

**Dynamics of Planning Process in the Lower Mekong Basin:
A Management Analysis for the Se San Sub-Basin**

Inaugural-Dissertation
zur Erlangung der Doktorwürde
der
Philosophischen Fakultät
der
Rheinischen Friedrich-Wilhelms-Universität
zu Bonn

vorgelegt von

LY THIM

aus

Prey Veng, Cambodia

Bonn, 2010

Gedruckt mit der Genehmigung der Philosophischen Fakultät
der Rheinischen Friedrich-Wilhelms-Universität Bonn

Zusammensetzung der Prüfungskommission:

Prof. Dr. Hans-Dieter Evers
(Vorsitzende/Vorsitzender)

Prof. Dr. Solvay Gerke
(Betreuerin/Betreuer und Gutachterin/Gutachter)

PD. Dr. Peter P. Mollinga
(Gutachterin/Gutachter)

Prof. Dr. Christoph Antweiler
(weiteres prüfungsberechtigtes Mitglied)

Tag der mündlichen Prüfung : 10 June 2010

ACKNOWLEDGEMENT

This thesis would not have been possible without the help and support of many people. Above all I would like to thank Prof. Dr. Solvay Gerke for accepting me to be her supervisee from the outset. Without her acceptance I could not enroll in the PhD program of Bonn Interdisciplinary Graduate School of Development Research (BiGS – DR –) at the Center for Development Research (ZEF) of Bonn University.

I owe a deep debt of gratitude to my second supervisor, PD. Dr. Peter P. Mollinga, for his invaluable guidance and suggestion through out the preparation of this thesis. Without his constant advice this thesis would not have been completed.

I am grateful to my advisor, Prof. Dr. Hans Dieter Evers, for visiting me in the field and giving me the benefit of his advice and guidance in data collection and analysis. Without his field mission, my data collection would have been insufficient for the analysis.

I take this opportunity to thank the librarian and all staff of the “BiGS – DR –” program of ZEF. My thankfulness in particular goes to Ms. Zabel Rosemarie for her kind assistance in all matters related to academic as well as social aspect.

I am also greatly indebted to the German Academic Exchange Service (DAAD) for providing financial support for this study. Without this financial assistance my study would not be possible.

I have special pleasure in expressing my appreciation to friends and colleagues who helped me to accomplish this thesis. My deepest appreciation goes to Julia-Roswitha Kloos, Tatjana Bauer, Nadine Reis, and Anna Hennecke at ZEF, and Veronika Kham who helped translating the required summary of this thesis into German version. Thanks also go to Dr. Daphne Gondhalekar for her proof read of the German summary. Without their assistance I could not submit this thesis to the Faculty of Philosophy.

Last but not least I would like to thank my wife Arounna Vongsakhamphouy for her personal support in the process of this thesis writing. To my son, Arounyadet Thim, he enriches my life substantially. To my parent, parent in-law, sisters and brothers for their continuous support and encouragement.

Ly Thim

June 2010

ABSTRACT

The purpose of this study was to explore how various actors have responded to hydropower dam impacts in the Se San river basin as away to unpack how river basin management works in practice. The Se San river basin is shared by upstream Vietnam and downstream Cambodia. In 1993, Electricity of Vietnam began constructing 720 MW Yali-Falls dam in upstream Vietnam and the dam began to cause downstream impacts in Cambodia in early 2000. Since then conflict between the affected downstream communities and upstream dam builder has been emerging

To study the responses, the concept of social interface of actor-oriented approach was used to analyze the arena of conflicts at three levels including local, national and international arenas.

At local arena, two interesting responses were found. First, the responses emerged from local communities in term of coping strategies to the dam impacts which were identified as very limited. Some of their coping strategies caused destruction of natural resources such as deforestation for new settlement and farming. Second, the responses were organized by NGO network in Cambodia and abroad to establish a grass-root NGO for advocacy against the dam building called Se San Protection Network. This network was built with a strong cooperation with other NGOs across national and international levels but a weak collaboration with government has been found. Although Vietnam and Cambodia governments recognized that the dam has an impact on local livelihoods, compensation for past, present and future losses was ignored and mitigation of impacts remains questions. As there is no tangible result from the NGO Network, some affected communities have lost their confidence in supporting advocacy network. If this continues to occur the strength of advocacy network tends to be weak in the future.

At national arena, responses were initially done through the Mekong River Commission for which Cambodia and Vietnam are the members. Through the intervention of the Mekong River Commission, a Joint Committee for Se San Management between Cambodia and Vietnam was established to discuss and negotiate a number of actions such as mitigation measures, monitoring water quality and impacts assessment study. No compensation issue has been discussed because Cambodia government did not make a demand. The analysis of this study revealed that mitigation measure was not fully implemented by the Joint Committee as water level fluctuation and water quality still remains an issue. In addition, notification system on dam water release was not either smoothly delivered to local communities because of poor communication facility. An important finding in this arena was that the Cambodia government did not give much attention to solve the

Se San issue. One of the examples is that the Cambodia joint committee whose task is to negotiate with Vietnam had no budget to organize the meeting since 2004.

At international and global arenas the study found that the Electricity of Vietnam has used various strategies to avoid cost such as shifting the debate of the Yali-Falls dam impact from international and global levels to a bilateral one which was more favorable and easy to deal with. In this case, problem was scaled down from a larger to a smaller context. At international arena, the author also discovered that the role of the Mekong River Commission Secretariat in conflict resolution is weak as the Secretariat has no mandate to preside over conflict resolution but rather as a facilitation role to the parties. In this case negotiation between Cambodia and Vietnam was done bilaterally which is favorable for Vietnam to control the game.

The last finding of this study was that Cambodia government has an interest in dam building and has registered Electricity of Vietnam to build dams particularly for the section bordered to Vietnam to boast political and economic ties between the two countries.

Overall, the author concluded that the planning process in the Se San River basin highly served the interest of dam builders as well as national interest and failed to take into account the interest of local communities whose livelihoods depend on river system for a living. To meet their interests and goals, powerful actors zigzagged their strategies to avoid claims made by affected communities and NGOs. Future study should deal with how Mekong River Commission's role shall be promoted to voice the power of local communities in dam development process.

Key words: river basin management, hydropower dam impact, social actors and responses, social interface, and arena of conflict

TABLE OF CONTENTS

<i>Acknowledgement</i>	<i>i</i>
<i>Abstract</i>	<i>iii</i>
<i>Table of Contents</i>	<i>v</i>
<i>List of Figures</i>	<i>ix</i>
<i>List of Tables</i>	<i>x</i>
<i>List of Boxes</i>	<i>x</i>
<i>Acronyms</i>	<i>xi</i>
<i>Zusammenfassung</i>	<i>xiii</i>
Chapter 1 Introduction	1
1.1 Introduction	1
1.2 Background to the study	1
1.3 An overview of the Se San River.....	5
1.3.1 Physical geography	5
1.3.2 Elevation	7
1.3.3 Climate and rainfall	7
1.3.4 Population, ethnicity and economic characteristics	7
1.4 Research approach and methodology	9
1.4.1 Methodological design – three arenas	9
1.4.2 Methods of data collection	10
1.5 An overview of dam affected area in Ratanakiri province	13
1.5.1 Overall area and population affected by dam	13
1.5.2 Overview of socio-economic characteristics	15
1.6 Structure of thesis	18
Chapter 2 Theoretical Review and Analytical Framework	20
2.1 Introduction	20
2.2 Issues of river basin development	20
2.3 Terms and concepts of river, river basin and management	22
2.3.1 River	23
2.3.2 River basin	23
2.3.3 River basin management	24
2.3.4 Organizational models of river basin management	25
2.3.5 The complexity of river basin management	27
2.4 Concepts of development and its meaning in relation to hydropower development	28

2.4.1 Concepts of development	28
2.4.2 The meaning of development in relation to hydropower development	30
2.5 Concepts of planning	35
2.5.1 General views of planning	35
2.5.2 Characteristics and intrinsic nature of planning	36
2.5.3 The process view of planning: management from the planning perspective	37
2.5.6 Planning as a political process	40
2.6 Analytical framework – an actor-oriented approach to social interface in planning	42
2.6.1 General concept of actor-oriented approach	43
2.6.2 Agency, knowledge and power	45
2.6.3 Social interface	47
2.6.4 Arenas	50
2.7 Summary and conclusion	51

Chapter 3 Water Resources Development Planning in the Lower Mekong Basin: an Empirical Experience for Hydropower Development in the Se San Sub-basin **55**

3.1 Introduction	55
3.2 Historical review of water resources planning and management in the Mekong River Basin	55
3.2.1 Geographical location of the Mekong basin	55
3.2.2 The birth of the Mekong project from 1947 to 1956	58
3.2.3 The Mekong Committee (1957-1977): an era for promoting hydropower development on the Mekong’s tributaries	59
3.2.4 Interim Mekong Committee (1978-1994): planning during an uncompleted member	61
3.2.5 Mekong River Commission (1995-Present): reactivation of full committee’s members	62
3.2.6 Discussion and conclusion	65
3.3 The process of hydropower development in the Se San sub-basin	67
3.4 Hydropower development in the Se San River: from Vietnamese perspective	69
3.4.1 The role of Se San River in economic development trajectory in Vietnam ...	69
3.4.2 Status of hydropower development in the Se San River	72
3.5 Conclusion	74

Chapter 4 Local Arena: Struggle the Battle – Success versus Challenge	77
4.1 Introduction	77
4.2 Hydropower dam impacts: differences in viewpoints	77
4.2.1 The perspective of river bank communities	78
4.2.2 Other viewpoints on local impacts	80
4.2.3 Concluding remarks	87
4.3 Local coping capacity, knowledge and problems encountered	88
4.3.1 Coping capacity toward flood events	88
4.3.2 Organizing cultural practices as a means for recovery	90
4.3.3 Abandoning and relocating home	91
4.3.4 Taking self-precaution measure	93
4.3.5 Seeking other alternatives of livelihoods	94
4.3.6 Coping with the decline of water quality	96
4.3.7 Concluding remarks	97
4.4 The emerging response in to dam impacts	98
4.5 The formation of Se San Protection Network and network building	100
4.6 Strategies and choices of Se San Protection Network	105
4.6.1 Propagation of Se San issues for transboundary dialogue	106
4.6.2 Formation of rivers coalition network: linking local actions to national, international and global arenas and vice-versa	108
4.6.3 Capacity building of the network	110
4.6.4 Community network meeting and petition preparation	111
4.6.5 Research and documentation	114
4.6.5 Political support	116
4.6.7 Restoration of local livelihoods through partners	118
4.7 Outcomes and challenges	120
4.7.1 Communities’ awareness and support in advocacy	120
4.7.2 Acknowledgement on dam impacts	121
4.7.3 Challenges facing local communities and Se San Protection Network	122
4.8 Conclusion	123
Chapter 5 National Arena: Success or Failure of Intervention?	127
5.1 Introduction	127
5.2 State’s structure: actors and politics related to water resources management	127
5.2.1 National government: line ministries and inter-ministerial committee	129

5.2.2 Sub-national government: province, district, commune and village	133
5.3 Cambodia interest in water resources development	135
5.4 Governmental response to February 2000 flood event caused by water release from Yali-Falls dam	137
5.4.1 Immediate response of national agencies	137
5.4.1 Responses of border provincial authorities	141
5.4.3 Establishing mechanism for negotiating mitigation measure	142
5.5 Mitigation measures	144
5.5.1 Failure of notification system	144
5.5.2 Monitoring and mitigating water level fluctuation	147
5.6 The issue of water quality	149
5.7 Negotiating for an impact assessment	152
5.8 Compensation	155
5.9 Conclusion	159
Chapter 6: International and Global Arenas: More Protests More Dams	162
6.1 Introduction	162
6.2 Protesting and fighting against the Yali-Falls dam: the role of distant actors	162
6.3 Funding and withdrawing of support by the Asian Development Bank (ADB)	171
6.4 The Mekong River Commission Secretariat as an intermediary: responses and the issue of power relation	173
6.5 Negotiating Se San dams in Cambodia's stretch	178
6.6 Conclusion	182
Chapter 7: Conclusion	185
References	189
I. Interviews	189
II. Focus Group Discussion by District	195
III. Bibliography	198

LIST OF FIGURES

No.	Title	Page
1.1	Overview of the Se San River Basin	6
1.2	Map of Ratanakiri Province	13
2.1	Planning as a process of action	40
3.1	Physiographical and political divisions map of the Mekong Basin	57
3.2	Organizational structure of Mekong River Commission	63
3.3	Mekong River Commission Program Structure	65
3.4	Map of planned hydropower stations and the location of the proposed North-to-South 500 kV high-tension power line in Vietnam (in the early 1990s)	71
3.5	Cross section map of hydropower dam cascades on Se San River in Vietnam	73
4.1	Magnitude of daily water fluctuation at Andong Meas from January 2004 to May 2006	84
4.2	Frequency of water level fluctuation within the day at Andong Meas from 2002 to 2004	85
4.3	Jarai women are sitting and waiting to get water from forest based water hole	96
4.4	Organizational structure of 3 S Rivers Protection Network (3SPN)	103
4.5	Structure of Se San Community Network (SCN) indicated in shade box	104
5.1	Governance Structure of the Public Sector in Cambodia, 1999	128
5.2	Hourly water levels at Andong Meas in Cambodia, Se San River from 2000-2002	149

LIST OF TABLES

No.	Title	Page
1.1	Administrative divisions and Area of Se San Basin	6
1.2	Average monthly rainfall (mm) in some stations in Se San basin (1985-2000)	7
1.3	Number of Se San's riverbank population in Ratanakiri Province, 2006	15
1.4	Rice cultivation areas by district and commune adjacent to Se San River, 2006	17
3.1	Distribution of water resources in the Mekong River Basin	56
3.2	Name of hydropower projects listed by Mekong Committee in 1968	68
3.3	Dams on Se San River in Vietnam territory	74
4.1	Key impacts caused by the Yali-Falls dam as found by Oxfam America 2001	83
4.2	Population of the abandoned villages by district and commune	92
5.1	State's actors involved in water resources management in Cambodia	132
5.2	Hydropower Development Plan 2010-2020 Generation Projects in Cambodia	137
6.1	Responses of MRC Secretariat after February 2000 flood event caused by water release from the Yali-Falls dam	177

LIST OF BOXES

No.	Title	Page
4.1	Example of petition prepared by Se San Community Network	113
4.2	Reports prepared by 3SPN's partners	115

ACRONYMS

- 3SPN	3 S Rivers Protection Network
- ADB	Asian Development Bank
- AMRC	Australian Mekong Resource Center
- BDP	Basin Development Plan (Mekong River Commission)
- CEDAC	Centre d'Etude et de Développement Agricole Cambodgien (French acronym stand for Cambodian Centre for Study and Development in Agriculture in Cambodia)
- CNMC	Cambodia National Mekong Committee
- ECAFE	Economic Commission for Asia and the Far East
- EIA	Environmental Impact Assessment
- EP	Environment Program (Mekong River Commission)
- EVN	Electricity of Vietnam
- GAPE	Global Association for People and the Environment
- IMC	Interim Mekong Committee
- MAFF	Ministry of Agriculture, Forestry and Fisheries (Cambodia)
- MAFF	Ministry of Agriculture, Forestry and Fisheries (Cambodia)
- MBHIP	Management Board of the Yali Hydropower Project (Vietnam)
- MC	Mekong Committee
- MC	Mekong Committee
- MIME	Ministry of Industry, Mines and Energy (Cambodia)
- MoE	Ministry of Environment (Cambodia)
- MOWRAM	Ministry of Water Resources and Meteorology (Cambodia)
- MPWT	Ministry of Public Works and Transport (Cambodia)
- MRC	Mekong River Commission
- MRD	Ministry of Rural Development (Cambodia)
- NGO	Non-governmental Organization
- NTFP	Non-Timber Forest Products Non-Governmental Organization (Ratanakiri Province, Cambodia)
- PECC 1	Power Engineering Consultant Company 1 (Vietnam)
- RCC	River Coalition in Cambodia
- RGC	Royal Government of Cambodia
- SIDA	Swedish International Development Agency

- SPN Se San Protection Network
- SWG Se San Working Group
- TERRA Towards Ecological Recovery and Regional Alliance
- TOR Term of Reference
- UNDP United Nations Development Program
- VNMC Vietnam National Mekong Committee
- WCD World Commission on Dams
- WUP Water Utilization Program (Mekong River Commission)

ZUSAMMENFASSUNG

1. Einführung

Diese Studie konzentrierte sich auf die Nutzung und Bewirtschaftung der Wasserressourcen des Se San Flussbeckens. Das Becken wird flußaufwärts durch Vietnam und flußabwärts durch Kambodscha begrenzt. Der natürliche Reichtum dieses Flusses dient zwei gegensätzlichen Interessen der beteiligten Akteure. Auf der einen Seite sind die Wasserressourcen der Lebensnerv der Kommunen, die diesen Fluss seit Generationen für ihren Lebensunterhalt nutzen. Auf der anderen Seite wurde dieser Fluß für eine Reihe groß angelegter Wasserkraftbauprojekte ausgebeutet, wodurch die Existenzgrundlagen der örtlichen Gemeinschaften geschädigt wurden. In diesem Zusammenhang besteht die Herausforderung darin, eine gerechte Nutzung und Bewirtschaftung der Wasserressourcen zu Gunsten der beiden Parteien, den Gemeinden und der Damm-Entwickler, zu gewährleisten.

