institute, Khon Kaen, Thailand.

Telephone: +66 43 202411-2

Fax: + 66 43 343131

Email: [library@mekonginstitute.org](mailto:library@mekonginstitute.org)

**Technical Editors:** Dr. Seng Mom, Vice-Rector, Royal University of Agriculture (RUA), Kingdom of Cambodia

Mr. Aryuwath Pratumsa, Project Manager, Mekong Institute

**Language Editor:** Ms. Ayla P. Calumpang

**Managing Editor:** Ms. Suchada Meteekunaporn, Technical Coordination and Communication Manager, Mekong Institute

**MINZAS Program Coordinator:** Mr. Seang Sopheak, Project Coordinator, Mekong Institute

**Comments on this paper should be sent to the author**

**CHHOM Vichar:** Royal University of Agriculture (RUA), Chamkar Dong, Dangkor District, Phnom Penh, Cambodia. Tel: + 855 16 666784, Email: [chhomvichar@gmail.com](mailto:chhomvichar@gmail.com)

or

**Technical Coordination and Communication Department, Mekong Institute**

## Table of Contents

<b>List of Figures</b>	<b>v</b>
<b>List of Tables</b>	<b>vi</b>
<b>Acknowledgements</b>	<b>vii</b>
<b>Abstract</b>	<b>viii</b>
<b>1. Introduction</b>	<b>1</b>
<b>2. Decentralization in Cambodia Focus on Natural Resource Management</b>	<b>1</b>
2.1 Forestry	3
2.2 Protected Areas	4
2.3 Fisheries	6
<b>3. Methodology</b>	<b>7</b>
3.1 Site and Simple Selection	7
3.2 Data Collection	8
3.2.1 Primary Data	8
3.2.2 Secondary data	8
3.3 Data Analysis Method	9
<b>4. Result and Discussion</b>	<b>9</b>
4.1 Prek Thnot Community Protected Area History	9
4.2 Community Transect	11
4.3 Household Activities	12
4.4 Livelihood Activities	14
4.5 Source of Income	14
4.6 Perception and contribution in CBNRM of Prek Thnot CPA	15
4.6.1 Peoples' participation in committee election in Prek Thnot CPA	15
4.6.2 Awareness the Purpose of Establishing Prek Thnot CPA by Community Members	16
4.6.3 Satisfaction of Community Members in Prek Thnot CPA Management	17
4.6.4 Understanding of Right of Community Members	18
4.7 Levels of Participation of Community Members in Prek Thnot CPA	19

4.7.1 Participatory Meeting	19
4.7.2 Participation in Decision Making	20
4.7.3 Participation in Planning	21
4.7.4 Management and Conservation	21
4.7.5 Project Implementation	22
4.8 Positive Impacts of Participation	22
4.8.1 Capacity Building and Knowledge Improvement	22
4.8.2 Gender Equity Improvement	23
4.8.3 Employment Creation and Income Generation of Community Members	24
4.8.4 Members Perception in the Environmental Aspect	25
4.9 SWOT Analysis	26
<b>5. Conclusions and Recommendations</b>	<b>28</b>
5.1 Conclusions	28
5.2 Recommendations	28
<b>References</b>	<b>29</b>
<b>About MINZAS</b>	<b>32</b>
<b>The Mekong Institute</b>	<b>33</b>

## List of Figures

Figure 1.	Study site map of Prek Thnot CPA	7
Figure 2.	Transect map of Prek Thnot CPA	11
Figure 3.	Percentage of livelihood activities of households in Prek Thnot CPA	14
Figure 4.	Percentage of peoples' participation in committee election in Prek Thnot CPA	16
Figure 5.	Percentage of awareness the purpose of establishing Prek Thnot CPA by community members	17
Figure 6.	Percentage of satisfaction of community members in Prek Thnot CPA management	17
Figure 7.	Percentage of understanding of right and task of community members	18
Figure 8.	Percentage of the respondents participated in training courses and perceived benefit from training	23
Figure 9.	Percentage of degree of the respondents' perception in improving gender equity	23
Figure 10.	Percentage of employment creation and income generation of community members	25

## List of Tables

Table 1.	Number of the Community Forestry Areas	3
Table 2.	National Protected Areas and other National Conventions Determined by Royal Decree	4
Table 3.	Selected households in Prek Thnot commune, Teck Chhou district from Prek Thnot CPA	8
Table 4.	Prek Thnot CPA history	10
Table 5.	Seasonal Calendar of Local Community in Prek Thnot CPA	13
Table 6.	Source of Income of Households in Prek Thnot CPA	15
Table 7.	Level of participation of community members in meeting, decision-making, planning, management and conservation, and implementing in Prek Thnot CPA	19
Table 8.	Degree of members' perception in the environmental aspect as affected by the community	26

## **Acknowledgements**

I would like to extend my sincere thanks to the Rector and all Vice Rectors of the Royal University of Agriculture, and to all lecturers and staffs of the Royal University of Agriculture, who shared their knowledge and experiences with me.

I would like to express my deep gratitude to Dr. Seng Mom, Vice-rector of Royal University of Agriculture and Ms. Hou Kalyan, Program Officer at the RECOFTC who supervised this thesis research, providing the most favorable condition for my works and comments throughout the thesis period. Great thanks go to Dr. Houn Thavrak, Acting Dean of Graduate School, and all staffs and lecturers of the Graduate School of the Royal University of Agriculture for encouragement and advice.

My sincere gratitude goes to Dr. Suchat Katima, Director of Mekong Institute, Mr. Aryuwath Pratumsa, Project Manager of Mekong Institute, Mr. Seang Sopheak, Project Coordinator of Mekong Institute, and all staffs from the Mekong Institute for guiding me to pursue this research topic and for training me with useful skills.

My special thanks to the New Zealand Ambassador as well as the Mekong Institute-New Zealand Ambassador Scholarship Program for providing me significant training and financial support to conduct my thesis research.

I would like to express my thanks to the commune chiefs of Prek Thnot CPA, village chiefs of Prek Thnot, Prek Kreng, Chang Hoan, and Trapheang Ropov villages, Prek Thnot CPA committees, and all Prek Thnot CPA members who participated during the interviews and provided very useful information for this research.

Finally, I would like to express my special thanks and gratitude to my beloved grandparents, parents, brothers, uncle and aunts, cousins, and all of my beloved friends who encouraged and helped me to complete this research.



## **Abstract**

The study was conducted to understand the current status of Prek Thnot CPA. The study used qualitative data such as community transect, time line, seasonal calendar, FGD, and questionnaire. About 90 households were selected for interviews on the livelihood activities, awareness of the members, the level of participation as well as benefits of participating as members in Prek Thnot CPA.

Prek Thnot CPA was established in 2002 with the total member of 864 households supported by the Ministry of Environment and Borkor national park with the total area of 2006 ha, with 216 ha given to the Administration of Forestry, Ministry of Agriculture Forestry, and Fisheries for managing and conservation in 2006. The community was divided into 3 sub-activities such as rattan, traditional medicine, and eco-tourism groups which were supported by the Save Cambodia Wildlife (SCW), UNDP, WWF, ADB, Traffic, IUCN organizations, and the Ministry of Tourism.

The result showed that most of the respondents participated in committee election in Prek Thnot CPA and about half of the respondents were aware of the management process of the community. For the level of participation, most of the respondents participated in low level. The limitation of participation in the meeting was caused by livelihood activities condition. In decision making and planning process, most of the respondents did not participate because these processes were only done among the committees, village chiefs, commune councils, and stakeholders. Moreover, their lack of knowledge made them just follows what the committees offered. In management and conservation process, about half of the respondents participated on a low level and about one fourth of the respondents participated in the implementation project. The level of how members participated in the implementation process depended on the community activities. When asked about the benefits of participation in capacity building and skills, about 44% of the respondents attended the training, which two thirds of them perceived benefits from the training. In this case, 50% of the respondents got job opportunities and more than 50% had increased income after participating as members.

The level of participation was relatively low caused by the lack of communication between community and members; and limited knowledge on the tasks and roles of managing the community goal of Prek Thnot CPA.

## **1. Introduction**

Cambodia has one of the highest percentages of natural resources per capita in East Asia which provides for food security, income and employment for the people (World Bank, 2004). About 90% of the rural population practices a difference range of income and livelihood strategies to meet their needs, including agricultural practices, fisheries and forest resources. However, illegal and unsustainable use of forests and fisheries resources by some actor including population growth has resulted in high rates of the degradation of forest and a reduction in the productive value of fisheries (McKenney & Tola, 2002). In response to this, 23 protected areas covering 3.3 million hectares (more than 18% of the country) were established through the Cambodian Royal Decree November 1st, 1993, and managed the Ministry of Environment, Department of Nature Conservation and Protection, with the aim to ensure the management, conservation of biodiversity, and sustainable use of natural resources in protected areas (ICEM, 2003). Furthermore, Community Protected Areas (CPA) were established with the aim to involve local communities who live nearby or surrounded by the protected areas in the planning and decision-making process of protected area management (San, 2005). However, Noran (2002) indicated that communities will achieve more results, more benefits and raise more resources if they got support from their local people and partners.

## **2. Decentralization in Cambodia Focus on Natural Resource Management**

In 1996, following the 1993 UN- sponsored democratic elections and the initiation of the UNDP Cambodia Area Rehabilitation and Regeneration Project, the government used a decentralized rural development program (SEILA project) in selected provinces (Samath et al., 2001 cited by Yuko et al., 2006). SEILA project was introduced focusing on the linkage between political decentralization and the state of natural resources and local livelihoods. The goal is “to contribute to poverty alleviation through good governance and to institute decentralized and deconcentrated systems and strategies to manage sustainable local development” (Seila Program Office, 2005). The success of the pilot initiative led to further decentralization, including the expansion of SEILA’s second phase (2001-05) into a nationwide program that, among other activities, supported the first democratic election of commune councils in 2002 (SEILA Task Force, 2000 cited by Yuko et al., 2006). The

implementation of decentralization refers to that power is being transferred from the central government to lower levels in a political-administrative and territorial hierarchy (Crook and Manor, 1998). The decentralization in natural resource management, commune councils had the responsibility to involve local people in the management of the resources (Pernille, 2006). Through the participatory approach, people have been encouraged to participate in natural resource management to achieving the sustainability (Ken, 2005).

In response to the degradation of natural resources in Cambodia, Royal Government of Cambodia (RGC) and nongovernmental organizations (NGOs) started implementing community based natural resource management (CBNRM). CBNRM is considered as a tool to reduce poverty, natural resource conservation and promote good governance and decentralization. During the last decade, many developing countries have been tried in CBNRM approaches and there are some models from India, Nepal, Indonesia, Thailand and other countries (Carson et al., 2005). The concept of CBNRM is involved in many terms including community resource management, community forestry, community fisheries, community-based coastal resource management, and community protected area management. CBNRM is a ways that government and stakeholders can share responsibilities and right to natural resources with local communities in planning and decision-making processes that affect their well-being and living environments (Danida, 2007). The CBNRM approach owes its roots to the Southern African region in the 1970s and 1980s (USAID, 2007).

In Cambodia, CBNRM plays an important role in the last decade to cope with natural degradation and rural poverty (Carson et al., 2005). CBNRM is defined as

*A diversity of co-management approaches that strive to empower local communities to actively participate in the conservation and sustainable management of natural resources through different strategies including community forestry, community fisheries, participatory land use planning and community protected area management (Ken, 2005).*

The goals of CBNRM are to empower communities and to obtain ecosystem conservation. Moreover, the goals have been related to conservation, community empowerment and improved livelihood of local communities (Pernille, 2006).

## 2.1 Forestry

Cambodia's forest types are evergreen, semi evergreen forest, deciduous forest and flooded forest (McKenny & Tola, 2002). In 1965, about 73% of Cambodia's total land area was covered with forest. Land use and land cover change patterns with population growth and economic development in the country drove the forest loss and degradation, which declined to 59.82% in 1993 and 58.60% in 1997. In 2002, forest area was 61.15% and decreased to 59.09% in 2006 (the forestry Administration, 2010). The Forestry Law declares that the Cambodia's forests are under control of the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Ministry of Environment (Moe) managed the protected areas and the flooded forests are under the management of the Department of Fisheries (DoF) (McKenny & Tola, 2002).

Table 1. Number of the Community Forestry Areas

No	Provinces	Number of CF	Area (ha)
1	Banteay Meanchey	09	4,970
2	Battembang	17	5,415
3	Kampong Cham	10	3,480
4	Kampong Chhnang	33	10,908
5	Kampong Speu	22	12,915
6	Kampong Thom	67	66,065
7	Kampot	18	8,221
8	Koh Kong	02	3,638
9	Kratie	13	24,866
10	Mondulkiri	09	12,401
11	Preah Vihear	21	44,950
12	Pursat	52	6,260
13	Rattanakiri	28	37,815
14	Siem Reap	37	18,122
15	Steung Treng	06	14,838
16	Svay Rien	02	510
17	Takeo	13	10,605
18	Oddor Meanchey	12	60,477
19	Keb	02	426
20	Pailin	04	858
<b>Existing Community Forestry</b>		<b>377</b>	<b>347,740</b>
<b>Potential Areas for C. Forestry</b>		<b>13</b>	<b>20,203</b>
<b>Total Community Forestry</b>		<b>390</b>	<b>367,943</b>

Source: The forestry Administration, 2010 cited in Community Forestry Office's Report, 2009

In 1991, Community Forestry (CF) has been established to encourage the participation of local people and community in managing forest resources (Carson et al., 2005). The CF refers to as “sustainable forest management through the participation of local people, by making the objectives of local people central in forest management and ensuring that local people obtain reasonable benefits from forest management” (Patrick Evans, FAO - Siem Reap, 2003 cited by Carson et al., 2005). Presently, there are 377 CFs with 347,740 ha and other 13 potential areas with 20,203 ha to be established (Table.1).

## 2.2 Protected Areas

In Cambodia, 23 protected areas are established under the management of the Ministry of Environment, Department of Nature Conservation and Protection by Cambodia Royal Decree on the Designation and Creation in 1993. These areas cover about 3.3 million ha (18 % of the total Cambodia’s land) (Vathanak & Leakhena, 2005). Protected areas are classified including national park, wildlife sanctuary protected landscape, multiple use area, Ramsar site, biosphere reserve, natural heritage site and marine park. Protected area is defined by a sub-decree as an area of the State's public properties in land or water territories, including coasts and sea, located in the area established by a Royal Decree or a new area established in the jurisdiction of the Ministry of Environment. These areas are of physical and biological importance which requires management by law with the purpose of protecting and maintaining biological, natural and cultural resources, and shall be sustainably managed in every generation for environmental, social and economic benefits (Protected area law, 2008). There are 8 national protected areas and national conventions with the total of 23 areas now established in Cambodia (Table. 2).

Table 2. National Protected Areas and other National Conventions Determined by Royal Decree

<b>Name of Protected Areas</b>	<b>Area (ha)</b>	<b>Location</b>
<b>1. National Parks</b>		
Preah Soramrith Kosomak (Kirirom)	35,000	Kampong Speu & Koh kong
Preah Monivong “Bokor”	140,000	Kampot, Kampong Spue, Koh Kong & Kampong Som
Preah Sihanouk “Ream”	21,000	Kampong Som
Preah Chey Varaman-Norodom “Phnom Kulen”	37,500	Siem Reap
Virakchey	332,500	Rattanakiri & Stung Treng

<b>Name of Protected Areas</b>	<b>Area (ha)</b>	<b>Location</b>
Kep	5,000	Krong Kep
Botum-Sakor	171,250	Koh Kong
<b>2. Wildlife Sanctuaries</b>		
Phnom Aural	253,750	Kampong Speu, Pursat & Kampong Chhnang
Phnom Samkos	333,750	Koh Kong, Pursat & Battambang
Lompart	250,000	Rattanakiri & Mondulkiri
Phnom Prich	222,500	Mondulkiri
Snuol	75,000	Kratie & Mondulkiri
Boeng Per	242,500	Kampong Thom, Preah Vihear & Siem Reap
Peam Krosop	23,750	Koh Kong
Roniem Daun Sam	40,021	Battambang & Banteay Meanchey
Kulen- Prum Tep	402,500	Preah Vihear, Siem Reap & Oddar Meanchey
Phnom Narm Lear	47,500	Mondulkiri
<b>3. Protected Landscape</b>		
Angkor	10,800	Siem Reap
Preah Vihear	5,000	Preah Vihear
Banteay Chhmar	81,200	Banteay Meanchey & Oddar Meanchey
<b>4. Multiple Use site</b>		
Dong Peng	27,700	Koh Kong
Boeng Tonle Sap	316,250	Kampong Chhnang, Kampong Thom, Siem Reap, Battambang & Pursat
<b>5. Tonle Sap Biosphere Reserve</b>		
Core zone:		Battambang, Kampong Thom
-Preak Torl		
-Boeng Tonle Chhmar		
-Stung Sen		
<b>6. Ramsar Site</b>		
Stung Treng	14,600	Stung Treng
Boeng Tonle Chhmar		Kampong Thom
Koh Karpi		Koh Kong
<b>7. Heritage Site</b>		
Phnom Aural		Kampong Speu, Kampong Chhnang & Pursat
Phnom Samkos		Pursat, Battambang & Koh Kong
<b>8. Marine Park</b>		
Koh Ses		Kampong Som
Koh Thmeiy		Kampong Som

Source: Protected Area Law, 2008

## 2.3 Fisheries

Fisheries play an important role in rural livelihood of Cambodia such as food security, income, and employment in both freshwater and marine fisheries (ICEM, 2003). Cambodian's fisheries contributed about 5 to 10% of the GDP (Van Zalinge and Leng, 2000 cited by MoE, 2009). Fisheries produced an estimated 515,000 tons in 2009. Moreover, the inland fisheries produced an estimated about 300,000–400,000 tons of fish annually, the value of US \$150–\$200 million (Degen et al. 2000) and the Tonle Sap Lake and River provides 50% to 60% of these (Pernille, 2006). In the Mekong river, there are 1,200 fish species have recorded and about 500 species are reported to exist in the freshwater of Cambodia (Breaking the Banks, 2000). The annual marine catch an estimated about 30,000–50,000 tons per year (FAO, 1994). However, the population growth and increasing on fisheries catchment have increased fishing pressure, while changes to habitat that impact to fish biological and productivity (Viner, 2006).