Diese Studie befasste sich mit dem empirischen Prozess aus einer Perspektive, die Planung als einen kontinuierlichen Prozess der Aktion und Intervention bei der Durchführung von Entwicklungsprojekten versteht. Aus dieser Perspektive zielte diese Studie darauf ab, den Einfluss der verschiedenen gesellschaftlichen Akteure auf die Planung für das Management des San Se Flussbeckens als Reaktion auf die Yali-Falls Damm-Auswirkung zu erforschen. Der Yali-Falls Staudamm, der von Electricity of Vietnam (EVN) im Jahr 1993 gebaut wurde, führte ab Mitte 1996 im stromabwärts gelegenen Kambodscha zu Auswirkungen. Die Reaktionen auf solche Auswirkungen von verschiedenen gesellschaftlichen Gruppen und Akteuren begann allerdings nach dem Hochwasserereignis während der Trockenzeit Ende Februar 2000, das durch das Ablassen von Wasser aus dem Yali-Falls Staudamm verursacht wurde. Es entstand ein Konflikt zwischen den stromab- und stromaufwärts gelegenen Gemeinden und den Bauherren des Staudamms.

Die Ziele dieser Studie sind wie folgt:

- Entwicklung eines Verständnisses des historischen Prozesses der Entwicklung der Wasserkraft im Se San Flussbecken;
- Ermittlung der wichtigsten Akteure, ihrer Rollen, Interessen, ihrer Machtverhältnisse und Strategien zur Beeinflussung des Entscheidungsprozesses im Bereich Wasserkraft-Entwicklung im Se San Flussbecken;
- Bereitstellung einer abschließenden Bemerkung zu den Auswirkungen, die sich aus Antworten als Mittelwert für das Se San Flussbecken Management ergeben.

2. Theoretische Überprüfung und analytischer Rahmen

Basierend auf dem Problem und dem oben beschriebenen Zweck wurde eine Reihe von theoretischen Debatten überprüft um aufzudecken, wie ein Planungsprozeß für das Flußbecken in der Praxis funktioniert. In diesem Kapitel werden Themen wie die Flußbeckenentwicklung, Konzepte des Flußbeckenmanagements, Konzepte der Entwicklung in Bezug auf Wasserkraft und Konzepte der Planung erörtert. Mit dieser Analyse als Grundlage wurde der Ansatz des *"actor-oriented approach to social interface"* als analytischer Rahmen angewendet. Im Folgenden wird der Fluß von theoretischen Konzepten und analytischem Rahmen erklärt.

Die Fragen zu der Entwicklung des Flußbeckens erstrecken sich vom Druck des Wassermangels zur Verschlechterung der Wasserqualität bei sinkendem Wasserstand aufgrund von einer überhöhten Entnahme und unsachgemäßer Nutzung der Wasserressourcen. Folglich führt dies tendenziell zu einer Verstärkung des Konfliktes zwischen den stromaufwärts und stromabwärts gelegenen Gemeinden. Eine für diese Studie relevante Frage hängt mit der Entwicklung der Wasserkraft zusammen, wobei ein Staudamm konstruiert wurde, um den Fluss zu blockieren, um Wasser für die Stromerzeugung zurückzuhalten, mit dem dann die Turbinen angetrieben werden. Durch den Betrieb des Damms ist der natürliche Lauf des Flusses manipuliert und in Raum und Zeit verändert, was wiederum zu einer Beeinträchtigung der Wasserqualität führt und damit Einfluss auf das Fluss-System nimmt. Da die Menschen Teil dieses Systems sind und in Abhängigkeit von ihm leben, sind sie auch betroffen. Die am stärksten durch den Damm betroffene Bevölkerungsgruppe, die in dieser Studie identifiziert wurde, sind die Gemeinden, die entlang des Flusses leben und deren Lebensunterhalt vom Fluss-System abhängt. Daher beinhalten die Auswirkungen nicht nur ökologische und soziale Aspekte, sondern auch wirtschaftliche und kulturelle.

Die Faktoren für die Förderung der Wasserkraft-Entwicklung, die in dieser Studie identifiziert wurden, betrafen den Begriff der Entwicklung. In dieser Studie versteht man unter dem Begriff "Entwicklung" den Wandel, Prozess und Fortschritt, welcher Wirtschaftswachstum, Lebensunterhalt, Selbstachtung und Freiheit für eine bestimmte Gesellschaft oder ein Land herbeiführt. Diese Studie fand heraus, dass die Befürworter der Wasserkraft-Entwicklung als einen integrierten Ansatz angesehen werden müssen, der alle zusammenhängenden Aspekte innerhalb des Systems wie die Umwelt, wirtschaftliches, soziales, kulturelles und geistiges Wohlbefinden der Menschen in den Entwicklungsprozess mit einbezieht.

In dieser Studie wurde der Begriff "Planung" als ein zyklischer kontinuierlicher Prozess verstanden, der eine endlose Zeitspanne ueberdeckt. Die Komponenten dieses Planungsprozesses sind die Planung, Durchführung und Überwachung. Die drei Komponenten sind in einem Zyklus miteinander verbunden oder bekannt als eine Feedback-Schleife. In der Planung wird der Plan entworfen, und es folgt die Umsetzung der geplanten Aktivitäten und Überwachung. Da die Implementierung einen großen Pool von Ressourcen und Menschen mit einbezieht und betrifft, produziert die Planung oft eine Vielzahl von Konflikten zwischen den Nutzern während der Ausführung von Entwicklungsaktivitäten. In diesem Zusammenhang wurde der Planungsprozess als ein politischer Prozess identifiziert, an dem viele betroffene gesellschaftliche Akteure beteiligt sind. Dieser politische Prozess wurde als die Prozesse definiert, welche in einem umstrittenen Interessenkonflikt zwischen den Nutzern vermitteln, seien es Dorfbewohner, Entwickler oder Entscheidungsträger.

Um diesen politischen Planungsprozess zu entschlüsseln, wurde ein *"actor-oriented approach"* angewandt, um die interaktiven Relationen an der Schnittstelle zwischen Entwicklungsagenturen und den betroffenen Gemeinden zu analysieren, und um die Ergebnisse der Bemühungen der Planung aufzudecken. In dieser Studie wurden für die Analyse drei theoretische Konzepte verwendet, die sich vom *"actor-oriented approach"* ableiten lassen, nämlich das Konzept *"agency, knowledge and power"*, das Konzept des *"social interface"* und das Konzept der *"arenas"*. Diese Studie hat die drei Konzepte als miteinander zusammenhängend identifiziert. Während das Konzept *"agency, knowledge and power"* auf die Notwendigkeit hinweist, soziale Akteure zu identifizieren, ihre soziale Beziehung und Struktur, Strategie, Interesse und Ressourcen und um Wissen und Macht zu enthüllen, wurde das Konzept des *"social interface"* identifiziert als die Bedeutung zu haben, Konfrontation und Konflikte zwischen den betroffenen gesellschaftlichen Akteuren mit verschiedenen Interessen, Ressourcen und Macht aufzudecken. Und schließlich wurde das Konzept der *"arenas"* als ein wichtiges Instrument identifiziert, um die *"social interface"* zu analysieren, weil es die Bedeutung der sozialen und räumlichen Lage der Konfrontation der verschiedenen gesellschaftlichen Akteure vermittelt.

Schließlich konzipiert diese Arbeit das Gebiet der Wasserkraft-Entwicklung als eine *"arena"*, in der eine Auseinandersetzung über Fragen, Ressourcen, Praktiken, Wissen und Werte stattfindet. Durch die Anerkennung von Entwicklungs-Interventionen als ein gesellschaftliches Ereignis, bei dem verschiedene gesellschaftliche Akteure mit verschiedenen Interessen im Planungsprozeß interagieren, analysierte diese Studie, wie sich dieser Wettbewerb bei drei verschiedenen *"arenas"* entfaltet, die in dieser Studie identifiziert wurden als die Einheit der Analyse, um die

Interessenkonflikte der verschiedenen beteiligten Akteure in der Wasserkraft-Entwicklungs-Intervention des Se San Flussbeckens zu studieren. Diese drei Stufen der Analyse waren lokale, nationale und internationale/globale "*arenas*". Basierend auf dem Fall der Auswirkungen des Yali-Falls Staudamms war die wichtigste Forschungsfrage "Wie reagieren die verschiedenen sozialen Akteure auf die Auswirkungen des Staudamms auf lokaler, nationaler und internationaler/globaler Ebene?" Die drei "*arenas*" wurden in drei verschiedenen Kapiteln diskutiert. Kapitel 4 konzentrierte sich auf die lokale arena, Kapitel 5 auf die nationale arena und Kapitel 6 auf internationale und globale arenas. Obwohl jede "*arena*" in verschiedenen Kapiteln diskutiert wurde, bedeutet es nicht, dass es keinen Zusammenhang und Wechselbeziehungen zwischen den "*arenas*" gibt; sie sind miteinander verknüpft und dynamisch.

3. Entwicklungsplanung für die Wasserressourcen im Unteren Mekongbecken: Eine empirische Untersuchung der Wasserkraftentwicklung im Se San Teileinzugsgebiet

Das Ziel dieses Kapitels ist, eine historische Perspektive auf die Mekong Planung und Zusammenarbeit zu geben, von der aus der Planungsprozess für die Wasserkraftentwicklung des Se San Flusses hervorgeht. In diesem Kapitel wird gezeigt, dass bei der Wasserkraftentwicklungsplanung des Se San Flusses eine Vielzahl von nationalen und internationalen Akteuren beteiligt war, wobei zahlreiche Studien und Untersuchungen über einen langen Zeitraum hinweg entstanden sind.

Von Anfang an wurde die Initiative der Wasserkraftentwicklung vom Mekong-Projekt, das 1947 von der Wirtschaftskommission für Asien und den Fernen Osten (ECAFA) der Vereinten Nationen gegründet wurde, beeinflusst. Dieses Mekong-Projekt stellte auch den Ausgangspunkt für die Zusammenarbeit der vier Länder des Unteren Mekong-Beckenbereichs (Kambodscha, Vietnam, Thailand, Laos) im Wasserressourcenmanagement des Mekong dar und resultierte schließlich in der Gründung des Mekong Komitees im Jahr 1957.

Das Mekong-Projekt und das Mekong-Komitee diente als Plattform sowohl für internationale Experten als auch für Experten aus den Anrainerstaaten, die sich trafen um zu diskutieren, Untersuchungen durchzuführen und Entwicklungschancen für das Untere Mekongbecken herauszustellen. Das Wasserkraftentwicklungsmodell wurde ursprünglich von internationalen Experten als die beste Option für eine Allzweckentwicklung angesehen, die auch dem Hochwasserschutz und der Bewässerung des Unteren Mekongbecken im Jahre 1951 dienen könnte. Die Befürwortung dieses Modells wurde durch internationale Experten der ECAFE im Jahre 1953 als durchführbar bestätigt. Ende 1950 empfahlen internationale Berater ausdrücklich

zur Wasserkraftentwicklung der Zuflüsse, da diese schmaler waren und weniger Investitionen erforderten. Der Se San Fluss wurde als einer der 34 Hauptzuflüsse mit Wasserkraftpotential identifiziert. Weitergehende Studien über den Se San Fluss wurden von Anfang bis Mitte der 60er Jahre durchgeführt und zeigten mehrere Wasserkraftmodelle im oberen Teil Vietnams auf, wobei der Yali-Falls Kleinstaudamm am vielversprechendsten war. Dieser Wasserkraftplan wurde im Jahre 1970 erneut untersucht und deckte den gesamten Verlauf des Se San Flusses ab. Es wurden zehn Projekte für Vietnam, vier Projekte für Kambodscha, sowie ein grenzübergreifendes Projekt geplant. Jedoch mußten alle Wasserkraftprojekte aufgrund des Bürgerkrieges in Vietnam und Kambodscha in der ersten Hälfte der 70er Jahre gestoppt werden. Während Kambodscha, geführt von dem Völkermord-Regime der Roten Khmer, seine Mitgliedschaft im Mekong Komitee Mitte der 70er Jahre beendete, bildeten die verbleibenden drei Mitgliedsstaaten im Jahre 1978 das Interim Mekong Komitee (IMC) um ihre Zusammenarbeit und Planung fortzusetzen. Das IMC spielte weiterhin für das Vorantreiben der Wasserkraftentwicklung der Mekongzuflüsse eine große Rolle. Der Yali-Falls Staudamm am Se San Fluss war der größte Damm für den Vietnam von Geberländern durch das IMC finanzielle Unterstützung erhielt um detaillierte Studien durchzuführen, u.a. eine Durchführbarkeitsstudie sowie eine Umweltverträglichkeitsprüfung, die jeweils von den Regierungen Schwedens und der Schweiz im Jahre 1984 und 1991 finanziert wurden.

Im Jahre 1991 ließ Kambodscha seine Mitgliedschaft wieder zu, jedoch wurde die Arbeit der Mekong Kooperation erst 1995 wiederaufgenommen. Diese neue Form der Zusammenarbeit bedeutete die Änderung des IMC zur Mekong River Commission (MRC) im April 1995. Mit der Neuerrichtung des MRC rückte die Unterstützung der Wasserkraftentwicklung immer mehr in den Hintergrund. Der Schwerpunkt der MRC wurde auf eine gemeinsame Entwicklung und den ökologischen Schutz gelegt. Nach zehn Jahren Tätigkeit des MRC wurde dieses aus den Reihen von Nichtregierungsorganisationen und Forschungsinstituten insofern kritisiert, als dass es ineffektiv in der Durchführung des 1995 verabschiedeten Mekong-Abkommens, vorallem im Bereich der grenzüberschreitenden Konfliktlösung, wäre. Die Analyse zeigt, dass das MRC Sekretariat, das sowohl den technischen als auch administrativen Teil des MRC einnimmt, machtlos ist um Druck auf Mitgliedsstaaten, die Projekte mit negativen Auswirkungen auf andere Staaten durchführen, auszuüben. Das MRC Sekretariat spielt bei Konfliktlösungen nur eine Moderatorenrolle, wobei die Entscheidung vollständig von den betroffenen Verhandlungsstaaten abhängt. Eine weiterführende Diskussion über die Rolle des MRC

Sekretariats in Bezug auf die Reaktion der Auswirkungen des Yali-Falls Staudamms wird in Kapitel 5 und 6 abgehandelt.

Abgesehen von der Darstellung der Entwicklung auf Beckenebene, diskutiert dieses Kapitel darüberhinaus auch politische Strategien in Vietnam um zu verstehen, wie Vietnam den Se San Fluss in seine Wasserkraftentwicklungsagenda untergebracht hat. Das Ergebnis zeigt, dass aufgrund des wirtschaftlichen Wohlstandes, der in den späten 80er Jahren zu Energieengpässen in Vietnam führte, die vietnamesische Regierung ihre Entscheidung bezüglich des geplanten Baus des Yali-Falls Staudamms von 48 MW im Jahre 1984 auf 700 MW im Jahre 1991 geändert hat. Zudem wurden fünf weitere Dämme mit einer Gesamtkapazität von mehr als 1000 MW geplant und deren Bau im Se San Becken in Vietnam vorangetrieben.

4. Lokale Arena: den Kampf kämpfen, Erfolg vs. Herausforderung

Dieses Kapitel analysiert eine Reihe von Situationen in denen Auseinandersetzungen über den Einfluss von Wasserkraftwerken stattfinden sowie Interventionsmaßnahmen und deren Auswirkungen auf der lokalen Ebene. Dabei werden wichtige Punkte wie Auswirkungen des Staudamms auf verschiedene soziale Akteure, lokale Bewältigungsstrategien dieser Auswirkungen, Antworten auf lokaler Ebene, das Nützen von sozialen Netzwerken sowie Strategien, Ergebnisse und Herausforderungen bei der Erstellung der Netzwerke diskutiert.

Der erste Punkt diskutiert die Ansichten der betroffenen lokalen Akteure u.a. der River Bank Gemeinden, NGOs und der Regierungen Kambodschas sowie Vietnams. Die Analyse zeigt, dass die betroffenen Gemeinden und die NGOs auf der einen Seite sowie die Regierung Kambodschas auf der anderen Seite weiterhin unterschiedliche Ansichten haben. Die Regierung Vietnams liegt dabei irgendwo dazwischen. Die betroffenen Gemeinden und NGOs betonen die beträchtlichen Auswirkungen des Yali-Falls Staudamms auf die dörfliche Existenzgrundlage, während die vietnamesische Regierung dies durch unangemessene Studienergebnisse zu widerlegen versucht.

Der zweite Punkt untersucht inwieweit die betroffenen Gemeinden mit den sich wandelnden Bedingungen im Fluss-System umgehen können. Die Analyse ergibt, dass die betroffenen Gemeinden entsprechend ihrer Kultur, Mittel und Ressourcen unterschiedliche Bewältigungsstrategien aufweisen. Beispielsweise legen einige Gemeinden ihre Angeln nicht mehr nachts aus, da sie fürchten bisher unbekannte Strömungen könnten diese zerstören. Einige haben sich Arbeit außerhalb ihres Distriktes gesucht, um die Verluste im Fischfang ausgleichen zu können. Wieder andere sind gleich in höhere Lagen umgezogen aus Angst vor einem Dammbbruch und Überflutung. Obwohl die genannten Strategien die Auswirkungen auf die

Lebensweise in den betroffenen Gemeinden verringern können, können sie auch neue Bedrohungen und Risiken hervorrufen, wie sie besonders in der Umsiedlung in Berglagen zu finden sind. Diese Umsiedlung führt zunächst zu Wasserknappheit in der Trockenzeit. Zweitens ist es aufgrund der fehlenden Infrastruktur schwieriger, Schulen und Krankenhäuser zu erreichen. Damit würden sich zwangsläufig höhere Analphabetenraten und ein erhöhtes Risiko bei Krankheiten ergeben. Um diese negativen Auswirkungen abzuwenden, wären hier Interventionsmaßnahmen notwendig um eine Grundversorgung der betroffenen Gemeinden mit Häusern, Nahrungsmitteln, Wasser, Bildungsmöglichkeiten, Krankenhäusern und Straßen sicherzustellen.