In response to fisheries management “co-management” of fisheries is established through the creation of community fisheries (Degen et al., 2000). The Community Fishery was created in 1994 in Cambodia by the Department of Fisheries (DoF) with cooperation of Asian Institute Technology (AIT). In 2002, Cambodia Development Research Institute mentioned that there were 162 community fisheries in Cambodia, which involves 351 villages or about 303,000 people (McKenney & Tola, 2002). The primary objective of community fisheries was to create a ‘community-managed fishpond’ for local people to conserve the fish resources during the dry season. Before the fisheries policy reform in 2000 (more than 56% of fishing lots released for community use), community fisheries were created as a mechanism to manage natural resources. There are five objectives of community fisheries created by the Sub-decree on Community Fisheries Management:

*to manage inland fisheries and related ecosystem where fishing lots Have been cancelled, to manage fisheries resources in a sustainable and equitable manner, to increase understanding and recognition of benefits of fisheries resource through participation in protection and management, to provide legal framework to establish community fisheries, and to improve standard of living and reduce poverty” (Kurien et al., 2006).*



Currently, the establishment of community fisheries is for the purpose of minimizing conflicts through fisheries resource management by making it possible for local people to gain equal access to the resources and to utilize the resource sustainable and there are more than 400 Community Fisheries established in Cambodia (Chhuon et al., 2005).

### **3. Methodology**

#### **3.1 Site and Simple Selection**

The study was conducted in the Prek Thnot commune, Tuek Chhou district, Kampot province, Cambodia where the Prek Thnot CPA located (Fig. 1). A total of 864 households have registered as members of the Prek Thnot Community Protected Area of which people are living in 4 villages including Prek Thnot, Prek Kreng, Chang Hoan, and Trapheang Ropov villages.

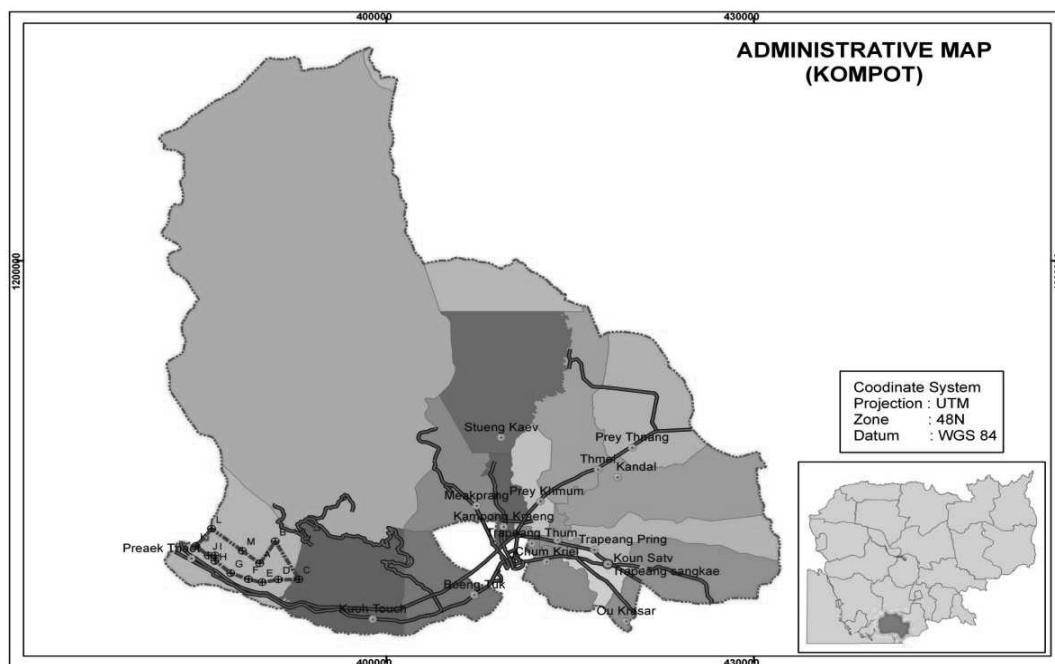


Figure1. Study site map of Prek Thnot CPA

The selected members of the community in the selected communes were targeted to be interviewed. Among the total 864 householders were randomly selected by using Yaman formulas. 90 households out of the total households were chosen followed the following formulas:

$$\begin{array}{l}
 \textcircled{1} \left\{ \begin{array}{l} n = \text{Sample size} \\ N = \text{Population} \\ e = \text{Standard Error (10\%)} \end{array} \right. \\
 n = \frac{N}{1 + N(e)^2}
 \end{array}
 \quad
 \begin{array}{l}
 \textcircled{2} \left\{ \begin{array}{l} n = \text{Sample size} \\ N_i = \text{Number of household each village} \\ n_i = \text{Household interview each village} \end{array} \right. \\
 n_i = \frac{n \times N_i}{N}
 \end{array}$$

Table 3. Selected households in Prek Thnot commune, Teck Chhou district from Prek Thnot CPA

Village	Community members	Interviewed Households
Prek Thnot	241	25
Prek Kreng	109	11
Chang Hoan	172	18
Trapheang Ropov	342	36
<b>Total</b>	<b>864</b>	<b>90</b>

### 3.2 Data Collection

#### 3.2.1 Primary Data

Primary data was used two forms of data collection: quantitative and qualitative data. **PRA** tools such as **community transect**, **time line**, **seasonal calendar** were used to get better understanding of community history, typical land and natural resources use, and to identify the year round community activities of livelihood situation, income and expense and various uses of natural resources. Moreover, SWOT analysis was used to describe and evaluate strength, weakness, opportunities, and threat of the participation of people in natural resource management. Furthermore, **focus group discussion (FGD)** and **questionnaire** which are the key tools were used. They are very important to find out the benefit of the local people in natural resource management. In addition, observation was included during the time of questioning the local people in order that the answered sheet was absolutely sure.

#### 3.2.2 Secondary data

To attain full understanding about the research topic, secondary data has been gathered by reviewed from published books, journal articles, manuals, government reports, research reports, policy documents, rules and regulations papers and internet documents etc. The data

was collected from various sources such as from Royal University of Agriculture, CBNRM Learning Institute, Ministry of Environment, Provincial Environmental Department, Forestry Administration, Work Bank Library, WWF, Save Cambodia Wildlife and community heads as well.

### **3.3 Data Analysis Method**

Qualitative data was organized according to the scheme of analysis around the main issues based on interviews, field notes and recording. Then qualitative data was analyzed according to the main issues compared with the assumptions. Quantitative data was analyzed based on the data/information from interviewing by using questionnaire and other tools with the local community and some key informants.

## **4. Result and Discussion**

### **4.1 Prek Thnot Community Protected Area History**

Prek Thnot CPA is located in four villages including Prek Thnot, Prek Kreng, Chang Hoan, and Trapheang Ropov Village, Tuek Chhou Commune, Kampot Province. It was established in 2002 with the total member of 864 households. The process of being established was held under supported by Ministry of Environment and Borkor national park covered the total area of 2006 hectares. In 2003, the Prek Thnot CPA was financially and technically supported by Save Cambodia Wildlife (SCW) organization for some activities-forest management and capacity building on natural resources conservation awareness and skills in improving the livelihood of local communities. Moreover, SCW helps the community find other donors to additionally support the community. In 2006, with a variety of NTFPs mainly rattan products, a Rattan Group was established as sub-activities of Prek Thnot CPA with technically and educationally supported by WWF and ADB on some skills related to rattan production. About 30 households involved directly in the project. However, 216 hectares out of the total area was given to the Ministry of Agriculture, Forestry, and Fisheries under the management and conservation of Administration of Forestry. In 2007, the Eco-tourism Group with total member of around 30 households was created by SCW and IUCN; however, the process had not well implemented until in 2010. Simultaneously, a traditional medicine group was created in 2007 with about 8 families involved in the program. Presently, any activity in the Prek

Thnot CPA gradually implemented even though all financial and technical support completely ended.

Table 4. Prek Thnot CPA history

Period	Description	Activities	Institutional support	Beneficiary group
2002	<ul style="list-style-type: none"> <li>- Prek Thnot CPA was established</li> <li>- Total member: 864 households</li> <li>- Total land areas: 2006 ha</li> </ul>	<ul style="list-style-type: none"> <li>- Election preparation</li> <li>- Regulation and statute creation</li> </ul>	<ul style="list-style-type: none"> <li>- Ministry of Environment</li> <li>- Borkor National Park</li> <li>- Provincial and local authority</li> </ul>	All members of the community
2003	<ul style="list-style-type: none"> <li>- Processing of Prek Thnot CPA</li> </ul>	<ul style="list-style-type: none"> <li>- Forest inventory</li> <li>- Reforestation</li> <li>- Animal raising skill</li> <li>- Fish culture skill</li> <li>- Forest patrolling</li> <li>- Gender mainstreaming</li> <li>- Natural resource conservation</li> </ul>	<ul style="list-style-type: none"> <li>- Save Cambodia Wildlife (SCW)</li> <li>- UNDP</li> </ul>	Members of the community
2006	<ul style="list-style-type: none"> <li>- Rattan Group</li> <li>- Total land areas: 1790 ha (216 ha was given to the Administration of Forestry)</li> </ul>	<ul style="list-style-type: none"> <li>- Rattan seedlings</li> <li>- Rattan grow</li> <li>- Rattan processing</li> </ul>	<ul style="list-style-type: none"> <li>- SCW</li> <li>- WWF</li> <li>- ADB</li> </ul>	30 households
2007	<ul style="list-style-type: none"> <li>- Traditional Medicine Group</li> </ul>	<ul style="list-style-type: none"> <li>- Strengthening on traditional medicine</li> </ul>	<ul style="list-style-type: none"> <li>- Traffic</li> </ul>	8 households
2007-2010	<ul style="list-style-type: none"> <li>- Eco-tourism group</li> </ul>	<ul style="list-style-type: none"> <li>- Ecotourism concept and management</li> <li>- Establishing CBET</li> <li>- Environmental awareness</li> <li>- Study tours to other community</li> </ul>	<ul style="list-style-type: none"> <li>- SCW</li> <li>- IUCN</li> <li>- Ministry of Tourism</li> </ul>	30 households
2010-Present	<ul style="list-style-type: none"> <li>- Rattan group</li> <li>- Traditional medicine group</li> <li>- Eco-tourism group</li> </ul>	<ul style="list-style-type: none"> <li>- Rattan seedlings</li> <li>- Rattan processing</li> <li>- Eco-tourism process</li> <li>- Forest patrolling</li> </ul>	<ul style="list-style-type: none"> <li>- Community</li> <li>- WWF</li> </ul>	Community