Der dritte Punkt erklärt Reaktionen auf der lokalen Ebene. Die Analyse deckt auf, dass einzelne Personen von lokalen und internationalen NGOs in der Ratankiri-Provinz eine wichtige Rolle bei der Untersuchung des durch den Yali-Falls Staudamm im Februar 2000 verursachten Hochwassers gespielt haben. Diese haben nämlich bewusst staatliche Behörden aus der Provinz in die Untersuchung miteinbezogen. Im Rahmen des dabei entstandenen Untersuchungsberichts konnten die betroffenen Gemeinden nationale und internationale Entwicklungshilfe-Organisationen erreichen, damit diese Druck auf diejenigen ausüben, die den Staudamm gebaut haben. Dadurch sollen Kompensationszahlungen für bereits entstandene Schäden sowie ein sofortiger Abbruch der weiteren Baumaßnahmen erreicht werden. Ein wichtiger Erfolg des Berichts war, dass sich einzelne Personen aus lokalen und internationalen NGOs zusammengeschlossen haben und das Se San Community Network gegründet haben. Ziel dieses Zusammenschlusses ist die Durchsetzung der Forderung nach einer Reform der bisherigen Politik um ein besseres Management von Flussgebieten zu erreichen, welches die Konsequenzen von grenzüberschreitenden Wasserkraftwerken einbezieht. Mit finanzieller Unterstützung von Oxfam Amerika konnte sich das „Se San Protection Network“ in der Ratankiri Provinz Ende 2001 etablieren.

Im vierten, fünften und sechsten Punkt dieses Kapitels werden Bildung, Strategien, Ergebnisse und Herausforderungen dieses lokalen Netzwerkes diskutiert. Die Analyse zeigt, dass sich das lokale Netzwerk gut etabliert und in seiner Bedeutung durch die Unterstützung des SPN Sekretariats zugenommen hat. Kenntnisse betroffener Gemeinden über die Entwicklung von Wasserkraftwerken und deren Auswirkungen konnten durch die Informationsweitergabe des Netzwerkes deutlich verbessert werden. Gegenwärtig sind über 500 Personen aus betroffenen Gemeinden Mitglied im Netzwerk und fordern von der Regierung Kambodschas in Verhandlungen mit der vietnamesischen Regierung zu treten und Forderungen nach Kompensation und Wiederherstellung der Existenzgrundlage durchzusetzen. Dies zeigt, dass die

betroffenen Gemeinden die Fürsprache durch das Netzwerk unterstützen. Um eine erfolgreiche Fürsprache zu ermöglichen, hilft das SPN Sekretariat Kontakte zu lokaler, nationaler wie auch internationaler Ebene zu ermöglichen. Der Aufgabenbereich des lokalen Netzwerks konzentriert sich auf die Verbreitung von Informationen über Damm-Baumaßnahmen und auf die Dokumentation der dadurch auftretenden Auswirkungen. Das SPN Sekretariat unterstützt dies indem Kapazitäten für Forschungsaktivitäten, Dokumentation und Verbreitung von Berichten bereitgestellt werden, damit die Berichte interessierte nationale und internationale (Entwicklungshilfe-) Agenturen erreichen können. Dies ist eine strategische Vorgehensweise, um Kompensation und Wiederherstellung der Existenzgrundlage in den betroffenen Gemeinden durch die vietnamesische Regierung zu erreichen.

Durch die Aktivitäten des SPN Sekretariats wie beispielsweise die Unterstützung von Forschung, Diskussionen und Workshops in den Gemeinden, sind die betroffenen lokalen Gemeinden in der Lage über die Auswirkungen des Dammbaus auf ihre lokale Existenzgrundlage auf nationaler und internationaler Ebene zu sprechen und entsprechende Gegenmaßnahmen zu fordern. Zu diesem Zweck wurde eine Koalition aus verschiedenen lokalen und internationalen NGOs in Kambodscha sowie außerhalb gegründet, um die politischen Reformen so zu beeinflussen, dass soziale Gerechtigkeit für die betroffenen Gemeinden erreicht werden kann. Durch die Bemühungen des Netzwerks hat die Regierung Vietnams die negativen Auswirkungen des Yali-Falls Staudamms stromabwärts in Kambodscha anerkannt und bereits einige Maßnahmen erlassen, um die Auswirkungen auf die lokalen Gemeinden zu verringern. Dazu wurde z.B. das „Se San 4A Reservoir“ in der Nähe der kambodschanischen Grenze gebaut, um den Wasserdurchfluss konstant zu halten sowie eine Einschätzung der Auswirkungen auf den kambodschanischen Teil des Se San Flusses durchgeführt um die sozialen Folgen verringern zu können.

Trotz dieser Erfolge bleiben weitere Herausforderungen und Einschränkungen, da z.B. die Kompensation und Wiederherstellung der Existenzgrundlage der lokalen Gemeinden noch nicht stattgefunden hat. Obwohl die betroffenen Gemeinden im Bereich der Fürsprache von den NGOs stark unterstützt wurden, gibt es bei den meisten Gemeinden immer noch Probleme mit Wasserqualität und Nahrungsmittelknappheit durch eingeschränkte Dienstleistungen der NGOs. Da diese Probleme bestehen, verringert sich die Teilnahme der betroffenen Gemeinden an den Fürspracheaktivitäten.

Einige der betroffenen Gemeinden fühlen sich vom lokalen Netzwerk nicht gut vertreten, da sie immer noch keine spürbare Kompensation von Vietnam erhalten haben und sie weiterhin unter

den sich verschlechternden Bedingungen im Fluss-System leben müssen. Daher stellt sich hier die Aufgabe, die Lebensbedingungen und Existenzgrundlage der lokalen Gemeinden zu fördern und weiterhin die Fürspracheaktivitäten aufrecht zu erhalten, um den politischen Reformprozess beeinflussen zu können.

5. National Arena: Erfolg oder Misserfolg der Intervention?

Dieses Kapitel erklärt, wie nationale Regierungsbehörden auf die Auswirkungen des Damms reagiert haben, welche Strategien ihre Interessen geformt haben und was das Ergebnis ihrer Reaktionen war. In dieser Analyse hat sich herausgestellt, dass das „Royal Government of Cambodia“ bei der Wasserressourcenplanung eine Hauptrolle spielt. Die Regierung ist in die nationale Regierung und die sub-nationale Regierung unterteilt. Die nationale Regierung bildet die höchste Ebene, bestehend aus dem Ministerat, dem der Premierminister vorsteht und den Ministerien. Die Sub-nationale Regierungsebene beinhaltet Provinzen, Distrikte, Kommunen und Dörfer. Der Fall des Se San Flusses ist eine internationale Angelegenheit; daher sind diesbezügliche Entscheidungen dem höchsten Regierungslevel vorbehalten.

Auf nationaler Ebene wurden zwei wichtige Akteure identifiziert, welche die Hauptverantwortung in der Se San Angelegenheit tragen: Das Ministerium für Wasserressourcen und Meteorologie (MOWRAM) und das kambodschanische Nationale Mekong Komitee (CNMC). MOWRAM und CNMC unterliegen beide direkt dem Ministerrat. Während die Aufgabe von MOWRAM das nationale Management von Wasserressourcen ist, spielt CNMC eine größere Rolle bei der internationalen Kooperation hinsichtlich Wasserressourcen im Mekongbecken. Die MRC, welche aus dem 1995 Mekong Abkommen hervorging, ist die Gerichtsbarkeit, bei der CNMC Beschwerden an Mitgliedsstaaten einbringen kann, wenn Entwicklungsaktivitäten von diesen Staaten Wassernutzung beeinträchtigt.

Während der Überflutungen im Februar 2000, brachte das CNMC durch das MRC Sekretariat eine Beschwerde an das Vietnam Nationale Mekong Komitee (VNMC), hinsichtlich einer Frage zu Wasserfreisetzung des Yali-Falls Staudamms. In diesem Fall war das MRC Sekretariat ein wichtiger Vermittler zwischen Kambodia und Vietnam. Die Untersuchungskommission des MRC Sekretariats in den betroffenen Gegenden in der Ratanakiri Provinz, die die Ursachen der Überflutungen im Februar 2000 untersuchte, brachte eine starke Unterstützung des CNMC. In der Folge wurde das kambodschanisch-vietnamesische Komitee zum Management des Se San Flusses etabliert und fungierte als Forum für Diskussionen und Verhandlungen zwischen beiden Parteien. Durch dieses Forum war das kambodschanische Komitee in der Lage mit seinem

Gegenpart über die Aufsetzung eines Informationssystems zu Wasserfreigabewarnungen, über die Durchführung von Studien zur Wasserqualität und Ausführung von Studien zur Folgenabschätzung zu verhandeln. Neben der Durchführung von Meetings, assistierte das MRC Sekretariat MOWRAM beim Aufstellen einer Station zum Wasserstands-Monitoring des Se San Flusses in Kambodscha im Jahr 2000, leistete technische Unterstützung bei der Kommentierung der Terms of Reference für die Studie zur Folgenabschätzung im Jahr 2001 und führte eine Bewertung der Wasserqualität im Jahr 2004 durch.

Obwohl viel umgesetzt wurde, waren die Ergebnisse der Intervention nicht sehr erfolgreich. Die Analyse zeigte, dass die Informationssysteme zur Wasserfreisetzungswarnung nicht vollständig implementiert waren und keine geeigneten Kommunikationseinrichtungen auf Provinz und Lokalebene vorhanden waren. Die Bewertung der Wasserqualität durch das MRC Sekretariat war ebenfalls nicht erfolgreich, da die Genauigkeit der Beprobung eingeschränkt war durch nur einmalige Beprobung pro Monat während der Trockenzeit und einmalige Beprobung alle zwei Monate während der Regenzeit. Hinsichtlich der Kompensationen: Der Erfolg der Kompensationsforderungen von betroffenen Gemeinden ist unwahrscheinlich, da kein Aktionsplan für weitere Verhandlungen zwischen Kambodscha und dem vietnamesischen Komitee zum Management des Se San Flusses aufgesetzt wurde.

Das Fazit dieses Kapitels ist, dass der Se San Angelegenheit nicht viel Beachtung oder Priorität bei der zentralen Regierung eingeräumt wurde. Die Analyse zeigte, dass das Cambodia Standing Committee, welches damit beauftragt ist, mit dem vietnamesischen Komitee zu verhandeln, durchgängig seit 2004 kein Budget zur Verfügung hatte, um Treffen mit dem vietnamesischen Komitee zu organisieren. Das vierte Treffen zwischen den beiden Komitees im Jahre 2008 war vollständig von Vietnam organisiert. Darüberhinaus zeigte die Analyse auch einige Aspekte hinsichtlich des Einflusses von Vietnam über Kambodscha. In der Ratanakiri Provinz hat sich eine starke politische und ökonomische Verbindung zwischen den benachbarten Provinzen etabliert. Die Obrigkeiten der vietnamesischen Grenzprovinzen haben einen starken Einfluss auf Ratanakiri, da sie finanzielle Unterstützung beim Bau von Schulen, Straßen und Wohnraum geben. Was die politische Struktur von Kambodscha betrifft, sind diese politischen und ökonomischen Verbindungen zwischen den beiden Provinzen durch bilaterale Übereinkommen zwischen Kambodscha und Vietnam festgelegt. Dieses bilaterale Abkommen wurde auf höchster Ebene von den Innenministerien in Kambodscha und Vietnam festgelegt. Jede Entscheidung, die von der Provinzobrigkeit in Ratanakiri getroffen wird, muss vom Innenministerium abgesegnet werden. Dies ist insbesondere wichtig in Bezug auf Se San Angelegenheiten, da diese als

internationale Angelegenheiten durch die höchsten Regierungsebene entschieden werden. Dies gilt auch für das kambodschanische Innenministerium. Gemäß der politischen Struktur in Kambodscha ist das Innenministerium verantwortlich gegenüber dem Ministerrat, der dem Premierminister untersteht. Jede Entscheidung, die vom Minister getroffen wird, muss vom Premierminister abgestimmt werden. Wie beschrieben sind Angelegenheiten, die den Se San Fluss betreffen, internationale Angelegenheiten und Zustimmung zu Entscheidungen auf höchster Ebene entscheidend. Die Aussage des Provinzgouverneurs von Ratanakiri, dass Kompensation durch die kambodschanische Regierung nicht notwendig ist, spiegelt die Entscheidung der zentralen Regierung wieder. Solche Entscheidungen waren ein Zugeständnis an die vietnamesische Regierung, möglicherweise kamen sie zustande durch die enge politische Verbindung zwischen Premierminister Hun Sen und der vietnamesischen Führung, welche bei der Befreiung Kambodschas vom Khmer Rouge Regime im Jahre 1979 half.

6. Die Internationale und Globale Arena: Mehr Proteste, Mehr Dämme

Dieses Kapitel behandelt vier unterschiedliche Fragen bezüglich der Resonanzen verschiedener Akteure auf globaler und internationaler Ebene. Das Kapitel untersuchte den Protest gegen den Bau von Dämmen, die Aktivitäten der Asian Development Bank (ADB), die Machtverhältnisse im Sekretariat der Mekong River Commission (MRC) im Umgang mit der Se San Thematik und die Verhandlungen über den Dammbau am Se San Fluss in Kambodscha.

Das erste Unterkapitel befasst sich mit den Beziehungen zwischen zwei bekannten internationalen NGOs, Probe International sowie International Rivers, und der Weltbank. Die Analyse ergab, dass das mangelnde Engagement der Weltbank im Hinblick auf die Auswirkungen des Staudamms auf das Interesse der Bank an der Förderung von Energieprojekten in Vietnam zurückzuführen ist. Infolgedessen hielten beide Seiten an ihren Argumenten und Perspektiven fest. Beispielsweise waren Probe International und International Rivers der Ansicht, dass die Elektrizität, welche vom Se San Staudamm produziert wird, nicht ohne Weltbank-finanzierte Fernleitungen transportiert werden kann. Im Gegensatz dazu verteidigte die Weltbank ihre Position, dass sie nicht am Bau des Staudamms beteiligt war. Die Diskussion zeigte, dass das Argument der Weltbank eher ‚Electricity of Vietnam‘ (EVN) begünstigte als die betroffenen kambodschanischen Gemeinden. Die Analyse ergab, dass die Weltbankpolitik im vietnamesischen Energiesektor stark im größeren Zusammenhang mit der Weltbankunterstützung für Vietnam seit Anfang der neunziger Jahre zu sehen ist.

Das zweite Unterkapitel behandelt die Reaktionen der ADB. Die Analyse ergab, dass Worley Ltd. – die Firma, die von der ADB unter Vertrag genommen wurde, um den Se San 3 Staudamm (dabei handelt es sich um den zweiten Staudamm, etwa 15 km hinter dem Yali-Falls Staudamm) zu evaluieren – das Anliegen der lokalen Bevölkerung bezüglich der Auswirkungen des Yali-Falls Staudamms unterstützte. Der Befund des Unternehmens wurde jedoch durch bestimmte Strategien und Taktiken der EVN behindert, wie z.B. das Zurückweisen der Untersuchungsergebnisse und die Zurückhaltung der Veröffentlichung des Berichts. Darüber hinaus beantragte EVN keine weiteren ADB-Gelder und begann, nach anderen Finanzierungsquellen zu suchen. Im Fall des Se San 3 Staudammes wollte EVN die Angelegenheit des Yali-Falls Staudamms kleinhalten, um den Bau des Se San 3 Staudamms nicht zu verzögern; denn andernfalls wäre mit langwierigen Studien und Prüfungen zu rechnen gewesen, bevor die ADB weitere Gelder freigegeben hätte. Die Strategie von EVN bestand daher darin, nach anderen Finanzierungsquellen zu suchen und mit dem Bau fortzufahren. Während der Bau des Se San 3 Staudamms unproblematisch verlief, kümmerte sich EVN nicht um die Kompensationsmaßnahmen, die vom Worley-Bericht eingefordert wurden. Dies führte schließlich dazu, dass das Thema auf internationaler Ebene keine Beachtung mehr fand.

Das dritte Unterkapitel untersuchte die Rolle des MRC Sekretariats und der Machtverhältnisse im Hinblick auf den Umgang mit Konflikten. Die Analyse zeigte, dass die Verhandlungen zwischen Vietnam und Kambodscha aufgrund der begrenzten Funktionalität des MRC Sekretariats im Bezug auf Konfliktlösungsmechanismen auf bilateraler Ebene verlief. Dies führte dazu, dass EVN einen gewissen Spielraum hatte, um die Agenda in ihrem Sinne zu beeinflussen und zu steuern; beispielsweise konnte eine Diskussion um Entschädigungen verhindert werden. Aufgrund der mangelnden Funktionalität des MRC Sekretariats konnte EVN die Debatte von der internationalen auf die für sie günstigere bilaterale Ebene verlagern.

Das vierte Unterkapitel befasst sich mit den Verhandlungen über den Dammbau auf kambodschanischer Seite zwischen EVN und der kambodschanischen Regierung. Die Analyse ergab, dass EVN versuchte, Kambodscha bei der Lösung des Yali-Falls Problems entgegenzukommen, indem beispielsweise Meldungssysteme zur Abgabe von Wasser aus dem Damm installiert wurden, die Entwicklung hydrodynamischer Modelle sowie Umweltverträglichkeitsprüfungen finanziert wurden und ein Se San 4a Re-Regulierungsdamm gebaut wurde. Der Se San 4a Staudamm wurde an der Grenze zwischen Kambodscha und Vietnam errichtet um zur Stabilisierung des Wasserabflusses beizutragen. Im Laufe der Sitzungen des ‚Joint Committee for Management of Se San River‘ führte EVN weiterhin

Verhandlungen mit ihrem kambodschanischen Counterpart, um ihren ambitionierten Plan voranzutreiben, weitere Wasserkraftwerke auf der kambodschanischen Seite des Se San Flusses zu bauen. Da die Entscheidungsgewalt über eine Weiterentwicklung von Wasserkraft auf höchster Ebene angesiedelt ist, betrachtete EVN die Beziehungen zwischen den Staatsoberhäuptern als essenziell. So wurde zum Beispiel eine Reihe von bilateralen Abkommen über den Ausbau von Wasserkraft am Se San Fluss unterzeichnet. Diese Kooperation könnte das Resultat einer engen politischen Verbindung zwischen Vietnam und Kambodscha sein, welche auf der Befreiung der Hun Sen Regierung von den Khmer Rouge Regime durch die vietnamesische Regierung im Jahr 1979 beruht.

Zusammenfassend ergab das vorliegende Kapitel, dass die EVN trotz einer Vielzahl an Aktivitäten und Reaktionen von internationaler Ebene die Kontrolle über den Prozess übernehmen konnte. So konnten bestimmte Angelegenheiten von der internationalen Ebene auf die bilaterale Ebene verlagert werden, was den Prozess vereinfachte und die Diskussion darüber nur innerhalb einer bestimmten Akteursgruppe zuließ. Diese Strategie zielte darauf ab, das Risiko zu minimieren und die Wahrscheinlichkeit zu erhöhen, die Kontrolle über die Verhandlungen zu übernehmen. So sollten nicht nur Entschädigungszahlungen verhindert, sondern auch der zukünftige Bau von Staudämmen in Kambodscha – mit dem Ziel wirtschaftlicher Profite – ermöglicht werden.

7. Fazit

Diese Arbeit befasst sich mit der Frage wie verschiedene Akteure mit den Auswirkungen eines Staudamms im Se San Flusseinzugsgebiet umgehen und zeigt damit Planungsprozesse im Rahmen des Managements eines Flusseinzugsgebietes in der Praxis auf. Diese Arbeit basiert dabei auf dem theoretischen Konzept eines *"actor-oriented approach"*, welches zur Analyse eines Konflikts zwischen verschiedenen, in den Planungsprozess eingebundenen Akteuren, angewandt wird. Die Studie umschließt drei Konfliktebenen: lokale, nationale und internationale und globale Ebene. Im Rahmen der Analyse wurde der Begriff "Arena" verwendet um die verschiedenen Konfliktebenen zu benennen. Dieser Begriff spiegelt die soziale und räumliche Ebene wieder, auf der die verschiedenen Akteure miteinander interagieren, soziale Beziehungen knüpfen sowie Strategien anwenden um ihre Interessen und Ziele zu verfolgen.

In der lokalen Arena konnten betroffene Gemeinden nicht wirklich erfolgreich ihre Rechte durchsetzen um ihre Verluste zu kompensieren und die Auswirkungen auf ihre Existenzgrundlage durch den Eigentümer des Staudamms zu verringern. Weiterhin zeigt diese

Arbeit, dass betroffene Gemeinden zwar deutliche Unterstützung von lokalen und internationalen NGOs erhalten haben, aber die am meisten betroffenen Gemeinden trotzdem immer noch Probleme durch schlechtere Wasserqualität und Nahrungsmittelknappheit und verringerte Dienstleistungen. Da diese Probleme weiterhin bestehen, verringert sich die Bereitschaft zur Teilnahme an den Protestaktivitäten.

In der nationalen Arena hat die Studie aufgezeigt, dass die kambodschanische Regierung sich mit der vietnamesischen Regierung nicht darauf einigen konnte, den Forderungen der betroffenen Gemeinden nach Kompensation der entstandenen Schäden und Verringerung der Auswirkungen nachzugeben. Dafür wurden zwei Gründe gefunden. Zum einen hat die kambodschanische Regierung selbst ein Interesse am Bau eines Staudamms auf ihrer Seite des Se San Flusses und EVN mit den Baumaßnahmen betraut. Zum anderen sind der kambodschanische und der vietnamesische Regierungsführer eng verbunden, da der kambodschanische Regierungsführer dem vietnamesischen Regierungsführer bei der Befreiung aus der Unterdrückung durch die Khmer Rouge 1979 geholfen hat.

In der internationalen und globalen Arena fand diese Studie heraus, dass EVN mehrere Strategien angewandt hat um Kosten zu sparen, u.a. hat es die Debatte um die Auswirkungen des Yali-Falls Staudamms vom internationalen Fokus auf eine bilaterale Ebene gelenkt, die eine einfachere Handhabung des Falls erlaubt. Dadurch konnte das Problem von einem größeren in einen kleineren Rahmen gedrängt werden. In der internationalen Arena entdeckte der Autor, dass das MRC Sekretariat nicht zur Konfliktlösung beitragen konnte, da es kein Mandat hatte um tatsächlich Handeln zu können. Ein solches Mandat muss erst von den Regierungen vergeben werden. Daher hat sich das MRC Sekretariat eher um die Belange der Regierung gekümmert als die von der Regierung als weniger wichtig eingestuft betroffenen Gemeinden.

Insgesamt hat der Planungsprozess im Se San Flusseinzugsgebiet in erster Linie den Interessen der Errichter des Staudamms sowie der Entwicklungsziele einzelner Länder gedient anstatt die Interessen der betroffenen Gemeinden miteinzubeziehen, deren Existenzgrundlage von dem Funktionieren des Fluss-Systems abhängen. Um ihre Interessen und Ziele durchzusetzen, haben mächtige Akteure undurchsichtige und vielfältige Strategien angewandt, um den Forderungen der betroffenen Gemeinden sowie NGOs auszuweichen.

Daher sollten Organisationen, die zur Konfliktlösung in Flusseinzugsgebieten dienen, in Zukunft Mandate besitzen, die es erlauben Regeln und Vorschriften durchzusetzen, um die lokalen Gemeinden in ihren Forderungen unterstützen zu können.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This study focuses on how various social actors influence the planning process for Se San River Basin's management in response to the effect of Vietnamese Yali-Falls dam on Cambodian local communities' livelihoods. In this study, I examine why responses employed by dam development agencies produce a particular outcome. I attempt to demonstrate their strategies and cultural means in taking control over negotiation process to win the battle for expanding hydropower exploitation in Se San River for maximum economic gain. The organizing responses by local communities and their distant supporters are constrained and resisted by politics, resources and strategies of dam promoting agencies. The objectives of this study are as follows:

- To develop an understanding of historical process of hydropower development in Se San River Basin;
- To identify the major actors, their roles, interests, power relations and strategies in influencing decision-making process in hydropower development sector in Se San River Basin;
- To provide a concluding remark on the impact resulting from responses as a mean for Se San River Basin management.

1.2 Background to the study

The Se San River is one of the largest tributaries of the Mekong River Basin and is well-known for hydropower development. The total capacity of energy that can be generated from this river amounts to 2,586 MW (PECC 1, 2006). Six hydropower projects with combined capacity of 1,768 MW are in Vietnam while five with combined capacity of 818 MW are in Cambodia (ibid.).

The attempt at hydropower development in the Se San River dates back to the time when the Mekong Committee (MC) was established in 1957. The most promising hydropower development project which was identified by the MC, in 1961, was the site at Yali-Falls located in the upper part of the Se San River in Vietnam. At that time the MC saw hydropower development as the cornerstone for improving the local community's livelihoods through the provision of electricity and the expansion of irrigation system. For short term development the MC suggested a small-scale hydropower project which intended to fulfill the local need

(SwedPower, 1986). However, the MC also envisioned a large-scale hydropower project at the Yali-Falls if the future energy demand were to increase in the long run (ibid.).

Because of the Vietnamese war in the early 1970s the development of the Yali-Falls project was not possible. Reassessment for the construction of the Yali-Falls was the main focus in the 1980s particularly when the Vietnamese government began economic reform in 1986. By early 1990s hydropower construction was given high priority in Vietnamese development agenda to cope with the deficiency of electricity demand which resulted from the growth of industrial sector in the Southern Region of Vietnam (Gracen and Palettu, 2007 in Lebel et al., 2007; Wyatt and Baird, 2007). The Yali-Falls dam was then reassessed in the early 1990s taking into account the maximum capacity that the site could offer for electricity generation. The Interim Mekong Committee (IMC), successor of the MC from 1978 to 1995, contributed to the assessment entitled “Environmental and Financing Studies on the Yali-Falls Hydropower Project”. The assessment was carried out from September 1991 to October 1992 and the report was published in May 1993. The construction of the Yali-Falls dam was started in November 1993. As laid out in the 1993 Environmental Impact Assessment (EIA) report, the intended capacity of the dam was 700 MW (Electrowatt, 1993). However, the actual capacity was slightly increased to 720 MW after the dam was put into full operation in 2001.

During the process of Yali-Falls dam construction, there were widespread reports about the dam’s consequence on local community living along the Se San River in Cambodia in early 2000. Local news such as Phnom Penh Post, Cambodia Daily and Raksmei Kampuchea reported about flash floods released from the Yali-Falls dam that caused severe damage to properties and claimed lives of local communities living along the Se San River in Ratanakiri province at the end of February 2000. Responding to the news, Cambodia National Mekong Committee (CNMC) immediately lodged complains to Vietnam National Mekong Committee (VNMC) via Mekong River Commission (MRC) Secretariat, successor of IMC from 1995, in early March 2000. Responses by CNMC led to the establishment of Joint Committee for Management of Se San River, in 2000, representing Cambodia and Vietnam to discuss and find solutions, with MRC Secretariat as a facilitator.

At local level, various responses have been organized by individuals of local Non-Governmental Organizations (NGOs) and provincial departments through the formation of Se San Working Group (Hirsch and Wyatt, 2004). At national and international levels, NGOs from Phnom Penh such as NGO Forum on Cambodia, Centre d’Etude et de Développement Agricole Cambodgien

(CEDAC)¹, and Oxfam America joined the Se San Working Group to discuss and document impacts as a way forward to calling Vietnam government and dam associate funding agencies to take responsibility over the damage and loss of lives (ibid.). The most influential report produced under the initiative of this working group was entitled “A Study of the Downstream Impacts of the Yali-Falls Dam in the Se San River Basin in Ratanakiri Province, Northeast Cambodia” conducted by Ratanakiri Provincial Fisheries Office in close cooperation with the Non-Timber Forest Products (NTFP), a local NGO supported by Oxfam America, in Cambodia.

Although the study was conducted in 2000 the report strongly argued that the construction of the Yali-Falls dam caused untold flash floods and water level fluctuation since mid 1996 which harmed ecological, social and economic aspects on the downstream part of Cambodia (Fisheries Office, 2000). This report estimated that 20,000 people living in Ratanakiri province had been affected by the changes of river flow caused by dam construction. The negative impacts reported were reduction of fisheries, disappearance of riverbank plants, inundated agricultural land, bank erosion and the loss of life and property due to unforeseen floods.

As a way forward, Oxfam America funded the establishment of Se San Protection Network (SPN) project that was affiliated with the NTFP office in Ratanakiri province at the end of 2001. The ultimate goal of SPN was to build a strong network at grass root level in order to establish dialogue and advocate Cambodia government to negotiate with Vietnam on mitigating dam impact and compensate past, present and future losses. Strategically, SPN establishes network with various development agencies and NGOs at national and international levels to form the strength of its advocacy work. By October 2005, SPN became a formal local NGO in Ratanakiri province under a new name of 3S Rivers Protection Network with the abbreviation of 3SPN to cover the other two rivers, Sre Pok and Se Kong, which join the Se San River near the Mekong mainstream in Stung Treng Province. After a long struggle of 3SPN as a response to the Yalli-Falls dam impact, few successes have emerged in the form of responses taken by Cambodia and Vietnam governments to establish notification system of water release from the Yali-Falls dam, conducting EIA study, and constructing Se San 4A re-regulatory dam at the border to mitigate extreme flow fluctuation. However, these successes are associated with many constraints and uncertainty, for instance, the implementation of notification system does not work properly due to poor communication facilities. The status of Se San 4A re-regulatory dam which was said to put into operation during the dry season of 2009 has become a puzzle to communities since water

¹ CEDAC is French acronym stand for Cambodian Center for Study and Development in Agriculture working in Cambodia.

level fluctuation still remains an issue. While the issue of the Yali-Falls dam has not yet been properly settled, Vietnam pushes forward to negotiate and build more dams on the Cambodia's stretch of Se San River.

This study aims to look at this empirical process from a planning perspective using the concept of planning as a process of action (Taylor, 1998: 66). In this context planning is not only meant as a set of plan that needs to be implemented but as an ongoing and continuous process of action and intervention, particularly when the implementation of “a plan or policy turns out to be ineffective or has undesirable effects which we have not foreseen (ibid: 67).” As far as the concept of “planning as a process of action” is concerned, river basin management requires an iterative process of action and intervention. The interventions are not simply the execution of a pre-specified plan of action with expected outcomes. They are always part of a chain of events located within the broader framework of the activities of the state and the action of different interest groups (Long and Van der Ploeg, 1989).

This research adopts an actor-oriented approach developed by Long (2001: 27) who defined intervention as “an ongoing transformational process that is constantly reshaped by its own internal organizational and political dynamic and by the specific conditions it encounters or itself creates, including the responses and strategies of local and regional groups who may struggle to define and defend their own social spaces, cultural boundaries and positions within the wider power field.”

One of the central concepts of actor-oriented approach is the notion of “social interface”. “Interfaces typically occur at points where conflicting lifeworlds or social fields intersect in social arenas in which interactions become oriented around problems of bridging, accommodating, segregating or contesting social, evaluative and cognitive standpoints” (Long, 2001: 65). Interface analysis concentrates upon examining “arenas”, which is a term important to the notion of development intervention, and entails understanding the struggles and power differentials taking place between actors involved (Long 2001: 72). Arenas are understood as “social and spatial locations where actors confront each other, mobilize social relations and other cultural means for the attainment of specific ends” (Long 2001:59). The image of interface and arenas can also be portrayed as a game in which the players (the social actors involved) compete with each other, all playing according to different rules. In this game the involved players possess different interests, different levels of power and different resources or capitals, which all enable them to influence the progress and the execution of the game (Olivier de Sardan 2005:185; Bierschenk 1988:146 in Dahlbom 2007:23). While the notion of arenas conjures up the picture of

a fight or struggle in particular local setting, the analysis also takes into consideration distant actors and social networks which shape the social processes, strategies and actions that take place in these localized settings (Long 2001: 59).

Based on the above context of hydropower dam development, impacts and responses, this research is aimed at discussing dam associated social interfaces by examining arenas at local, national, and international and global levels. Though the three arenas are being discussed in different chapters they are obviously linked to each other. These linkages will be revealed in the discussion within the chapters, but the different arenas also have their own dynamics. It is noticed that when analyzing social interfaces and arenas, a key word is ‘conflict’ or what Long & Long (1992) refer to as “encounters at the interface”, where more or less serious interest conflicts are being fought.

The three arenas which will be the focus of the discussion are local arena in chapter 4, national arena in chapter 5 and international and global arenas in chapter 6. In the first arena, I attempt to explore responses taken by local communities such as local coping capacity, knowledge and problems they encountered. More importantly, I discuss responses of local and international NGOs in forming SPN at local level and upscale this network to national, international and global levels to advocate that the rights of local community shall be respected. In the second arena, I discuss how the issue of Yali-Falls dam has been addressed by governmental agencies at national level. Although the focus is on national level, the analysis also touches upon responses by various individuals and agencies at provincial level and international level due to the complexity of inter-relation of responses of national government agencies across spatial locations. The last arena, I examine cases of responses of international and global actors with regards to the effects of Yali-Falls dam and other dam development on the Se San River. Negotiation for further dam building in Cambodia’s stretch of Se San River between Vietnam and Cambodia is also discussed in this level of arena.

Further discussion on the concept will be given in Chapter 2 (theoretical review and analytical framework) which seeks to explain how actor-oriented approach shall contribute to the analysis of this study.

1.3 An overview of the Se San River

1.3.1 Physical Geography

The Se San River is one of the largest tributaries of the Mekong River. It is a trans-boundary river originating in the Central Highlands of Vietnam and flows through two provinces in Vietnam

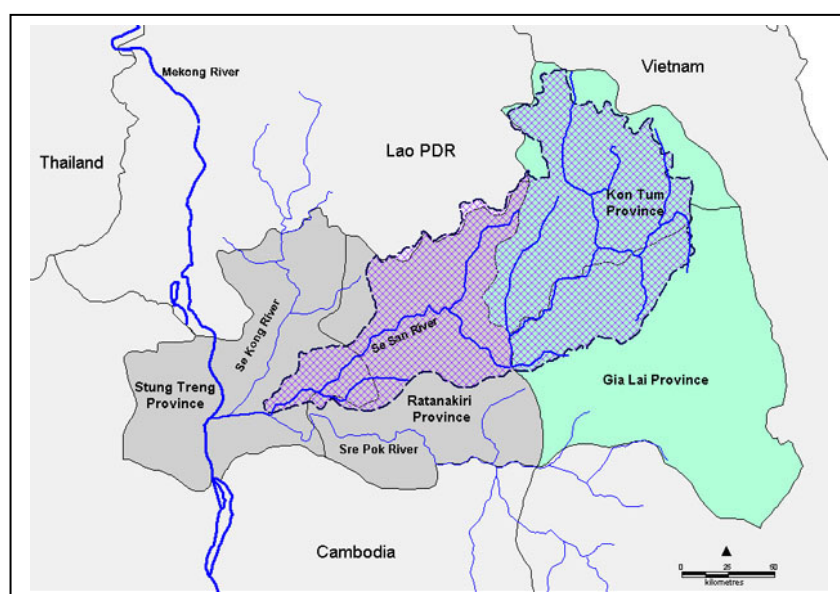
(Kon Tum and Gia Lai) and two provinces in north-east Cambodia (Ratanakiri and Stung Treng) before merging the mainstream of the Mekong (see figure 1.1). At the confluence, other two rivers, the Sre Pok and Se Kong, join the Se San River in Stung Treng province about ten kilometers before entering the Mekong River (ADB, 2006). The total length of the Se San River is about 462 km, of which the larger part of 252 km lies in Cambodia (SWECO et al., 2008). The catchment area of the Se San Basin is 19,150 km², of which almost 60 per cent is located in Vietnam (ADB, 2006). This means that the upper catchment in Vietnam provides a significant water discharge to the lower reach of the Se San River in Cambodia.