Land use	Sea	Mangrove	Residential, home gardening & paddy field	National road	Residential, home gardening & paddy field	Pasture	Plantation, crop land	Forest
<b>Annual crops</b>	-	-	Water melon, vegetable, rice, maize	-	Water melon, vegetable, rice, maize	-	Cassava, rattans, banana, mango	-
<b>Animals</b>	Fish & aquatic animals	mud crabs, fish, shrimps	Cows, chickens, buffalos	-	Chickens, cows, buffalos	Cows, buffalos	-	Wild animals
<b>Problems</b>	Over fishing, fisheries reduction	Cutting down (firewood)	Insect, salty water	-	Insect, salty water	-	Erosion	-
<b>Solutions</b>	Law enforcement, livelihood alternative	Reforestation, law enforcement	Genetic selection which adapted to salty water, insecticide utilization	-	Genetic selection which adapted to salty water, insecticide utilization	-	Reforestation	-

Figure 2. Transect map of Prek Thnot CPA

To identify types of soil, land use and agricultural activities in the Prek Thnot CPA as well as to find out problems and solutions in the area, the community transect was carried out. Moreover, to clearly observe the community indicators, the village walk mans were involved walking across the community. In addition, some villagers from four aforementioned villages actively joined the activities.

There are 8 zones of the community transect range from the Sea, mangrove area, residential, home gardening and paddy field, national road, residential, home gardening and paddy field, pasture area, plantation and crop land, and forest areas.

### **4.3 Household Activities**

Rice farming and fishing are the main occupations for people living in the Prek Thnot Community Protected Area. The people practice rain-fed rice only one time per year which usually starts from May to December. In reality, the local people could not access to the irrigation system for the irrigated cultivation. Despite the shortage of water in the area, farmers still grow other short-term vegetable/crops after harvesting on the same plots of rice plantation and elsewhere around the home such as watermelon, eggplant, pumpkin, maize, and so on.

Moreover, they reared livestock such as cattle, pig and poultry year round. These activities indicated well livelihood of the local farmers as well as the good interaction of crop livestock production. Furthermore, fishing took very active account in daily livelihood. They are normally fishing in year round with different kinds of fishing gears according to fish species and catching season. Out of the main activities, they usually went to collect NTFPs in the community such as firewood and some kinds used as vegetable in April to May. On the other hand, people joined with social activities such as festivals and wedding ceremonies which are the traditional ceremonies of Cambodia.

Table 5. Seasonal Calendar of Local Community in Prek Thnot CPA

Months Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Farming</b>												
Rice field					—————	—————	.....	.....	.....	.....	—————	—————
Potato				- - -							—————	—————
Pumpkin			—————	—————							- - -	
Taro		- - -	- - -	-								—————
Watermelon	—————	—————	- - -	- - -	—————							- - -
Maize	- - -	- - -	—————	—————								
<b>Animal Raising</b>												
<b>Fishing</b>												
Crab trap			—————	—————	.....	.....	.....	.....	—————	.....	—————	—————
Shrimp gill net					—————	.....	.....				—————	—————
Trawling & Crab gill net	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	—————	—————
Gill net, Push net & Spine foot gill net	.....	—————	.....	—————	—————	.....	.....	.....	.....	.....	.....	.....
Snail loglines	.....	.....	—————						—————	—————	—————	—————
Shrimp spearing gear	—————	—————	—————								—————	—————
<b>No-timber Forest Products</b>												
Mushroom				—————	—————							
Rattan			—————	—————	—————	—————	—————	—————	—————	—————	—————	—————
Traditional medicine & Vine	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————	—————
Willughberiacoc hinchinensis & Maprang				—————								
Burnese grape					—————							
<b>Festival</b>												
	—————	—————	—————	—————	—————					—————	—————	—————

Note:  
 ————— Harvesting/collection/more action  
 - - - Planting  
 ..... Less action

#### 4.4 Livelihood Activities

The complicated work of income generation made their livelihood more active. Accordingly, multiple jobs are needed to do simultaneously and/or continuously. Based on the experience of the local people in the Prek Thnot CPA area, their primary and common jobs were Non-Timber-Forest Products (NTFPs) followed by rain-fed rice and fishing. It is shown that about 91% of the local people were depend much more on NTFPs, 80% on rain-fed farming and 68% on fishing activities shown in fig. 3.

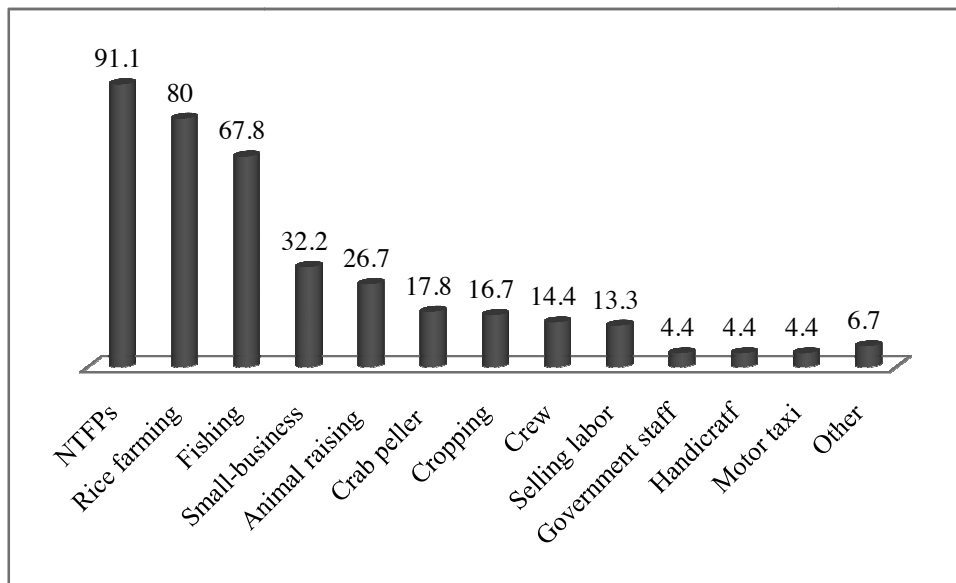


Figure 3. Percentage of livelihood activities of households in Prek Thnot CPA

Moreover, they still required other small-business, livestock raising which resulted in 32% and 27% responded respectively in order to make surplus for daily expend compensation. However, the gap between the rich and the poor were socially appeared. The poor men worked as crew and women worked as crap peelers or small-scale processing which resulted in 14% and 18% orderly. Moreover, about 13% of the respondents work as construction and industrial workers. In addition, 4% of people work as government staffs which are the same as handicraft makers and drivers.

#### 4.5 Source of Income

The respondents had six sources of income: fishery, fishing labor, non-f farm, farming, livestock and forest and NTFPs collection indicated in Table.6. The majority of the respondents had an average fishery (48.2%) income of 17,007,585 Riels which was the



largest percentage of the total income followed by fishing labor both crew and crab peeler (33.2%) about 11,718,928 Riels. Moreover, non-farm (10.6%) activities such as small business, handicraft, motor taxi, employment in government and work as selling labor contributed about 3,724,667 Riels of income. In the result, most of rice product was used for sustenance rather than income, 4% of the respondents had farming (rice and vegetable) income of 1,390,775 Riels compared with livestock (cow, pig, chicken, duck) about 3.5% of the respondent had income of 1,251,138 Riels.

Regarding livelihood activities, about 91% non-timber forest products contributed in household income. However, only 0.5% contributed in the total household revenue which income of 173,187 Riels.

Table 6. Source of Income of Households in Prek Thnot CPA

<b>Item</b>	<b>Average Income (Riel/year/HH)</b>	<b>Percent</b>
Forest & NTFPs collection	173,187	0.5
Farming (Rice & vegetable)	1,390,775	4.0
Livestock	1,251,138	3.5
Fishery	17,007,585	48.2
Fishing Labor (Crew & crab peeler)	11,718,928	33.2
Non-farm	3,724,667	10.6
<b>Total</b>	<b>35,266,280</b>	<b>100</b>

#### **4.6 Perception and contribution in CBNRM of Prek Thnot CPA**

##### **4.6.1 Peoples' participation in committee election in Prek Thnot CPA**

The establishment of the Prek Thnot CPA committees was decided by the local people in the area. However, regulation and statute were created by the Ministry of Environment. The mandate of the committee is five years. It has already been mentioned that 90 households of respondents were interviewed was the member of the Prek Thnot CPA.