Table 1.1: Administrative divisions and Area of Se San Basin

Country	Province	Area (km ²)	Proportion (%)
Vietnam	Kon Tum	7,900	41.3
	Gia Lai	3,450	18
	Sub-total	11,350	59.3
Cambodia	Ratanakiri	6,900	36
	Stung Treng	900	4.7
	Sub-total	7,800	40.7
Total		19,150	100

Source: Adapted from Asian Development Bank, 2006

Figure: 1.1 Overview of the Se San River Basin



Source: Australian Mekong Resource Center²

² http://www.mekong.es.usyd.edu.au/case_studies/sesan/index.htm (access on 17 March 2009)

1.3.2 Elevation

The Se San River rises at an altitude of around 2,500 meters at the western slopes of the Annamite Cordillera, locally known as Truong Son mountain range (VNMC, 2003). The mountains are the main sources of water for the Se San River. The average elevation of the basin is about 600 meters above means sea level (MRC, 2008). The lowest parts are located in Cambodia with average elevation at 100 meters above means sea level (ibid.).

1.3.3 Climate and rainfall

The climate is monsoon type with a dry and a wet season. The wet season lasts from May to October in general, but can extend to November in some extreme years (MRC, 2008). Usually the minimum flow occurs in April and the maximum in October (SWECO, 2007). The average annual rainfall ranges from 1,870 mm in the lower region at Veunsai station in Cambodia to 2,183 mm at mountainous area at Kon Tum station in Vietnam (MRC, 2008). The month delivering the largest volume is August accounting for 20% of the annual rainfall. The extreme rainfall event normally occurs due to typhoons and could probably result in flash floods (ibid.).

Table1.2: Average monthly rainfall (mm) in some stations in Se San basin (1985-2000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Andong Meas	18.6	13.5	29.0	78.6	215.5	295.4	341.5	398.9	340.1	163.4	63.4	24.2	1982
Veunsai	13.1	14.2	29.4	67.9	204.3	280.4	328.8	396.9	330.5	131.9	54.2	18.4	1870
KonTum	28.3	18.5	30.8	89.0	214.1	273.8	359.5	393.1	355.4	248.7	117.2	54.8	2183
Yali	21.4	16.5	27.7	88.4	218.7	290.3	333.0	372.0	326.4	189.3	77.4	32.1	1993

Source: Mekong River Commission, 2008

1.3.4 Population, ethnicity and economic characteristics

The upper Se San in Vietnam

The upper part of the Se San basin constitutes two important provinces in Vietnam. These are Kon Tum and Gia Lai provinces. According to SWECO et al. (2008) the two provinces had a total population of about 710,000 in 1999. With the estimated annual population growth rate of 1.8%, the population in the upper Se San basin is expected to rise to 900,000 inhabitants in 2020 (ibid.).

The upper Se San basin is characterized by two distinct ethnicities, the autochthonous inhabitants (minority groups) of the area and the Kinh immigrant (Electrowatt, 1993). At the end of 1998 Kinh accounted for 53.2% while the remaining belonged to the minority groups (SWECO et al., 2008).

Kinh is the dominant ethnic group in Vietnam. According to Electrowatt (1993) Kinh inhabitants in the Central Highlands were usually immigrants, from more heavily populated areas of the Red River Delta or coastal Vietnam, who have migrated to take advantage of the agricultural opportunities offered in the Highlands. Their main economic activities are wet rice cultivation, farming of industrial crops, trading, livestock breeding and handicraft product (SWECO et al., 2008). The Kinh is said to be rather well off (ibid.).

In addition to Kinh, there are two major ethnics belonging to minority groups (Electrowatt, 1993). These are the Gia Rai and the Bana. At the end of 1998 the Gia Rai accounted for 16.7% and the Bana for 15.7% of the total population (SWECO et al., 2008). The Gia Rai is a local ethnic group living in the basaltic plane plateau (ibid.). Their main economic activities are farming on terraced fields in combination with livestock breeding, and handicraft. Agriculture production is centered on the production of crops by shifting cultivation.

The Bana ethnic group usually resides on high mountains or in valleys surrounded by mountains (SWECO et al., 2008). They belong to the Mon-Khmer linguistic group and originated from the coastal area of Quang Ngai and Binh Dinh before gradually moving into the western mountainous region (Electrowatt, 1993). Their main economic activities are farming on terrace fields in combination with livestock breeding, exploitation of natural resources, particularly hunting and gathering (SWECO et al., 2008).

The lower Se San in Cambodia

In Cambodia there are five districts located in the Se San basin. Four districts are in Ratanakiri province with the total population of 23,738 in 2006 (own compilation from commune database, Ratanakiri, 2006) while another district is in Stung Treng province with 3,894 inhabitants in 2004 (SWECO, 2007).

Population in the Se San basin in Cambodia is well known for its diversity of ethnic minority groups. Nine out of thirteen minority groups in Ratanakiri province reside in the Se San basin. These include Lao, Jarai, Kachok, Tampuan, Brao, Kreung, Khmer, Kavet, and Chinese (Fisheries Office, 2000; Author's field note). In Stung Treng province seven different ethnic

groups live in the basin including Lao, Lao Deum, Khmer, Khmer Kho, Khmer Padeum, Pnong and Kreung (Baird et al., 2002).

Most of the population typically follows the pattern of houses in rows along the riverside. They do gardening closest to the river bank by taking advantage of river water for watering. Rice fields are also found along the river bank and further up. Subsistence economy is based on rain-fed paddy cultivation and on fisheries. Some villagers also have swidden upland fields further up from the village. Forests bordering rice fields provide firewood and construction material, vegetables, fruit, roots, mushrooms, leaves and other plant items for food and traditional medicine, as well as wild animal for hunting.

1.4 Research approach and methodology

1.4.1 Methodological design – three arenas

This research examines how various social actors across spatial location respond to the Yali-Falls dam impact on the Se San River basin. To simplify the analysis, this research uses case study as the unit of analysis (De Vaus, 2001: 219). As briefly mentioned in section 1.2, the units of analysis in this research are the three different arenas in which interacts on impact take place, that is, the local, national, and international and global arenas. In this study, I use definition of arena which was adopted by Long (2001: 59) who defines arena as “social and spatial locations where actors confront each other, mobilize social relations and other cultural means for the attainment of specific ends.” In this definition, social actors are not necessary confined within their respective spatial location but they enter and interact at every level of arenas, be it local, national, international or global.

For the local arena I study perception of local actors towards dam impact on local community livelihoods and compare perceptions of other actors at national and international levels. Through this analysis I can trace the main actors, their roles and interests and the strategies they play. In this arena, I look into how social relation and network are formed and built at local level as a strategic group to advocate Cambodia government agencies to negotiate with its counterpart, Vietnam government, to resolve hydropower dam impacts. This analysis allows me to explain the processes by which actors mobilize social relation and strategy aiming at influencing decision-makers at national and international levels.

For the national arena I investigate how Cambodia government agencies have been responding to find solution of dam impacts on the Se San River. The analysis unpacks the working system in Cambodia in relation to solving transboundary issue of hydropower dam development and its

impact. It explains the multiplicity of interaction between actors not only across national level but local and international levels. It also explains the success and failure of outcomes of intervention taken by national and international actors.

For the international and global arenas I examine how the issue on dam impact and dam development on the Se San River was put into discussion in international and global agenda. The discussion identifies and analyzes pro-and anti-dam actors across international and global levels which explain how these actors interact and employ their strategy to influence decision-making for dam impact intervention for the Se San basin. In this level of analysis, I also investigate the processes by which Vietnamese dam development agency employs strategies to negotiate with Cambodian government to expand hydropower dam development on the Cambodia's stretch of Se San River.

In order to proceed with case study, analyzing information and data from case study must be guided by theory (De Vaus, 2001: 201). Further discussion of theory and analytical framework to examine the three arenas is provided in chapter 2.

1.4.2 Methods of data collection

This study involved a fieldwork of data collection of ten months from May 2007 to February 2008. It mainly engaged qualitative method of data collection using semi-structured interviews, focus group discussion, and observation. Three levels of data collection were conducted.

The first level focused on data collection at local level where I selected only affected communities in Ratanakiri province to be investigated from June to October 2007 (an overview of this area is given in section 1.5). I chose only this province because 1/ this province borders to Vietnam and is therefore proximate to the dam site, 2/ this province constitutes a large number of people living along the Se San river, 3/ the affected populations in this province were well informed about dam impacts by local and international NGOs as early as 2000 and therefore their perspectives on negative effect are influential, 4/ the presence of local NGOs and community-based Se San protection network exist in this province, and 5/ the affected communities in Vietnam are not considered in the scope of this study because this study is about responses of transboundary issue where Cambodian local communities seek their Cambodian government to find solution with Vietnam government.

In this local level, forty five of 60 villages located adjacent to the river were visited and studied regarding the affected communities' perception towards hydropower dam impact, their actions in

coping river change and their role in solving transboundary issue of hydropower dam impact on the Se San River.

Focus group discussion was mainly used to collect information from local community. Three to six persons from each village were invited for participating in focus group discussion. The number of participants varied from village to village depending on their availability and accessibility. In some villages, all residents abandon their home and move to live in the farm during the farming period from June to December. Therefore, a lot of time was spent in searching them. In some cases, I conducted semi-structured interviews with separate individual villagers at the farm spot located four to five kilometers from their residential village.

Semi-structure interview was also conducted with individual fishers, farmers, village chiefs, members of commune council, and district governors. Beside these, observation was also employed during field visit and accommodation in the village to verify and understand real situation. When living in the village I conducted informal talks with local villagers in regards to river change, their livelihoods and their views on various interventions of government and NGOs. After the informal communication I transcribed the conversation into my field note in the next hour or in the following morning if evening talk was conducted.

Prior to field research at local level, I conducted interview with various officials at provincial governor office, provincial government departments such Provincial Department of Water Resources and Meteorology; Provincial Department of Agriculture, Forestry and Fisheries; and Provincial Department of Planning. The aim was to gain insight about geographical location of affected areas, and to understand the views of provincial officials as regards to dam impacts and their interventions.

In NGO sector, I worked closely with 3SPN to understand how this network operates at local, national and international levels. During my field work I often attended meetings and workshops organized by this local NGO and its partners such as monthly local community network meeting, annual Se San workshop, and NGO network meeting.

The second level focused on data collection at national level. Semi-structured interview was mainly used to interview key informants who have been engaged in Se San issue such as officials and senior officials of CNMC; Ministry of Water Resources and Meteorology (MOWRAM), Ministry of Environment (MoE), and Ministry of Industry, Mine and Energy (MIME). The main aim of the interview at this level was to gather information about events related to dam impact, intervention, achievement, and constraints in resolving the Yali-Falls dam issue on the Se San

River. The interview was done partly in May and November 2007. At this level too, I conducted interview with various staff of NGOs in Phnom Penh including Oxfam America (OA), NGO Forum on Cambodia (NGO Forum), and Culture and Environment Preservation Association (CEPA) who have been involved in Se San issues since 2000. The interview was conducted partly in November 2007 and February 2008.

The third level focused on data collection at international level. Semi-structured interview was mainly used to interview key informants who have been engaged in Se San issue in Vietnam such as officials and senior officials of VNMC, Electricity of Vietnam (EVN), Vietnam Power Engineering Consulting Company 1 (PECC 1), and Institute of Water Resources Planning of Vietnam Ministry of Agriculture and Rural Development.

Beside this, I interviewed officials of the Embassy of Sweden and Embassy of Norway in Hanoi who support Vietnam government with financial and technical assistance to review Master Plan and a Feasibility Study for Se San 3 hydropower project in Vietnam and to conduct National Hydropower Plan Study for Vietnam between 1994 and 2004. Interview with officials in Hanoi was conducted in January 2008.

In this level, I conducted one interview with the former senior staff of the MRC Secretariat who had been involved from the outset of the MRC Secretariat's intervention in early 2000. With this communication, I had an access to some reports and minutes of meetings which are useful to analyze the written data. Beside this, interviews and meetings were conducted with team of Basin Development Program, Hydropower Program and Environment Program of the MRC Secretariat.

Beside primary data mentioned above, I collected and analyzed secondary sources of data such as relevant statutes and agreements, policy papers, newspapers, newsletters as well as previous relevant analytical studies and consultancy reports from the MRC Secretariat in Vientiane, VNMC in Hanoi, CNMC and NGOs in Phnom Penh. One of the important sources which I obtained data to analyze responses of international and global actors is partly from the website of International Rivers³ organization which avails some of important information to public such as official letters relevant to the issue of the Se San dams.

In addition, I participated in a stakeholder consultation workshop on EIA of Se San River organized by VNMC and CNMC in Phnom Penh on 5 July 2007. In this workshop I benefited from discussion and debate raised by Cambodia participants from different ministries and local

³ <http://www.internationalrivers.org/>

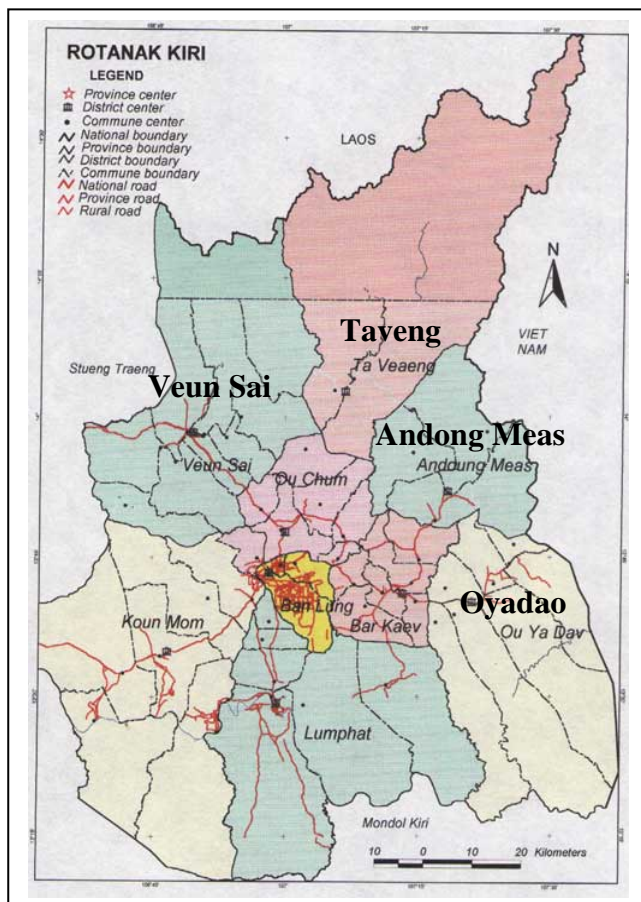
governments of the affected areas in Ratanakiri province. During the workshop I taped the discussion, transcribed and summarized the finding of the workshop.

1.5 An overview of dam affected area in Ratanakiri province

1.5.1 Overall area and population affected by dam

Ratanakiri is the most remote province located about 600 km from Phnom Penh capital city in north-east of Cambodia. It borders to Laos in the north and to Vietnam in the east. The province is currently characterized by poor infrastructure such as road and communication networks. The province consists of nine districts, 49 communes and 240 villages. In 2006, the total population is about 133,400 with the density of 12 persons/ km².

Figure 1.2 Map of Ratanakiri province



Source: Canby Publications Co., Ltd.⁴

⁴ <http://www.canbypublications.com/maps/provrattan.htm> (access on 23 August 2008)

Ratanakiri province is home to Cambodia's ethnic minority population, the so-called hill tribes or indigenous people. According to the 1998 National Population Census more than half of the country's ethnic minority people reside in Ratanakiri, 101,000 vs 64,000 persons (ADB, 2002, cited in SWECO, 2007: 30). With reference to the 2006 provincial database, the province constitutes 11 ethnic minority groups: Tampoun, Kreung, Jarai, Brao, Kachok, Lun, Rodeer, Phnong, Cham, Kavet and Lao. Khmer which hold the majority ethnicity in Cambodia represents only 23% of the total population in Ratanakiri Province and they mostly live in urban centers of districts and province.

In Ratanakiri, the Se San River flows through four of its nine districts including Oyadao, Andong Meas, Taveng and Veunsai.

Oyadao is the most upstream district located about 50 km from provincial town of Ratanakiri and it borders to Vietnam in the east. It serves as an economic gate way to Vietnam through national road number 78 which is currently under restoration. The district is divided into seven communes and 29 villages with the total population of 13,970. Only one commune is situated along Se San River with population of 1,143 in 2006 and all of which are Jarai ethnic minority group. This commune called Se San, comprises three villages namely Phi, Katang and Padal. This commune is one of the most remote areas of Oyadao district with poor road conditions. The commune is located approximately 35 km from the district town and 85 km from the provincial town. Riverbank villagers depend on farming, gardening, hunting and fishing for their livelihood. There is neither a market nor a health center present in the commune. The villagers often go to markets in Vietnam by foot, selling their vegetables, bamboo shot, soybean, cashew nut, wild animals and forest products. In return they purchase rice, foods, cloth and shoes. The area is characterized by steep hill and mountain terrain which is difficult in traveling. The villagers take a whole day to travel up and down between home and market. Travel by boat between the villages is difficult because of rapids. There is no machine boat present in the commune except pedal boat used to cross the river from one side to another.

Andong Meas district is downstream of Oyadao located approximately 60 km north-east of Ratanakiri provincial town. This part of river stream is less steep than at Oyadao district. It allows villagers to navigate their boats in most parts of the river. The district is divided into three communes and 21 villages. In 2006, the total population is about 9,445. One third of the district population resides along the Se San River and almost all of which are ethnic minority belonging to Kachok, Lao, Jaray, and Tompoun.

Taveng is the third downstream district located 48 km north east of Ratanakiri town, bordering to Laos in the north and to Vietnam in the east. The district comprises two communes and 20 villages with a total population of 5,503 in 2006. In total, 19 villages are located adjacent to the Se San River. Most of the population belongs to Brao and Kreung ethnic minority groups who believe in animism. This part of river stream is navigable all year round. In wet season the community usually uses pedal boats and engine boats traveling up and down between their village and district town. Two thirds of the villages cannot be accessed by road in the wet season except by commuting on foot.

Veunsai is the fourth dense downstream district located 40 km north of Ratanakiri town. The district comprises nine communes and 34 villages with 16,305 inhabitants in 2006. In total, 25 villages are located along the Se San River with 13,522 inhabitants. All belong to ethnic minority groups such as Lao, Brao, Kachok, Kreung, Tompoun, Lun and Kavet. A part from this a small portion of Chinese is also presented near the district town. This part of river stream is navigable all year round.

In total there are 23,738 inhabitants living adjacent to Se San River in Ratanakiri Province in 2006 (see below table).

Table 1.3: Number of Se San’s riverbank population in Ratanakiri Province, 2006

District	No. of communes	No. of villages	No. of families	No. of people
Oyadao	1	3	244	1,143
Andong Meas	3	9	839	3,869
Taveng	2	19	1,181	5,204
Veun Sai	9	25	2,621	13,522
Total	15	56	4,885	23,738

Source: Author’s compilation from commune database 2006, Ratanakiri Department of Planning, Cambodia

1.5.2 Overview of socio-economic characteristics

The landscape in the research area varies from hilly with relatively steep riverbank slopes in Oyadao district to flat lowland area in the lower part of the basin in Veun Sai district. The most densely populated parts are within Veun Sai and Taveng districts. The land use consists of

agricultural area, settlement area and a vast tropical rainforest area. The present agricultural use is dominated by wet season paddy and swidden rice, fruit tree, vegetable, cashew and rubber. Animal husbandry is predominant at household level. The river is mainly used for drinking, cooking, bathing, fishing, and navigating. The settlements are mostly located along river bank. Forests provide firewood, construction materials, vegetables, fruits, roots, mushrooms, leaves and other plant items for food and medicine as well as wild animals for hunting.

Crops

The four districts are rich in natural resources including forest, fertile soil, river and streams. Rice farming is common and the main source for daily livelihood. Some indigenous communities remain engaged in shifting cultivation. Slash and burn practices have long been used to clear forest for cultivation. They believe that slash and burn practices enhance soil fertility through ash and kill insects. For rotation purpose farmers usually own three to four pieces of farmland. Farmers cultivate only one piece of farmland for two to three years and allow the rest to have enough time to return to fertility. Apart from rice, substitute crops are grown such as corn, potatoes, vegetable, peanut, sesame, sugar cane, and cashew. Most farms lie on flatland near the river bank while others lie on the foot hills. Some farmers grow rice and cashew together in the farm. Rice yields range from half to two and a half tonnes per hectare. This low yield results from poor soil and water management. Some villagers do not produce enough rice for year round consumption. They depend on other cash crop for income in exchange for rice. Presently growing of cashew is on the increase due to its high economic value and it can protect their land from being encroached by others. The farmland is usually far from their residential village at two to five kilometers. Walking is usually their means of transport. The farmers begin rice cultivation and crop growing during rainy season starting from June to November. During this period they leave the village and stay permanently in the farm. In the dry season some people grow vegetables on the river bank but get low yields. Crops are sometimes damaged by fluctuation of river flow.

Table 1.4 below shows the total land area used for rice cultivation. Most of farmers in Veun Sai district engage in lowland method cultivation which yield one and a half tone to two and a half tonnes per hectare where as the rest in upstream engage in upland method cultivation which yield half tonne to one and a half tonnes per hectare.

Table 1.4 Rice cultivation areas by district and commune adjacent to Se San River, 2006

District	Commune	Wet season rice (ha)		
		Lowland method cultivation	Upland method cultivation rice	Total
Oyadao	Se San	0	111	111
Andong Meas	Nhang	12	792	804
	Talav	350	163	513
	Malik	31	35	66
Taveng	Taveng Leu	0	669	669
	Taveng Krom	0	937	937
Veun Sai	Koh Pong	117	109	226
	Koh Peak	0	349	349
	Ka Chon	442	83	525
	Kok Lak	55	20	75
	Ban Pong	354	9	363
	Veun Sai	523	30	553
	Phnom Kok	231	20	251
	Pak Kalann	193	23	216
	Hatt Pok	1425	36	1461
Total		3,733	3,386	7,119

Source: Author's compilation based on data provided by Ratanakiri Department of Agriculture, Forestry and Fisheries

Livestock and poultry production

Livestock and poultry are common animals raised in the community for various purposes ranging from using as power for rice farm cultivation (for cow and buffalo) to using as cultural belief for spiritual sacrifice and home consumption. Over the past ten years or so, farmers often lost their animals due to unknown epidemic diseases and drowning in river floods.

Fisheries

The Se San River is part of the Mekong – Tonle Sap (Great Lake) River system that is known to be among the most species rich and fish productive rivers in the world (SWECO, 2007). SWECO (2007: 25) confirmed that a large part of the fish populations are highly migratory and several species perform migrations as far as from the Mekong delta and most likely far up in Vietnam. The Se San River has gentle slope and contains a large number of deep pools, which made it possible for large fish to survive in the dry season. Fisheries contribute about 90% of the protein

supply for the riverbank population (ibid.). Fisheries also provide opportunities for riverbank villagers to diversify their livelihood activities and optimize their labor resources as well as give them access to an income-generating activity with very little capital investment. The river is therefore the life nerve for people to maintain and improve nutrition, as fresh and processed fish represent a significant source of protein.

The results of the socio-economic description indicate clearly that the livelihoods of the population in the Se San River Basin are very closely connected with the annual hydrological cycle of the basin. Therefore any change of hydrological pattern of the river system implies the effect on their livelihoods.

1.6 Structure of the thesis

This study contains seven chapters. The first chapter is introductory laying out a short overall introduction, background of the study, an overview of the Se San river basin, research approach, and an overall view of the affected area in Ratanakiri Province of Cambodia. The second chapter explores the theoretical debates relating to river basin management, concepts of development and hydropower development, and concepts of planning. In this chapter an analytical framework forms an important part of this thesis to unpack the impacts of planned intervention of hydropower dam development in the Se San River basin. An actor-oriented approach developed by Norman Long (2001) is employed in this analysis.

The third chapter is a background chapter about water resources management in the Mekong basin which explores how water resources have been planned and managed at the basin and sub-basin levels. It introduces important historical water resources management regimes in the Lower Mekong Basin and therefore shows a first hand knowledge about key actors and policy development in promoting hydropower in the Se San River basin.

The fourth, fifth and sixth chapters are the analytical chapters which analyze three levels of arena of intervention taken by various social actors in responding to the effect of Yali-Falls dam at local, national, and international and global levels. The fourth chapter I examine local arena which explains actions taken by various social actors at local level in responding to the Yali-Falls dam impact. The analysis provides insight how social network at local level has been developed and what successes and constraints this social network has met and faced.

The fifth chapter explores the national arena in which Cambodia government responds to the Yali-Falls dam impact and other dam development on the Se San River. The sixth chapter discusses responses undertaken at international and global levels which outlines the effort of

some international and global actors in contributing to solving the Se San issues. It discusses how social actors play their role in influencing decision-making for dam development in Se San River basin at international and global levels. The seventh chapter concludes the study by integrating the theoretical concepts with the empirical findings and outlining lessons learnt for future dam interventions.

CHAPTER 2

THEORETICAL REVIEW AND ANALYTICAL FRAMEWORK

2.1 Introduction

The purpose of this chapter is to review and discuss relevant theoretical and analytical terms and concepts to river basin planning and management. The following four sections are devoted to theoretical review while the sixth section discusses the analytical framework. The seventh section proceeds to summarize and conclude this chapter.

Section 2.2 begins with the issues of river basin development as a starting point to capture various problems which arise as the results of development process and social change. Section 2.3 delves into the discussion of terms and concepts of river, river basin, and management. The aim is to examine the nature and significance of river and river basin and show the needs for water resources management. Section 2.4 discusses concepts of development and relates its meaning to the field of hydropower development.

Section 2.5 discusses the concepts of planning. The discussion of planning is the introduction to the analytical framework of the thesis, which is discussed in details in section 2.6. Section 2.6 presents the analytical tool that will be used in the thesis to unpack the planning process of river basin management. In this study, an actor-oriented approach to social interfaces is identified as an important analytical concept since it helps to analyze the arenas of conflict during the development process. Apart from being an analytical tool, it can also be used as a tool for implementing agencies and policy makers to identify the issues and problems during the policy implementation process and thereby corrective measures can be taken right during the analysis of the policy implementation process. Finally, section 2.7 provides the summary and conclusion to this chapter.

2.2 Issues of river basin development

Globally, there are more than 200 international river basins that shared by two or more countries, accounting for about 60% of the earth's land area (World Bank, 1993: 38). These river basins constitute a significant portion of the world's fresh water resources. Fresh water resources within a basin serve human needs such as drinking, cooking, and washing and sanitation; allow land to become productive through irrigation; provide a habitat for plants, fish, and wildlife; supply urban and industrial uses; generate electricity through hydropower; and support many

recreational uses. Empirically, river resources around the world have been utilized for centuries to control volatile supplies of water in order to meet demands for water quantity, quality, and reliability in time and space (Loucks et al., 1981 cited in Lee and Dinar, 1995: 2). While river basins provide such a great freshwater resource and asset, they also constitute a potential source of conflict (Meijerink, 1999: 3). The dominant use conflicts over river basin resource allocation are usually for water quantity and water quality in space and time (Lee and Dinar, 1995: 3).

Lee and Dinar (1995: 3) classified water use conflicts as either consumptive or non-consumptive. Consumptive use is defined to be the amount of water withdrawn from the system in such a way that it is no longer available for other uses. In this respect, river basin water has common pool characteristics in the sense that one use precludes other uses. Examples are agricultural irrigation and urban water use. Although agriculture produces return flows and seepage to the basin, a large amount of water is consumed by evaporation. According to a Comprehensive Assessment of Water Management in Agriculture, the total amount of water evaporated in crop production would increase from 7,130 km³ of today to 12,000 – 13,500 km³ by 2050, corresponding to an increase by 70% to 90% for the next four decades (IWMI, 2007: 14).

Moreover, consumptive uses may compete by sector (e.g. municipal, agricultural, and industrial), within sectors (allocation to one farm versus another farm); or regionally (upstream versus downstream). On the other hand, non-consumptive uses do not result in a significant reduction in net stream flow, and depending on the type, may allow for multiple non-conflicting uses at the same time and location. Examples of non-conflicting non-consumptive uses include reservoir storage, fish habitat, and sightseeing recreation. More problematic situations occur when non-consumptive uses interfere with or lower the value of water precluding or impairing its use by others. For instance, non-consumptive uses such as leaching salts from agricultural field and using the river to dispose of untreated waste, degrades water quality at the expense of other uses.

Although the upstream users may be best suited to improve the quality of downstream water by altering water use practices, often the upstream user has no means of capturing the benefits or even of recouping the costs, thereby having no incentive to reduce pollution loads.

Non-consumptive uses of water also conflict in time. For example, residential users may prefer that a quantity of water be stored for future use, environmentalists may prefer that water be released to support the fish habitat, and the industrial sector may prefer a release for electricity generation. For each user, although the water extracted and its quality remains the same, one use at a particular time precludes another use.

Over the past decades, global economic development, population growth and technological modernization have caused an increase in the number and severity of problems emerging in international river basins. Population and economic growth means that the necessity for energy consumption is on the increase. Therefore, to keep sufficient supply for energy growing demand, exploitation of river basin potential for hydropower dam construction has been widespread, particularly since the middle of the twentieth century when improvements in engineering and construction skills, hydrologic analysis, and technology made it possible to build dam safely (Gleick, 1998: 69). During that time large dams were perceived as one of the most significant and visible tools for the management of water resources (ibid.). Large dams were seen by many countries and development agencies to play an important role in helping communities and economies harness water resources not only for energy generation but also for food production, flood control and domestic use (WCD, 2000: 11-15.). Moreover, it was viewed as symbols of modernization and humanity's ability to harness nature and therefore the construction of large dams was seen as synonymous with development and economic progress.

The World Commission on Dams (2000: 14) estimated that dams generate about 19% of world electricity. Gleick (1998: 71-74) shows that the construction of large dams still continues to increase in many parts of the world, including China, India, Laos, Nepal, Malaysia, Russia, the Philippines, Brazil, Honduras, Mexico and Ecuador, Albania, Bosnia, Croatia, Greece, Iceland, Macedonia, Portugal, Slovenia, Spain, America, and Canada. While dams provide numerous benefits as stated above they also drive numerous conflicts between upstream and downstream countries due to the fact that dams bring profound change to river flow. One of these changes is the alteration of the stock of fisheries and other resources consumed by users downstream (McCully, 1996)⁹. Further discussion on the issues of hydropower development is presented in section 2.4.

2.3 Terms and concepts of river, river basin, and management

In this section, terms and concepts of river, river basin, and management are defined and discussed. The section aims to explain the characteristics and importance of rivers and river basins, which require an integrated management. Section 2.3.1 defines the term 'river' and its significance. Section 2.3.2 defines the term 'river basin' which is identified as a unit for water resources management. Section 2.3.3 defines the term and concept of river basin management.

⁹ There are a number of literatures on hydropower dam and dam's impacts which I have reviewed. These include Goldsmith and Hildyard, 1986; Covich, 1993; Gleick, 1993 and 1998; McCully 1996; WCD, 2000; Cech, 2003; Postel and Richter, 2003; and Jain and Singh, 2003.

Section 2.3.4 discusses the organizational models of river basin management. And finally, Section 2.3.5 focuses on the complexity of river basin management, which points to the issues and constraints in river basin management.

2.3.1 River

A river can be defined as a “large natural stream of water flowing in a channel” (Oxford dictionary, 1995). The main characteristic of a river is that water flows downhill from the so-called “headwaters or source” to the end point of a river, the so-called “river mouth – a place where the river enters the sea”. The river consists of a main channel and its tributaries. Tributaries are smaller streams that flow into the main channel. The meeting point between the tributary and the main channel is called confluence.

Provided that river water flows from upstream to downstream, two distinguished parts of the river system are usually identified, the upstream and the downstream. The upstream denotes a location toward the headwaters of a river or tributary, whereas downstream is toward the direction of a confluence with a large stream, mouth, or other end point of a river (Cech, 2003: 63).

According to Cech (2003: 62) rivers originate in several sources. Most are fed by springs or small streams coming together to create larger rivers of water. Some originate in lakes, such as the Mississippi River at Lake Itasca in northern Minnesota, or Nile River which begins near Lake Tana in the highlands of Ethiopia. Other rivers, such as the Colorado River in the Rocky Mountains of Colorado, begin as trickles of melted snow water.

A great significance of river is that it provides fresh water resources which riparian communities can use for drinking, cooking, washing, bathing and swimming, fishing and irrigating crops. River is considered to be as important as human life in many communities, particularly, it is true for those of indigenous people who depend on river for their life and livelihoods.

While we have seen the importance of the term ‘river’, ‘river basin’ is another terminology which usually used to term as the unit for water resources management. Succeeding section discusses such terminology.

2.3.2 River basin

River basin is a terminology used to express more than just a river as defined above. It is a term used to denote the total land area that contributes water to a river. As McCully (1996: 8) puts it “all land is part of river basin and is shaped by water that flows over it and through it.” Conventionally, the Helsinki Rules define a river basin as the geographical area determined by

the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus (cf. Article II of the Helsinki Rules, International Law Association, 1966).

The term 'river basin' is relatively straightforward, but it can be defined at almost any spatial scale. According to Mostert (1999: 9), river basins can range from a small size of a few hectares to over six million square kilometers (for instance, the Amazon basin) and they can be located in as many as 14 countries (for instance, the Danube). River basin can be divided into several sub-basins. Sub-basin is the area from which tributaries drain their waters to the mainstream of river. In this study, Se San River is identified as a tributary of the Mekong River therefore Se San is a sub-basin of the Mekong basin.

Since water is not static, a river basin is viewed not just as geographical area but as a unit in which strong relations exist between the different elements: land and water, ground water and surface water, quantity and quality, upstream and downstream (Mostert, 1999: 9). These interrelations turn river basins from a geographical area into a coherent system (Lundqvist et al., 1985: 14) of interacting and interdependent elements. For instance, an increase in irrigated agriculture and use of pesticides upstream can decrease the quantity and quality of the water available downstream. Through mechanisms such as these water and soils in the river basin come into some sort of integration (ibid.). Mostert (1999: 9) argues that sustainable development can only be ensured if these interrelations are taken into account in the management of the natural environment, and this makes the notion of river basin so important. This conveys the meaning that river basin shall be treated as the unit for water resources management. For this purpose, the term 'river basin management' is often used.

2.3.3 River basin management

Mostert et al., (1999) pointed out that river basins are open systems with sometimes ill-defined boundaries, as rivers may have a shared delta, their boundaries often do not correspond with aquifer limits and in flatland and extremely dry areas are either vague or human-made. In addition, river basins interact continuously with the atmosphere (such as precipitation and evaporation, airborne pollution) and the receiving waters (such as seas and sometimes lakes).

Despite their open and sometimes ill-defined boundaries, river basins are very important systems. They fulfill many important functions, such as water supply for households, industry and agriculture, navigation, fishing, recreation, and living space. Economic and social development and even life itself cannot be sustained without sufficient water at the right time and space and of

the right quality. Moreover, water has shaped and continues to shape the environment in which we live. It erodes mountain areas, transports sediment and creates delta areas. It can cause floods but it is a structure and mechanism through which nature reproduces and reshapes itself.