Those present in the election event showed great attention of the local people to select the helpful and fair people who were going to manage the community. Actually, it showed that 83% of the respondents' participated in committee election in Prek Thnot CPA while the rest

did not participate in the event due to the business of their jobs (fig. 4). The local people who were living in the Prek Thnot commune had many jobs. Moreover, some people were not invited to committees' election because they participated as a member after the election. However, the election was not heartily participated. Some of them were by rule informed to join the election and some followed the other neighbors without any clear information. Local people stated that there were three communities in the area-community fisheries, community forestry and community protected area.

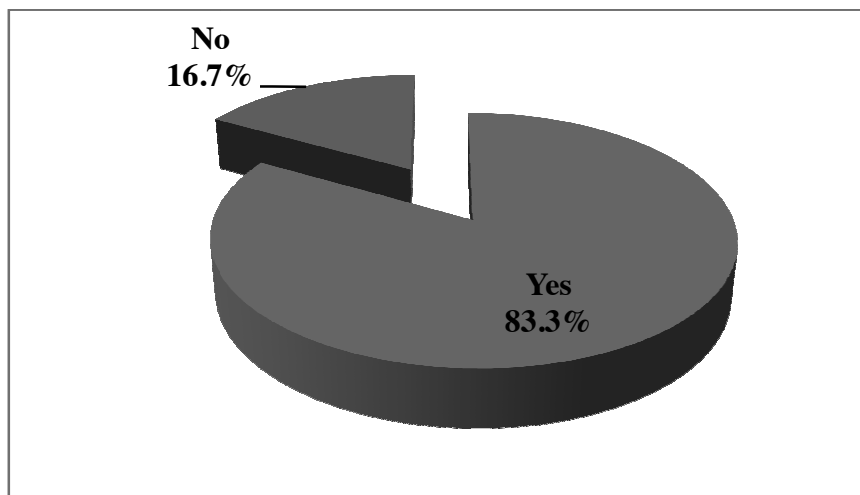


Figure 4. Percentage of peoples' participation in committee election in Prek Thnot CPA

#### **4.6.2 Awareness the Purpose of Establishing Prek Thnot CPA by Community Members**

The Prek Thnot CPA plays a very important role in natural resource management. The objectives of the Prek Thnot CPA were mainly: to conserve and manage the natural resources in the area of sustainable use and to implement the policy of government in protecting and conserving the natural resources by participating. In this study, community members aware that the Prek Thnot CPA was established in order to manage resources, prevented from illegal logging, prevented from land encroachment by powerful men, and improving the livelihood of people. According to questionnaire interview, the respondents agreed that after Prek Thnot CPA was established, the area was owned by the community and there was no more land encroachment from powerful person. Additionally, the natural resources had been improving with activities was mainly reforestation and forest patrolling. They said “now the illegal logging was reduced compared with before created CPA”. Once again, some people could take advantage from the Prek Thnot CPA to generate income from view of conservation and

protecting the resource. From the result, most respondents were aware that the purpose of establishing Prek Thnot CPA is to manage the natural resources in the area (fig.5).

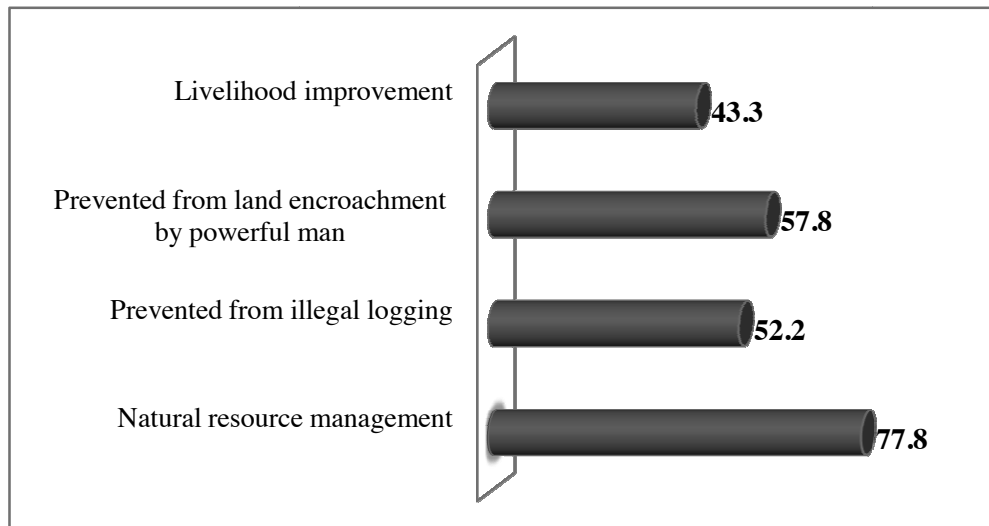


Figure 5. Percentage of awareness the purpose of establishing Prek Thnot CPA by community members

#### **4.6.3 Satisfaction of Community Members in Prek Thnot CPA Management**

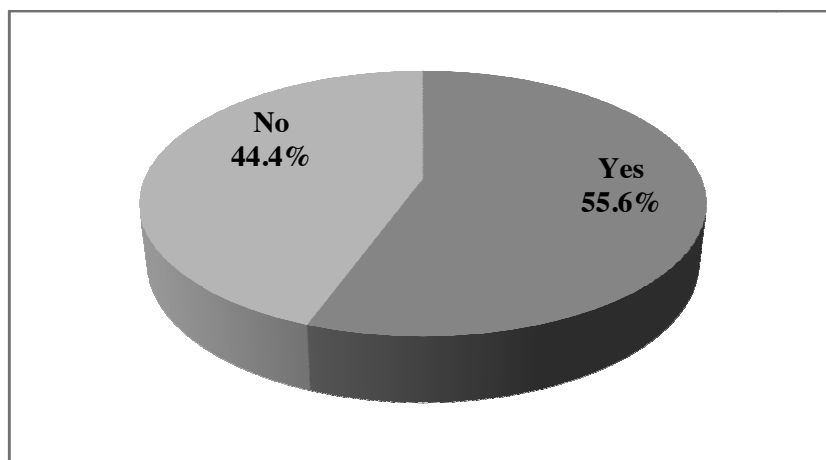


Figure 6. Percentage of satisfaction of community members in Prek Thnot CPA management

During the survey, respondents were asked about their satisfaction of the Prek Thnot CPA process and management. About 56% of them reported that they were satisfied with the management process of Prek Thnot CPA (fig. 6). When asking about the reasons, they said that since the Prek Thnot CPA was established, illegal loggings and conflicts on natural

resource use were reduced with managed by the community. Moreover, forests were increased through the reforestation and protection programs by community members. Furthermore, they also got any benefits from any programs. However, about 44% of the respondents claimed that they are not satisfied with the management process of the community because most programs were done among the head of communities. In addition, information dissemination was very poor and there was lack of cooperation among members and committees of the community.

#### 4.6.4 Understanding of Right of Community Members

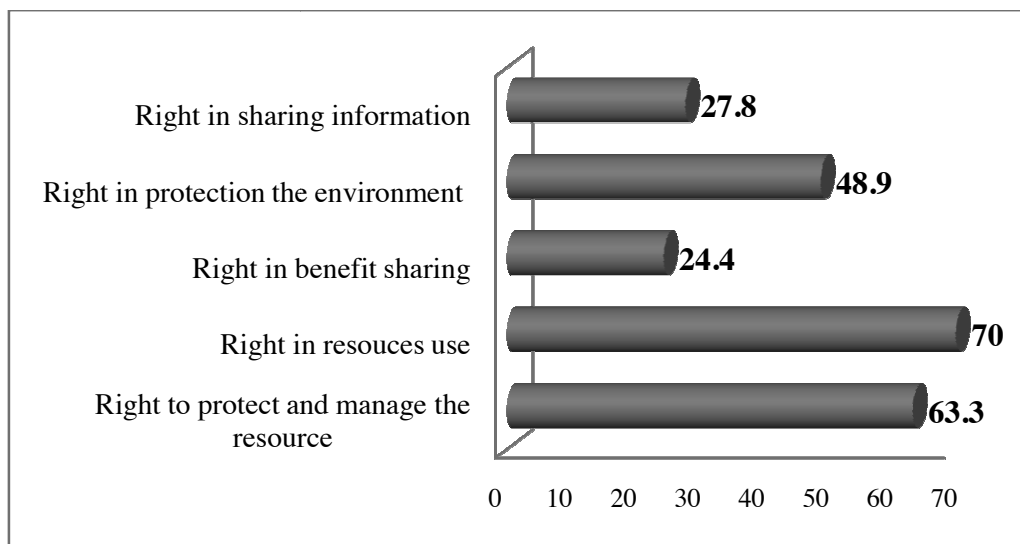


Figure 7. Percentage of understanding of right and task of community members

Local communities are a main factor in CBNRM which should be provided the right and empowerment in sustainable management of natural resources (Danida, 2007). According to the statute of the Prek Thnot CPA, community members can use their right to protect the resource in the form of implementation with any programs such as report to the community or authorities when illegal activities occur in the area. Community members also have right in disseminated and implemented the community statute or activities that CPA has processed. In addition, not only protection, but the community also has right to use the resource as a family scale and benefit sharing. Figure 7 shows that about 70% of the respondents known about their right to use the natural resources. They said “as a community member, I can use the resources in the forest such as firewood, vegetable, rattan and so on. In contrast, I was not allowed to use all these resources, if I did not join as a member”. About 63% of respondent believed that they could use the right to protect and manage the resource and about 49%

could have right in protection the environment. In other cases, only 24% of respondents agreed that the community could share benefits to other members while the rest of respondents stated that “I had never got any benefits from the community. The benefits shared to their relatives only”. About 28% agreed with the right in sharing information.

#### **4.7 Levels of Participation of Community Members in Prek Thnot CPA**

Participation plays an important factor in developing the community to meet sustainable which can help to improve the local livelihood and poverty alleviation of the poor (Tara, 2005). There are many kinds of participation such as participation in meetings, participation in decision-making, participation in planning, participation in management and conservation, participation in implementing and so on.

Table 7. Level of participation of community members in meeting, decision-making, planning, management and conservation, and implementing in Prek Thnot CPA

Item	Non Participation		Low Participation <sup>1</sup>		Average Participation <sup>2</sup>		High Participation <sup>3</sup>	
	Freq.	%	Freq.	%	Freq	%	Freq.	%
Meeting	31	34.4	38	42.2	14	15.6	7	7.8
Decision-making	71	78.9	16	17.8	1	1.1	2	2.2
Planning	78	86.7	11	12.2	1	1.1	0	0.0
Management and conservation	17	18.9	47	52.2	12	13.3	14	15.6
Implementing	47	52.2	20	22.2	13	14.4	10	11.1

(1): participated about 1- 3 times, (2): participated between 4-6 time, (3): participated over 6 times

##### **4.7.1 Participatory Meeting**

With the establishment of the Prek Thnot CPA, by-law agreements have also been established. In Article 24, Chapter 4 of the Prek Thnot CPA's by-law stated that all community members should participate in meeting twice a year; on the Visakah Puja day (Buddha Day) and the festival of the harvest day (Darlien). In the real situation, the meeting

has been held once per year during the festival of the harvest. While people come to celebrate the festival, the community committee takes this opportunity to hold the meeting. It means that people would join the meeting in case they came to the festival. In another way, some meetings were held in development projects which done among committees, village chiefs, commune councils, stakeholders and members who involved in the projects. The study found that about 34% of the respondents were not participated in any kinds of meetings while about 42% participated in low level. The number decreased gradually in average level about 16% and continued to drop by 8% in high level. It seems to be clear that the difference in the level of participation in the meeting can be caused by several varied reasons.

#### **4.7.2 Participation in Decision Making**

The participation in decision-making is a process of development of the community which includes the involvement of local people in the area. To make participation meaningful, local people must have the right to show their opinion and to know the information related to the community. The community committees have to make sure that participation of local people will encourage them with the decision-making in the community development. Instead of this, the real situation, according Sheikh (2010) local people have very low idea to access in the decision-making process because lack of rules and responsibilities (Haque, 2009). In the Prek Thnot CPA, the decision-making process has done only done among committees, village chief, commune councils and stakeholders. After making decision, however, they brought this result to approve from local communities before implementing. The study found that only 2% of the respondents had participated in high level of the decision-making process with only 1.1% was in average level. The percentage of the respondents who participated in the decision-making process was dramatically increased in low level about 18% and raised up to 79% in not participated indicated in table. 7. In this case, lack of education or knowledge of the respondents causes less attention in decision-making processes or members just followed what committees offer. According to the UNESCO/UNDP, 2004 about 36% or 2.4 million people in Cambodia are completely illiterate and 26% or 1.7 million are semi-illiterate. When asked, one of group members to express opinion, others seem to agree with them without thinking, especially if that person is an elder in the group who is considered knowledgeable (Leakhena, 2004).

### **4.7.3 Participation in Planning**

The community needs to set up plans for implementing to ensure sustainable development. All the planning process should be done by local people because they are the key persons that are related directly to the community. Hence, the participation of people in the planning process is very important; because they will know what they will do next to improve their community as well as livelihoods to avoid the wrong planning. During the survey, about 86.7% of the respondents had never participated in the planning process of the community. Thus, the level of participation of people in the planning process is only 11% was in low level and decreased to 1% in average level. There were no data about people's participation in high level showed in table. 7. It is remarkable that people were not considered as the key persons in the planning of the community. The process of this stage also was not different from the decision-making process.

### **4.7.4 Management and Conservation**

The participatory approach in natural resource management is a mean to address the conflict between the people and the protected areas in maintenance of sustainable development and conservation. According to the statute of the Prek Thnot CPA, all members of the community had their own responsibility to take control on the management and protection of the resources in the community. In terms of community management and conservation, the resource utilization needed to be implemented sustainable through the planned program. As the result is presented in Table 7, about 19% of the respondents did not take their control of the community resources. Though, around 52% were at a low level of management and conservation while about 13% of the respondents were in average level and this number was increased slightly in high level about 16%. In this case, it can be clearly that the management and conservation process in the Prek Thnot CPA was still low with some reasons such as the limited knowledge and poor living standard. According to regulation and lay-law of Prek Thnot CPA, Article 30, NTFPs collection was provided for household use with getting permission from committee incase emergency mainly medicine no need request. Moreover, in Article 34 and 36, the cutting trees for firewood or charcoal purposes as well as generate income were banned; however, for household use was getting permission from community committees. In the real situation, when asked about firewood, almost people in the area go to

collect the tree for firewood and other households use purpose without request from the community committees and few of them cutting the trees for business purpose. Any ways, some of the respondents who replied of participated in management and conservation were the members who involved in reforestation, forest inventory and forest patrolling programs. Also, participated in these programs, members as well as the committees were gotten some benefits or incentives, so it could be enough them more active in the management and conservation the resources. In CPAs, the community and park rangers cooperate to patrol the forest, sharing responsibility in identifying any illegal activities (Leakhena, 2004).

#### **4.7.5 Project Implementation**

There were many projects or programs that have been implemented in the Prek Thnot CPA in order to protect natural resources as well as improved livelihoods of the local people in the areas. However, those projects or programs were not applied to all of the community members. For the reasons, some of them participated directly and most of them were not. According to households' survey, about 52% of the respondents replied not participated in implementation project while some of them were participated in low level at 22%. The percentage of the respondents dropped to 14% in average level and continued to decrease slightly by 11% in high level. The difference level of this stage depended on the time people participated in.

### **4.8 Positive Impacts of Participation**

#### **4.8.1 Capacity Building and Knowledge Improvement**

Focus discussion with the communities committees found that the capacity buildings and skills were conducted under supported by stakeholders such as such as Ministry of Environment, SCW, UNDP, WWF, ADB, Traffic, Ministry of Tourism on following skill and topic: forest inventory, reforestation, animal raising skill, fish culture skill, forest patrolling, gender mainstreaming, natural resources conservation, rattan seedlings, rattan grow, rattan processing, strengthening on traditional medicine, ecotourism concept and management, establishing community based Eco-tourism, environmental awareness and study tours to other community. According to household surveyed, about 44% attended in training courses and about 32% of them perceived benefits. However, with limited



knowledge background and did not practice after the training, about 12% of the respondents who attended in training claimed that they did not get benefits from the programs.

Capacity of local communities could be strengthened through formal and informal education or short-course training programs.

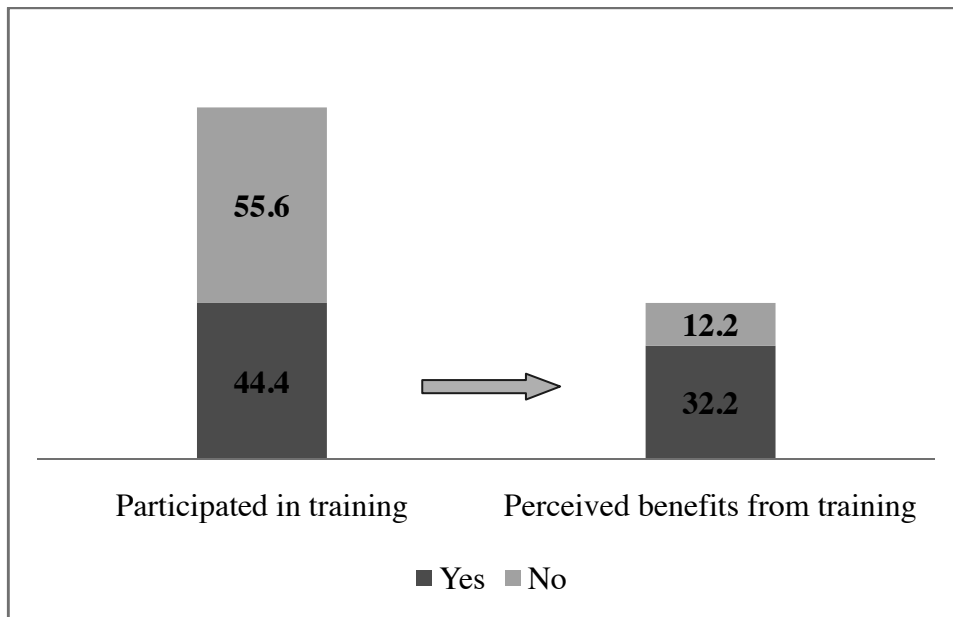


Figure 8. Percentage of the respondents participated in training courses and perceived benefit from training