River basin management is about all of these things. It is much broader than traditional water management and includes significant parts of land-use planning, agricultural policy and erosion control, environmental management and other policy areas. It covers all human activities that use or affect freshwater systems. To put it briefly, river basin management is “the management of water resources of a basin as part of the natural ecosystem and in relation to their socio-economic setting (Jain and Singh, 2003: 788).”

According to Mostert et al. (1999) the term ‘river basin management’ emphasizes the relation between water and land resources and the geographical and often international dimension (upstream-downstream). Moreover, this term does not imply that all management should take place at the basin level, or that river basins are closed systems or the only relevant geographical areas. It does imply, however, that river basins are important units that should be managed carefully, for the benefit of present and future generations (ibid.). To explain how river basins are managed at different scales and through different methods, the next section discusses the organizational model of river basin management.

2.3.4 Organizational models of river basin management

Mostert et al. (1999) identify three organizational models for river basin management: the hydrological, administrative and co-ordination models. According to them, the hydrological organizational model is structured based on hydrological boundaries in which all water development and management decisions are typically concentrated in one single agency namely the “river basin authority”. This river basin authority is charged with decision-making powers, is highly autonomous and has its own finance. Extensive river basin planning is usually developed by this river basin authority. The most famous example of this model is the Tennessee Valley Authority (TVA), created in 1993 in the United States (Mostert, 1999; Wester and Warner, 2002).

The administrative organizational model is the opposite of the hydrological model. In this model, the zones of control follow the political and administrative boundaries. Various bodies, for instance, provincial, municipal, etc. may be assigned responsibilities for water management in the area of their jurisdiction. Clearly, in this model, the water management responsibility is not based on hydrological boundaries. In this model there is no river basin planning. This model applies in most countries in the world, where water is not managed along basin lines.

The coordinated organizational model falls somewhere between the hydrological and the administrative models. In this model water management is performed by “river basin commissions” with a coordination task. Coordination by these commissions will typically include strategic river basin planning. In these plans strategic goals are set. The choice and application of the measures to reach these goals are left to different bodies that are not based on hydrological boundaries. Pioneering countries in applying this approach are France and England, which have had functioning coordinating bodies at the basin level for the past 30 years (Betlem, 1998; Buller, 1996 cited in Wester and Warner, 2002).

In the coordination model, the river basin commission is not charged with decision-making powers. According to Mostert et al. (1999) there are two types of river basin commissions: technical commissions and policy commissions. The tasks of technical commissions can include the implementation of joint monitoring, the execution or supervision of joint research, the preparations of technical specifications for joint projects, and the preparation of technical bylaws. Policy commissions, however, deal more directly with policy issues and sometimes develop a non-binding river basin management plan, which has to be adopted by the different managers. They do not manage river basins on their own, but they offer a platform for discussions between the different managers involved and stimulate, structure and institutionalize interactions.

As described above, each model has advantages and disadvantages. In the hydrological model administrative boundaries coincide with hydrological boundaries and there seems to be little chance of upstream-downstream conflicts. However, since river basin authorities usually deal with water management only, this model may isolate water management from other relevant policy sectors, and intersectoral coordination may become a problem (Mostert et al., 1999). Moreover, in countries with decentralized water management the adoption of this model would imply centralization, and in international river basins it would imply the establishment of a supranational authority (ibid.). Consequently, river basin authorities are often only an option for smaller national basins.

In the administrative model of water management, land-use planning and other relevant policy sectors can be or cannot be kept together (Mostert et al., 1999). A major disadvantage is the serious risk of upstream-downstream conflicts and the lack of a platform to discuss these problems. In the coordinated model such platforms exist: river basin commissions. The different bodies participating in these commissions could each individually ensure coordination between water management and other policy sectors, and together, in commission, they could coordinate their water management.

Even though, river basin is managed in different models with advantages and disadvantages, river basin management are very complex and contested in nature. The following section will discuss this complexity.

2.3.5 The complexity of river basin management

In many aspects, river basin management is highly politically contested as river basin provides natural resources potential from which competition among users arises. Wester and Warner (2002) argue that river basins are as much political units as they are natural units; and that, to address these issues, it is necessary to bring politics back into river basin management, as explanations grounded in politics show that boundaries and institutional arrangements are not natural but matters of choice and contestation. In short, water use is highly political, that is, requires “mediation of social power, and strategic action, that is, the process through which the social relations of power are constituted, negotiated, reproduced, transformed or otherwise shaped (Mollinga and Bolding, 2004: 6).”

Since the river basin is treated as a political unit therefore it becomes the territory of governance (Wester and Warner, 2002). The governance concept has been widely used and implemented in many countries. Governance can be defined as the prevailing patterns by which public power is exercised in a given social context (Jenkins, 2002: 485). Governance is comprised of the complex mechanisms, processes and institutions by which citizens and groups articulate their interests, mediate their differences and exercise their legal rights and obligations. According to GWP (2003: 4), the concept of governance encompasses law, regulations, and institutions. It also relates to government policies and actions, to domestic activities, and to networks of influence, including international market forces, the private sector and civil society. Governance continues to be shaped by political constraints, including the interests of powerful actors, the changing nature of sovereignty and the performance of development agencies (Jenkins, 2002: 488).

The fundamental principles of good governance entail the creation of effective partnerships to ensure that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and most vulnerable are heard in the decision-making process. Hence, stakeholder participation in river basin management is essential. However, its success is still questionable as the participation discourse draws the attention away from the need between different people for redistribution of resources, entitlements and opportunities (Wester and Warner, 2002). This is based on the recognition that those who wield little power have limited opportunities to express their interests and needs, and are generally excluded from key decision-

making processes, and their knowledge is considered insignificant (Kothari, 2001: 142). Kothari (2001: 140) points out that participatory methodologies require the formulation and adoption of a framework in which the micro is set against the macro, the margins against the center, the local against the elite, and the powerless against the powerful. From this point of view, river basin management would require a layered system of participation (Wester and Warner, 2002); and thus establishment of a participatory platform at basin level is the essence of sustainable development of water resources as it provides a regional platform for all interest stakeholders to meet and work together. This creates a kind of working environment and reduce the complexity by setting rules, assigning roles and allocating rights to the actors involved; and that, rules and rights create boundaries, ownership titles, permitted activities and in-groups and out-group, where roles structure the field (Wester and Warner, 2002).

2.4 Concepts of development and its meaning in relation to hydropower development

In this section, the main objective is to discuss the concepts of development from which we can derive and relate its meaning to the field of hydropower development. Section 2.4.1 discusses the concepts of development. Following this, section 2.4.2 discusses the meaning of development in the field of hydropower development.

2.4.1 Concepts of development

The term '*development*' is rather amorphous and there is a multiplicity of views as to what constitutes development. Often, the ethical question remains: development for what? What is the purpose of development and who are the beneficiaries of development? These questions are crucial in providing the necessary benchmarks to guide the objectives of the development process and the nature of development itself.

In the recent past, the tendency has been to define and perceive development almost exclusively in terms of economic growth targets. As Mabogunje (1980: 35) puts it "the primary role of economic forces in bringing about the development of a society has often been taken as axiomatic, so that development and economic development have come to be regarded as synonymous". However, development is seen to be more than just economic growth. According to Seer (1969) '*development*' involves increasing outputs in all sectors of the economy and distributing this output in order to enhance the quality of life of the broad mass of population. Thirdwall (1986), on the other hands, defines '*development*' as growth accompanied by change.

The above definitions refer to one perception wherein the term development is used to describe the process of economic, technological and social transformation within societies and countries.

This implies that development carries some sorts of a societal context. As Dale (2004: 1) puts it “development is viewed as a process of societal change that generates some perceived benefits for people, or as a state of perceived human well-being attained through such a process”. He argues that when analyzing development, we should be able to clarify who benefits from societal changes and, in cases of diverging opinions about benefits, who considers changes to be beneficial and who may not do so. At this point Dale (2004) sees development as societal development which has meaning in relation to human beings. He asserts that if development is a people-focused concept, its contents in specific situations must be clarified in relation to people-related problems.

In a broader context, Gore (1984: 241) defines development as a purpose towards which the exercise of state power is directed. He states that what development denotes in terms of both rhetoric and actual policy measures varies considerably between states. In rhetoric, development might mean for example, closing the income gap with the rich countries of the world and adopting socialist forms of economic organization (that is, all facets of development and development activities initiated, controlled and dictated largely by the state). In this regard, he argues that “with the adoption of development as a central purpose of the exercise of state power, the strategic field of state intervention has become potentially all-embracing (Gore, 1984: 242)”. New institutions are subsequently established within the state administration, public and parastatal corporations as well as various types of state-owned banks are set up and centralized development plans are drawn. Infrastructures, housing, and social services are all re-organized for development. And state intervention is actively directed towards stepping up production either through the establishment of state enterprises or through support to private investors such as the provision of physical and economic infrastructure, the organization of technical research and promotion of innovation and technology transfer, the creation of business training schemes and agriculture extension facilities, and the negotiation of trade agreements in international markets as well as for foreign loans or development financial capital.

Goulet (1971), also attempts to distinguish three basic components or what is known as core values in this wider meaning of development, which he itemizes as life-sustenance, self-esteem and freedom (cited in Thirlwall, 1986). Life-sustenance is concerned with the provision of basic needs, which he views as very crucial. To him, no country can be regarded as fully developed if it cannot provide all its people with basic needs, such as housing, clothing, food and minimal education. A major objective of development according to him, must be to raise people out of primary poverty and to provide basic needs simultaneously. This basic need approach to

development was largely adopted by the World Bank in the 1970s. Self-esteem is concerned with the feeling of self-respect and independence. No country can be considered as fully developed if it remains in economic and political subjugation to another powerful nation. That is, if the nation is exploited by others and does not have the power and influence to conduct relations on equal terms. Freedom denotes freedom from the three evils of ‘want, ignorance and squalor’ so that people are more able to determine their own destiny. According to Goulet, no man is free if he cannot choose; if he is imprisoned by living on the margins of subsistence with no education and no skills. The advantage of material development is that it expands the range of human choice open to individuals and societies at large. Sen (1999) argues that freedoms depend on various determinants such as access to facilities for education and health care, and liberty to participate in public discussion and scrutiny. He further argues that “development requires the removal of major sources of unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or overactivity of repressive states (ibid: 3).”

According to the above conceptions development has occurred when there has been an improvement in access to basic needs of the people, when economic progress has contributed to a greater sense of self-esteem for the country and individuals within it, and when material advancement has expanded the range of choice for individuals. Finally, the need for societal development stems from the rising search to improve conditions of living for better. That is to say, every human society is dynamic and at the same time prone to have a strong and growing desire for growth and change.

2.4.2 The meaning of development in relation to hydropower development

This section aims to discuss and conceptualize hydropower development as part of the development concept. As discussed above, development is about change, process, and progress, which aims to bring about economic growth, life-sustenance, self-esteem, and freedom for a particular society or a country. The ultimate goal of hydropower development is also about all of these things. In the following I try to explain my argument.

First of all, the advancement of water use evolved over thousands of years from basic human needs (such as food, shelter and drinking water) to complex technological innovations (i.e. from waterwheel to hydropower). This is a development process which, according to Mosse et al. (1998), is understood as a ‘progress’. The progress of technological innovation from waterwheel to hydropower development was discussed by Cech (2003) and by McCully (1996). According to

Cech (2003) the concept of hydropower development was borne from the history of using flowing water to power waterwheels for irrigation and grinding grains, which dates back to at least 3200 B.C. Later, waterwheel technology was improved and used to power a number of factories, such as textiles, wood, and metal. And finally, modern waterwheels were used to generate electricity when constructed within hydropower facilities of a dam. Based on information from Cech (2003) the evolution of hydropower development is summarized as follows.

From the early civilization the Egyptian waterwheel known as the Noria (which has buckets around its rim to scoop up water from a river) was used to divert water from a river for irrigation (Cech, 2003; McCully, 1996). Water was lifted by the buckets and then spilled into an irrigation channel. If the flow of the stream increased, more jars were added to the waterwheel. If water flow decreased, jars were removed to allow the waterwheel to rotate more efficiently. By 100 B.C. waterwheels were used to grind grains (such as corn and wheat) in Greece. This technology was then called 'watermill' (McCully, 1996). Around A.D. 300 the Romans improved waterwheel design by using a horizontal drive shaft attached to a vertical wheel for efficiency of scooping water. By 1086, there were 5,624 watermills in England (ibid.). By 1800 the number had multiplied to over 500,000 watermills through out Europe to serve various purposes, including grinding corn and wheat, powering bellows and hammers to make iron, grinding ingredients to make paper, cutting wood, crushing olives for oil, drilling gun barrels, and powering textile factories. In 1875, the Niagara Falls Hydraulic Power & Manufacturing Company built a canal 11m wide and 2.4 m deep to divert water from the Niagara River (in the U.S.), above the falls, to a sawmill sites below. The 46 m drop in elevation provided massive amounts of water energy to turn the waterwheels. A few years later Thomas Edison developed incandescent light bulb which created the demand for cheap electricity. The first hydropower station for Edison's electric system was a waterwheel constructed on the Fox River in Wisconsin in 1882. Hydropower generators were soon constructed along the Niagara Falls in New York and Ontario, and at other locations in the United States and Canada. Between 1902 and 1930 the United States built about 50 large dams, and from 1930 to 1980 the United States constructed a thousand more, together with tens of thousands of smaller dams (Gleick, 1998: 69).

As we have seen above, the invention of the waterwheel was an extremely important event in the history of hydropower development. According to the development theory described above, the emergence of hydropower development was the result of technological innovation and transformation. The innovation can be attributed to the economic force where the opportunity for

maximizing agricultural and industrial production is extremely essential to serve the demand for population growth and promote economic development. For instance, the history for improving waterwheel was more often to serve irrigation and milling agricultural and industrial products for economic prosperity.

The same is true for hydropower development. The hydropower dams regulate, store and divert water from rivers for electricity generation, agricultural production and flood control. In addition, large reservoirs of the dam are also used for recreation, tourism, and aquaculture, all of which contribute to the promotion of cash income. For instance, the World Commission on Dam (2000: 11) states that, “hydropower dams have been promoted as an important means to meet the need for water and energy services and strategic investments with the ability to deliver multiple benefits”. The benefits include regional development, job creation and fostering an industry base with export capability. Other goals include creating income from export earnings, either through direct sales of electricity, or by selling cash crops or processed products from electricity intensive industry such as aluminum refining (ibid.). According to Gleick (1993: 73) global hydropower production increased more than 20% during the 1980s. He argues that the development of new hydropower facilities has slowed greatly in the industrialized nations as the best sites have been developed and as the environmental costs of further construction rise. However, the greatest hydropower development is now occurring in those regions that have seen little development. During the 1980s, hydroelectric production increased 50% in Asia (ibid.).

However, while hydropower dams provide much advantage (in terms of economic growth, food production, and surface water recreation enhancement, storing water during wet season for later use during dry periods), they also provide much disadvantage (including urban sprawl, loss of wild habitat, and destruction of river corridors). As Cech (2003: 149-150) puts it, “dams and reservoirs have enhanced the health and economic prosperity of citizens around the world. However, dam construction comes with a price: it alters natural and human environments. Reduced flows, degraded water quality, and impacts on migratory fish are among serious problems caused by dams.” Much has been written about the environmental impacts of dams for example Goldsmith and Hildyard, 1986; Covich, 1993, Gleick, 1993 and 1998; McCully, 1996; Cech, 2003; Postel and Richter, 2003; Cernea, 2004. In the following, I summarize the dams impacts from these various literatures.

Environmental impact

- Dams change the characteristics of rivers. Water released from behind a dam has a different temperature than native river water (Cech, 2003). Water released from the bottom of a reservoir is usually cooler in summer and warmer in winter than river water, while water from outlets near the top of a reservoir will tend to be warmer than river water all year round (McCully, 1996). These thermal variations can be extremely stressful to aquatic species downstream (Goldsmith and Hildyard, 1984).
- Dams act as rigid barriers to migratory fish and can wipe out entire aquatic populations (Covich, 1993). Although fish ladders have been installed and fingerlings are being grown in hatcheries, the adverse effects of dams on fish migration are very serious (Cech, 2003).
- Water releases from a reservoir maybe uniform or erratic and can cause significant changes downstream. Uniform flow releases can reduce historic sediment loads, allowing 'cleaner' water to scour the downstream riverbed and banks for long distance. Erratic, large-volume releases usually transport high sediment loads and can harm native plants and animals (ibid.).
- Water released through outlets near the reservoir surface may be low in dissolved oxygen and nutrients in the summer but high in salts and nutrients in the fall. Water flow and water quality variations can be fatal to downstream aquatic wildlife (ibid.).
- Prior to the construction of dams, sediment was transported downstream until river velocities decreased and sediment loads were deposited. Dams completely change this natural system by capturing most of this silt in the reservoir behind the dam (ibid.).

Social impact

Impacts at the reservoir and dam sites

- The sudden inflow of large construction workers and related groups within small, often traditional and remote local communities causes social/health/economic and cultural problem at local community level. Socially destabilizing effects have been compounded by circumstances that made labor-camp settlements into a spreading source of AIDS (Cernea, 2004).
- Loss of cultural heritage assets: places of cultural, spiritual, or religious meanings were flooded by dam reservoirs (ibid.).

- Displacement of population who reside in the reservoir sites: living standards tend to drop in the years immediately following resettlement (ibid.).

Impacts in downstream

- Poor water quality released from dams caused waterborne diseases, diarrhea, and skin disease (Goldsmith and Hildyard, 1984).
- Loss of fisheries, aquatics and edible plants due to poor water quality, and water level fluctuation affect livelihoods of downstream communities who usually depend on natural resources for living (Cernea, 2004).
- In many downstream areas, agriculture has been historically based on the recurrence of natural and limited annual floods, and the local cultivators have adapted their agricultural and settlement patterns to this recurrence: they learned to “absorb” the flood into their agricultural strategies, practicing what is often called recessional agriculture or wetlands agriculture. Damming the annual limited floods and the flow of rich nutrients deeply disrupts recessional agriculture (ibid.).