#### 4.8.2 Gender Equity Improvement

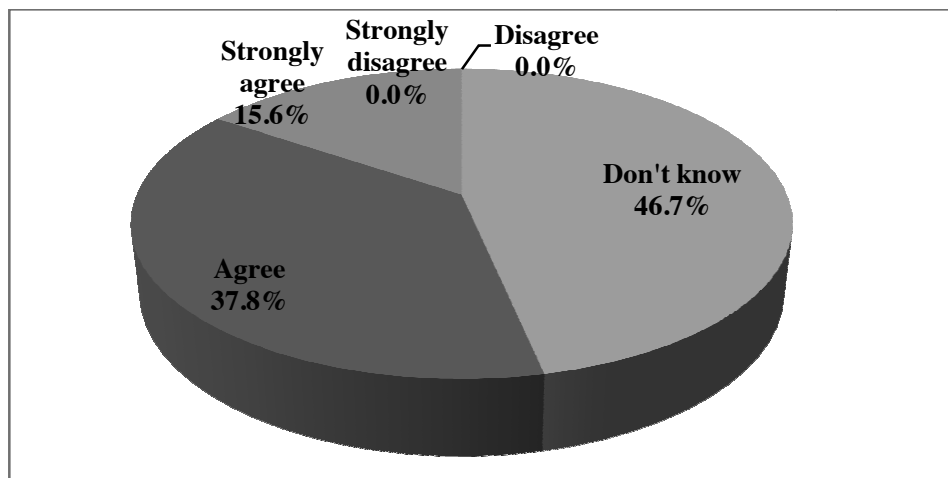


Figure 9. Percentage of degree of the respondents' perception in improving gender equity

Normally, the characteristic of community members in Cambodia was allowed as all household members did not for individuals. It means that if a head of household participated as a member of the community, members of a family would also be the member of the community but count as a member.

Therefore, when the head of household did not join any kinds of community activities, he asked his wife or children to join. When asked about gender, about 47% of the respondents agreed that CPA encourage women to participate in the natural resource management while about 16% strongly agreed. With the less participation, most of the respondents did not know about gender has improved in the community.

#### **4.8.3 Employment Creation and Income Generation of Community Members**

The poverty reduction in rural areas is one of the CBNRM approaches which provide jobs for local people (Lesego, 2010). From the focus group discussions as well as the interview with the community committees and community members pointed out that any programs and activities of the Prek Thnot CPA provided many jobs for the local communities who directly involved in community process and management activities. During the survey, 9% of the respondents got high benefits through 10% was low benefits. The local communities seem to be getting fewer benefits of community in job creation about 27% of the respondents were getting the low benefit and there was no reported about the job creation of local communities was 54%. The community committees reported that people who participated in the meeting, decision-making, planning, management and conservation, and implementing programs had more opportunities to get jobs than people who did not.

People could generate income from sources such as small and medium businesses in the eco-tourism area (selling food in Anlong Thom waterfall) which had an income of 9,434,000 Riels/year. Moreover, after the training on rattan processing, some members practiced these skills which gained an income of 2,775,000 Riels/year. Natural protection and conservation (forest patrolling) was also the sources of income for the local communities to support their livelihoods (180,000 Riels/year). In addition, increased of NTFPs also increase income for the local communities. People collected NTFPs for the household uses and economical purposes and some NTFPs such as rattan was also used as handicrafts to get income for livelihood. Furthermore, increased of NTFPs also increase income for the local communities.

People collected NTFPs for the household uses and economical purposes and some NTFPs such as rattan were also used as handicrafts to get income for livelihood which provided 270,000 Riels/year. For this reason, some people also collected rattan before established of Prek Thnot CPA, however, there were not clear recording of income from this source and most people corrected it in household use. In tradition, the average income of 50,000 Riel/year was gotten from the traditional medicine project. From the survey of the households, about 41% of them did not get any extra income from participating in Prek Thnot CPA and 43% got low extra income. There was a decrease in income at 4% before it slightly rose again about 11% on high extra income.

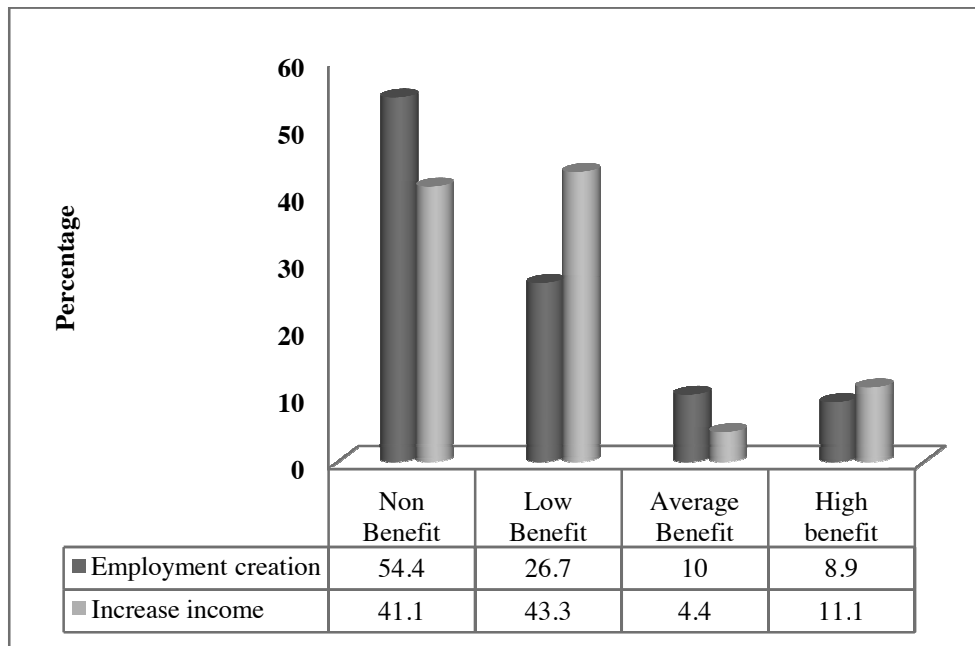


Figure 10. Percentage of employment creation and income generation of community members

#### **4.8.4 Members Perception in the Environmental Aspect**

Table 8 shows environmental benefits of Prek Thnot CPA management of the community. During interview, the respondents were asked to give the exact answer as the interviewer reads in every sentence indicating the environmental benefits that could be provided by the management of Prek Thnot CPA.

Table 8. Degree of members' perception in the environmental aspect as affected by the community

Item	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
Increase awareness of local communities on conservation	13.3	23.3	34.4	17.8	11.1
Improve biodiversity	00.0	3.3	13.3	62.2	21.1
Increase water, air, and other environmental qualities	10.0	17.8	48.9	15.6	7.8
Improve landscape characteristic with clean environment	5.6	4.4	32.2	35.6	22.2

The result showed that about 11% of the respondents strongly agreed that participation of the people would increase awareness of local communities on resource conservation which 13% strongly disagreed with this point of view. Moreover, about 62% of the respondents believed that the Prek Thnot CPA community enhances good biodiversity in the area while only 3% disagree. About half of the respondents (49%) replied in the not sure level with the increase water, air, and other environmental qualities in the area while only 8% strongly agreed and 10% strongly disagreed. In addition, 36% of the respondents agreed that landscape characteristic of the area improved.

#### 4.9 SWOT Analysis

Strengths, Weaknesses, Opportunities and Threats for Natural Resource Management in Prek Thnot CPA.

##### Strengths:

- Illegal activities have been reduced
- Rich natural resources and biodiversity
- Most of the community members are well aware of the importance of natural resources and forest
- The community boundaries are clearly defined
- Increased awareness on natural resource management at community level

- Decision makings are approved by both sides-members and committees
- Commitment to self- management after the project ended.

**Weaknesses:**

- Some community members did not want to report on illegal activities
- Lack of cooperation and communication between committees and members
- Limitation of knowledge among committees and members
- Internal conflicts on benefit sharing and using natural resources
- Poor participation from community members
- Some members have to engage in other activities for their household income
- Less motivation mechanism by community to member to act in community
- Limited skill to handle internal and external conflicts.

**Opportunities:**

- Support from relevant institutions and organizations on community management and development
- Capacity building opportunity for community members through training
- Potential to develop eco-tourism
- Income generating opportunities (NTFPs collection, service in eco-tourism).

**Threats:**

- The illegal loggers still exist because of poor management
- Lack of fund for running and start up activities
- Limited support from local authorities
- Other job opportunities are making more income that encourages local people to spend much of their time.

## **5. Conclusions and Recommendations**

### **5.1 Conclusions**

- Participation level is limited due to lack of awareness and limited communication between community and members.
- The community feels positive about the national resource management although low respondent activities have impact on their income.
- Constant interaction between members and committee and local authority is limited.
- Members pay more intention on household income.

### **5.2 Recommendations**

- There should be improvement on management skills for community members, more interaction between community members and local authority for capacity building, and share benefits for all members.
- Provide and show positive impacts to the community.
- The community's strength and weakness should be analyzed well.

## References

- Arntzen, J., Buzwani, B., Setlhogile, T., Kgathi, D. L., & Motsholapheko, M. R. (2007). *Community-based resource management, rural livelihoods, and environmental sustainability*. Gaborone: Centre for Applied Research.
- Cambodia at the Crossroads: Strengthening Accountability to Reduce Poverty:*  
[www.worldbank.org/INTCAMBODIA/Resources/chap4.pdf](http://www.worldbank.org/INTCAMBODIA/Resources/chap4.pdf)
- Chin, T. (2005). *Local community participatory in establishment of community forestry and sustainable forest utilization: A case study of take on community forestry integrated development association*. Royal University of Agriculture. Phnom Penh. Cambodia.
- Chheang, V. (2008). *The political economy of tourism in Cambodia*. The Asia-Pacific Journal of Tourism Research. Vol.13.No.03.
- Chhuon, K. Buoy, R. Kaing, K and Darren, C. (2005). *Management of River and Reservoir Fisheries in the Mekong Basin, Cambodia Sub-Component*. Adaptive community fisheries management in Cambodia what indicators? Proceedings of 7th Technical Symposium on Mekong Fisheries. Ubon Ratchathani, Thailand, 15th - 17th November 2005 Page 301.
- Crook, R. and Manor, J. (1998). *Democracy and Decentralization in South Asia and West Africa*. Cambridge University Press, Cambridge.
- Degen, P., F. van Acker, N. van Zalinge, T. Nao and D. Loeung. (2000). *Taken for granted: Conflict over Cambodia's freshwater fish resources*. Paper presented at the IASCP Common Property Conference, Indiana, USA.
- Elham, F., Seyed, M, H., and Amir, K, D. (2008). *Analyses of Factors Influencing Rural People's Participation in National Action Plan for Sustainable Management of Land and Water Resources in Hable-Rud Basin, Iran*.
- Esther W., D and Ndalaha F., M. (2003). *Public participation in integrated water resources management: the case of Tanzania*.
- ICEM. (2003). *Cambodia national report on protected areas and development*. Review of Protected Areas and Development in the Lower Mekong River Region, Indooroopilly, Queensland, Australia.

- Jan, B. (2000). *Natural resources management*. Retrieved from [http://www.google.com.kh/#hl=km&q=Jan%2C+B.\(2000\)+Natural+Resources+Management.&oq](http://www.google.com.kh/#hl=km&q=Jan%2C+B.(2000)+Natural+Resources+Management.&oq)
- Jimmy, W. (2009). *Natural resource management*. Retrieved from [http://en.wikipedia.org/wiki/Natural\\_resource\\_management](http://en.wikipedia.org/wiki/Natural_resource_management)
- Jones, B.T.B. (2004). *CBNRM, Poverty Reduction and Sustainable Livelihoods: Developing Criteria for Evaluating the Contribution of CBNRM to Poverty Reduction and Alleviation in Southern Africa*. Retrieved from [www.cassclass.org](http://www.cassclass.org)
- Kabi, P, P. (2011). *Role of participatory research on natural resource management: A case of Karnali Watershed Area, Nepal*.
- Kate, B. (2009). *Challenges and Opportunities of Participatory Planning Processes for Natural Resources Management in Cambodia*. CBNRM Learning Institute. Volume II. Phnom Penh. Cambodia.
- Ken, S. R. (2005). *Understanding Key CBNRM Concepts in The Development of Community Based Natural Resource Management in Cambodia*, selected paper on concepts and experiences. CBNRM Learning Institute. Volume I. Phnom Penh. Cambodia.
- Krishna K., Shrestha<sup>1</sup> & Phil, M (2008). *The politics of community participation in natural resource management: lessons from community forestry in Nepal*.
- Lesego, S.S. (2010). *Community-Based Tourism Ventures, Benefits and Challenges: Khama Rhino Sanctuary Trust, Central District, Botswana*. University of Botswana. Botswana, p. 140.
- McKenny, B., &Tola, P., 2002: *Natural Resources and Rural Livelihoods in Cambodia: Abaseline Assessment*, Working paper 23, Cambodia Development Resource Institute (CDRI).
- Meas, S.V and San, S.L. (2005). *Community Protected Area Development in Cambodia*. CBNRM Learning Institute. Volume I. Phnom Penh. Cambodia.
- Ministry of Foreign Affairs of Denmark. (2007). *Community Based Natural Resources Management*. DANIDA. Retrieved <http://www.google.com.kh/#hl=km&q=DANIDA.+%282007%29+Community+Based+Natural+Resources+Management.&oq>



- Reid, J.N. (2000). *Community Participation*. How People Power Brings Sustainable Benefits to Communities. USDA Rural Development. Retrieved from [http://www.google.com.kh/#hl=km&q=\(2000\)+Community+Participation.+How+People+Power+Brings+Sustainable+Benefits+to+Communities.+USDA+Rural+Development.&oq](http://www.google.com.kh/#hl=km&q=(2000)+Community+Participation.+How+People+Power+Brings+Sustainable+Benefits+to+Communities.+USDA+Rural+Development.&oq)
- Richk L., L (2001). *Choosing Public Participation Methods for Natural Resources: A Context-Specific Guide*.
- Rihoy, E., & Steiner, A. (1995). *The commons without tragedy? Strategies for community-based natural resources management in Southern Africa*. In Proceedings of the regional natural resources management annual conference.
- Sasane: *SADC Wildlife Technical Co-ordinating Unit*.
- San, S.L (2004). *Indicating Success: Evaluation of Community Protected Areas in Cambodia*. Department of Nature Conservation-Protection. Ministry of Environment. Phnom Penh, Cambodia.
- Sheikh, N.M. (2010). *People's Participation in Development Projects at Grass-Root Level: a Case Study of Alampur and Jagannathpur Union Parishad*. North South University. Bangladesh.
- Sokrin, K. and Lenore, M. (2008). *Community participation and social engagement in the prevention and control of dengue fever in rural Cambodia*.
- Søren, L.(2002). *Community Participation in Natural Resource Management Projects: A Rational Institutional Choice? Some Evidence from Sand Dune Fixation in Mauritania*.
- Willian, B and Catherine, L. (1997) *Understanding the Community in Canadian CBR: Critical lessons from abroad*. Canadian Journal of Rehabilitation.
- World Bank.(2004). *Cambodia Data Profile*. World Development Indicators database. Retrieved from <http://www.worldbank.org>
- World Bank. (2004). *Cambodia at the crossroads: Strengthening accountability to reduce poverty*. Retrieved from: <http://www.worldbank.org/INTCAMBODIA/Resources/1-report.pdf>
- WWF.(2008). *Livelihood Sustainability Analysis in Mondulkiri Province*. WWF Greater Mekong-Cambodia Country Programme. Phnom Penh, Cambodia.

## **About MINZAS**

MINZAS program is a partnership program of Mekong Institute and New Zealand Embassy in Bangkok. The objective of this program is to enhance research capacity of young GMS researchers by providing a structured learning and field research application program for 36 master's degree students from provincial universities in Cambodia, Lao PDR, Myanmar and Thailand.

Through a comprehensive supports – trainings, roundtable meeting, constructive advices from MI advisors including financial supports – which are to be and have been provided to scholarship grantees, students' research skills and conduction of research deem to be developed. The completed research works will be published in 'MI Working Paper Series' and disseminated to related agents among the GMS.

The MINZAS Program is designed for 3 cycles; each cycle lasts for one year with 4 phases:

- Phase One: Training on Research Methodology
- Phase Two: Implementation of Sub-regional Research in Respective Countries
- Phase Three: Research Roundtable Meeting
- Phase Four: Publication and Dissemination of Students' Works in 'MI Working Paper Series'

### **The research cycle involves:**

- One month training course on GMS Cooperation and ASEAN Integration, research development and methodology. The students will produce their research designs and action plans as training outputs;
- Technical assistance and advisory support to MINZAS scholars by experienced mentors and academicians in the course of the research process;
- The scholars will present their research papers in a round table meeting attended by subject experts and their peers;
- Scholars will revise their research papers and improve as necessary, based on experts and peer review during the roundtable meeting;
- Publication of reports as MI working paper series.

**The Mekong Institute (MI)** is an intergovernmental organization with a residential learning facility located on the campus of Khon Kaen University in the northeastern Thailand. It serves the countries of the Greater Mekong Subregion (GMS), namely, Cambodia, Lao P.D.R., Myanmar, Thailand, Vietnam, Yunnan Province and Guangxi Zhuang Autonomous Region of PR. China.

MI is the only GMS-based development learning institute, chartered by the six GMS Governments, offering standard and on-demand capacity development programs focusing on regional cooperation and integration issues.

MI's learning programs services caters to the capacity building needs of current and future GMS leaders and policy makers on issues around rural development, trade and investment facilitation, human migration, with good governance and regional cooperation as cross cutting themes.

## Vision

Capable and committed human resources working together for a more integrated, prosperous, and harmonious GMS.

## Mission

Capacity development for regional cooperation and integration.

### MI Program Thematic Areas



For more information, visit  
[www.mekonginstitute.org](http://www.mekonginstitute.org)



# Mekong Institute

Research Working Paper Series 2012



**NEW ZEALAND**  
**Embassy BANGKOK**  
**TE AKA AORERE**

---

This publication of Working Paper Series is part of the Mekong Institute – New Zealand Ambassador Scholarship (MINZAS) program. A collaboration project between New Zealand Embassy in Bangkok and Mekong Institute aims to bring forth the research development within the Greater Mekong Subregion (GMS) through educational provision that will be given to 36 master's degree students from Cambodia, Lao PDR, Myanmar, and Thailand (2012 - 2014).