To this point, it becomes evident that the environment which provides the natural and physical milieu as well as the input for development would need to be preserved if development itself has to be sustainable, benefiting not only the present generation but a future one as well. The proponents of sustainable development argue that sustainable development need be viewed as an integrated approach seeking the physical, environmental, economic, social, cultural and spiritual well being of the people. It is the strand of development approach which, places particular emphasis on ecological balance and social equity in development planning. It involves the management of our resources in such a way that we can fulfil our economic, social, cultural and aesthetic needs without inflicting permanent damage to the resource base and the life support system on which we all depend. That is, sustainable development advocates for development strategies that manage all resources both natural and human, as well as financial and physical assets for increasing long term wealth and well being.

To that end, I argue that managing water resources requires the right planning procedure. To do this, I seek to discuss the concepts of planning from which a framework for investigating planning practices can be derived.

2.5 Concepts of planning

The objective of this section is to discuss the concepts of planning in order to seek for a framework to investigate planning practices. Section 2.5.1 discusses general views of planning. Section 2.5.2 outlines some characteristics and the intrinsic nature of planning. Section 2.5.3 discusses the process view of planning. This section discusses two concepts of planning namely the blueprint and the process mode of planning. Section 2.5.4 discusses a political process of planning, which conveys the meaning of constraint. Subsequently, a conclusion is made in this section that the process mode of planning requires an actor-oriented approach to social interface as an analytical framework to unpack the contested nature of planning process.

2.5.1 General views of planning

“Planning is concerned with where to go. However, where we are and where we have been are questions of low interest for most planners. The former task is intellectually stimulating and has captured the attention of planners and politicians.” (Jenssen, 1992: 21)

Planning practices have been central to development since its inception. Even in primitive times, the concept and practice of planning was an important part of agrarian life (Fude, undated). As the application of scientific and technological knowledge has been improved from time to time, planning lent legitimacy to, and fuelled hopes about, the development enterprise (Escobar, 1998). That is, the concept of planning carries the belief that social change can be engineered, directed, and produced at will (*ibid.*).

In organizational management, planning is defined as the process of establishing goals and a suitable course of action for achieving those goals (Stoner et al., 2000). In a simple term, planning is dedicated to contemplation of the future and preparing for the future. Therefore, planning is an integral part of development. Planning implies that one thinks through one’s goals and actions in advance and that these actions be based on some methods, plans, or logics rather than on a hunch. Plans give the organization its objectives and set up the best procedures for reaching them. In addition, plans are the guides by which (1) the organization obtains and commits the resources required to reach its objectives; (2) members of the organization carry on activities consistent with the chosen objectives and procedures; and (3) progress toward the objectives is monitored and measured so that corrective action can be taken if progress is unsatisfactory (*ibid.*).

Planning involves making choices among feasible courses of action and development possibilities. For social and economic development it aims at the best utilization of human,

capital and natural resources to meet growing demand of population. In order to arrive at the optimum exploitation of resources, the plans must take into account the greatest number of relevant factors as well as of possible effects.

As part of regional development, Jenssen (1992) argues that planning shall be seen as a result of a dialogue between public and private institutions and groups with different levels of formal organization and development objectives. For instance, in the regional context, planning is discussed region-wide with the objective to formulate a regional development consensus. The regional approach brings the understanding of development and its prospective outcome closer to the local population concerned, who are not only considered as an object of development, but as active participants.

Taking the main functions of regional development planning into account, the term of integration becomes evident which contains two aspects. On one hand it refers to the horizontal and vertical coordination of planning activities on the regional level. On the other hand it refers to the aspect of participation aimed at increasing involvement of the population at the grass root level, giving them the opportunity to take active part in the economic, social and political life of their nation as a precondition to mobilize all resources for national development. For planning agencies, participation can provide information, improve communications, and fulfill legislative mandates. It also can open up the political process, involve low income and minority citizens, and develop community organization. For citizens, participation can offer opportunities to gain representation, exercise legal and political rights, and influence policy decisions.

However, recent years have witnessed an increased in uneven participation methods employed by agencies. Private economic interests usually exercise power in planning decisions and resist efforts to share this power with others. Citizens often receive information through networks influenced by private interests and hesitate to intrude in areas involving private power. All in all, private economic interests remain the most active, organized and influential actors in planning process (Checkoway, 1986). As Escobar (1998: 140) puts it, “planning relies upon and proceeds through, various practices regarded as rational or objective, but which are in fact highly ideological and political.”

2.5.2 Characteristics and intrinsic nature of planning

As discussed above, planning carries various characteristics, distinctive features and intrinsic values. Fude (undated: 7-11) identifies them as follows;

Planning involves predictions, forecasts and projections: The shape of the future is influenced by conscious choice in the present. If the choices are to be effective, the present decision or action must be guided by adequate understanding of the future and its relationship to the present. Planning therefore calls for forecasting possible future happenings, projections or estimates of future events or conditions. Planning by its nature is for the future.

Planning is information based: Information is the basis of sound planning. Decision-making is the process of converting information into action or data into a workable plan. To arrive at a valid decision, accurate information is required.

Environment and energy are vital components in planning: The arrival of environmental awareness has added a new dimension to resources development planning. Whereas resources exploitation renders immediate benefits, it may result in adverse impacts. Future generations do have a right to make use of nature's finite endowment on the one hand, and should not be subjected to suffering from the irreparable effects of senseless and irresponsible over-exploitation of natural resources on the other.

Planning is an interdisciplinary exercise: Water resources planning embraces a very broad scope involving the application of a great many disciplines. Water planners need a broad perspective covering a variety of expertise and human endeavor so as determine how these resources can be put to the best possible use. Water resources planning can no longer be considered the exclusive domain of engineers. Engineers must learn to work with people of other professions as well as with other engineers.

Planning is a continuous process: Planning is a continuous activity, a ceaseless cycle of decision making, modification or revision. Plans should be reviewed and revised in line with changing conditions. Due to the inability to project ahead with certainty, the planner must be alert in order to react promptly. Reaction time could be speeded up by systemization of the planning process. Plans may have to be made and revised on a continuing basis.

In addition, planning is not only about the plan itself but, as we shall see in the next section, it also involves implementation and monitoring and evaluation. This gives the intrinsic value of "planning" more than just a plan but a mean to manage. Put it in other words, "no planning no management".

2.5.3 The process view of planning: management from the planning perspective

Planning means different things to different people. Traditionally, planning meant '*blueprint planning*'. Blueprint planning involves the detailed description of the desired future situation, and

the realization of this situation. Faludi (1973: 131) defines blueprint planning as an approach whereby a planning agency operates a program thought to attain its objectives with certainty. In his view, certainty means that a decision-taker is bound to execute the program according to the set objectives and that, modification during implementation is not anticipated.

As opposed to this blueprint planning approach, Brown (1966) argues that every plan is liable to come up against unforeseen occurrences or accidents during the course of implementation (cited in Taylor, 1998). This means that every plan is subject to an ongoing process of modification and adaptation. Faludi (1973) terms this approach as the '*process mode of planning*'. According to him the process mode of planning is an approach whereby programs are adapted during their implementation as incoming information requires such changes (Faludi, 1973: 132). This approach is also seen as synonymous to '*process planning*', which according to Friedman (1966) is an approach in which strategic information and feedback impinge directly on action, providing signals that lead to incremental adjustments to its direction and intensity (cited in Faludi, 1973: 132).

The process view of planning is seen as the best method by urban planners, for instance, J. Brian McLoughlin (1969), and Nigel Taylor (1998). Taylor emphasizes that process planning does not end after a plan has been formulated or finalized. A plan is usually followed by some actions. As he points out, "action or implementation is a further stage of the process of planning. Once implemented, for instance, a plan may turn out to be ineffective or it may have undesirable effects which we have not foreseen. So it is important to monitor the outcomes of our actions to check if they are having the effects we want them to have and, if not, we may need to review and revise our actions or plans (Taylor, 1998: 67)." Thus, according to his view, planning cannot be separated from implementation and monitoring/evaluation. In this sense the planner should also be responsible for implementation so that the initial plans can be adjusted on the basis of experience (Van den Hoek, 1992). This kind of iterative planning process that includes planning, implementation and monitoring is also called 'planned development' (Staveren and Van Dusseldorp, 1980). Taylor (1998) terms this iterative planning process as the process of planning or planning as a process of action.

From the above views on process planning, Taylor (1998: 66-69) distinguishes five main 'stages' in a process of planning. The diagram of these stages, which is entitled "planning as a process of action" is shown in Figure 2.1 below.

According to the diagram, the first stage is devoted to identifying some problems or goals which prompts the need for a plan of action. From an analysis of this, a definition of the problems or goals is arrived at. Notably, Taylor explains that this analysis is necessary not only to guide any empirical investigation but also because, on closer inspection, the initial perceptions of the problems and/or goals may be questionable. It may be that the problem is not really a problem at all, or that what is a problem for one group may not be for another group, or that there are additional problems that were not noticed at first and so on.

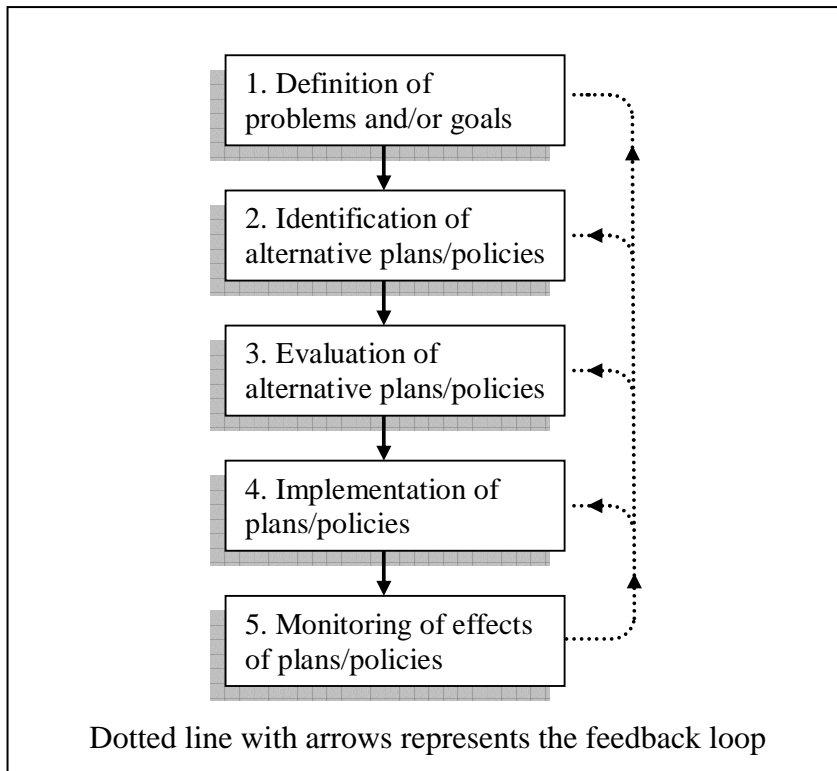
The second stage is to consider whether there are alternative ways of solving the problem or achieving the aim and, if there are, to clarify these. The third stage is to evaluate which of the feasible alternatives is most likely to achieve the desired end. At this stage, Taylor points out that, the task of evaluating alternatives in complex decision-making situations is, obviously, correspondingly complex, and therefore may require a more systematic analysis of the likely consequences of implementing any alternative. After the decision has been made, a plan or policy is produced at this stage.

However, as stated above, the process of planning does not end here but the process of planning requires that a plan or policy needs to be implemented. To this point, Taylor (1998: 68) maintains that, “it is thus more accurate to describe the process of planning as a theory or model of action, rather than ‘decision-making’.” Accordingly, implementation or action is included in a fourth stage in this process of planning. Notably, McLoughlin (1969: 101) makes an important note toward implementation/or action stage that “the action phase of the cycle is a permanent feature of planning. This does not mean that the planner must mount a 24-hour watch, seven days a week like the crew of a sailing vessel, but rather that like his fellow-cultivator, the gardener, he must pay regular and periodic attention to his changing care, pruning here, weeding there, planting from time to time, and at certain intervals taking a larger and more thorough look at the situation to see whether or not it is developing broadly along the right line.”

To complete the planning cycle the fifth stage involves monitoring the effects of the plan to see whether it achieves the desired ends.

Central to this model, feedback loops presented in Figure 2.1 below indicates that the process of planning has no final end-state. Feedback loops may return to any stage of the process. For instance, we may need to review our actions, revise our view of the problems, consider other alternatives which we did not consider before, or accept our initial definition of the options.

Figure 2.1: Planning as a process of action



Source: Adapted from Taylor, 1998: Urban Planning Theory Since 1945

The above discussion suggests that the process of planning or planning as a process of action denotes a kind of meaning of developmental management. However, one should also understand that all development activities which resulted from the planning process are embedded in a larger political sphere. Planning processes which lead to development activities are therefore also a political dynamic one. The following section discusses the political process of planning.

2.5.4 Planning as a political process

The argument that planning is a political process is that the process of planning involves political judgments and decisions. As Taylor (1998: 83) puts it “some planning theorists were alert to the political nature of planning and therefore saw that planning should not be construed purely as a technical or scientific activity.” He argues that one of the planning theorists who first articulated the political nature of planning is Norton Long (1959:168).

“Plans are policies and policies, in a democracy at any rate, spell politics. The question is not whether planning will reflect politics but whose politics it will reflect. What values and whose values will planners seek to implement? ... plans are in reality political programs. In the broadest sense they represent political philosophies ways of implementing differing conceptions of the good life. No longer can the planner take

refuge in the neutrality of the objectivity of the personally uninvolved scientist.” (cited in Taylor, 1998: 83)

Another argument that emphasized the political nature of planning is Paul Davidoff and Thomas Reiner.

“The choices which constitute the planning process are made at three levels: first, the selection of ends and criteria; second, the identification of a set of alternatives consistent with these general prescriptive, and the selection of a desired alternative; and third, guidance of action toward determined ends. Each of these choices requires the exercise of judgment; judgment permeates planning.” (Davidoff and Reiner, 1962, p. 11-12, cited in Taylor, 1998: 84)

Davidoff and Reiner point out the political nature of these value judgments by urging that a planner

“cannot, as an agent of his clients, impose his own ideas of what is right or wrong... Our contention rests on the thesis that goals are value statements, that value statements are not objectively verifiable, and, therefore, that the planner, by himself, cannot reasonably accept or reject goals for the public. This is crucial: we maintain that neither the planner’s technical competence nor his wisdom entitles him to ascribe or dictate values to his immediate or ultimate clients. This view is in keeping with the democratic prescriptive that public decision-making and action should reflect the will of the client; a concept which rejects the notion that planners or other technicians are endowed with the ability to divine either the client’s will or the public will. (ibid.: 22, cited in Taylor, 1998: 84)

Another view on political process of planning is by Preston (1996: 300):

“planning are not technical neutral exercises: they are political projects, and plans emerge from a highly complex bureaucratic context (including cultural, professional and political matters) and their deployment is again a political process of some complexity.”

The above quotations suggest that planning is inherently political. However, political process means more than just the processes by which the power of actors with high authority is exercised in the development process but the powerless ones as well (for instance, the communities who affected by the development process). As Mollinga (2008: 8) puts it “politics is a dimension or quality of many social processes, i.e. all social processes in which interests of individuals or groups are mediated.” Hence, planning as a political process can be understood as the processes

by which a wide range of concerned actors play an important role in influencing planning and development.

Green (1999) argues that planning tends to fail if the application of planning procedures is limited to only a small group of technocrats. Indeed, planning is concerned with change, and the prospect of change inevitably brings opponents and supporters. Therefore, the relationship between planners, policy makers, service managers, communities, and other stakeholders in the planning process is critical to the success of planning (ibid.). To this point Taylor (1998: 85) also stresses the need for public participation in the planning process as follows.

“The recognition that planning decisions were ‘political’ naturally implied, in any political system purporting to be democratic, that the public should have some say in, or should participate in, those decisions.”

On the other hand, Warwick (1982) points out to the success of development process by arguing that implementation should be viewed as a transactional process involving negotiation over goals and means between parties with conflicting or diverging interests, and not simply as the execution of a particular policy or plan (cited in Long and van der Ploeg, 1989).

To investigate the diverging interests in planning or in development process Norman Long (2001) suggests an actor-oriented approach which focuses on interactive relations at the interface between development agencies and affected communities. According to Booth (1994: 16), the actor-oriented approach is the key to uncovering a diversity of outcomes of planning efforts. Further, Booth (1994) continues that actor-orientation or interface analysis is the paradigm, while the discovery of variable outcomes and unanticipated consequences is the payoff.

This study, therefore, attempts to employ an actor-oriented approach of social interface in the planning process as an analytical approach to uncover the planning process of river basin management. The following section discusses the analytical framework focusing on the actor-oriented approach.

2.6 Analytical framework – an actor-oriented approach to social interface in planning

This section aims to discuss the central concepts of actor-oriented approach through which a general analytical framework can be derived and developed for guiding the analysis of the dam associated social interfaces between various actors at local, national, international and global levels. Section 2.6.1 discusses the general concepts of actor-oriented approach. Section 2.6.2 discusses the concept of agency in which the meaning of actor can be clearly defined. In this section, the meaning of knowledge and power which forms part of the concept of agency will

also be explained. Section 2.6.3 discusses the concept of social interfaces, which is an important term to analyze conflict between actors involved. Section 2.6.4 explains the concepts of arenas, which is a term used to identify the social and spatial location in which actors are engaged in conflict.

2.6.1 General concept of actor-oriented approach

An actor-oriented approach has been developed mainly by Norman Long and his colleagues at the Wageningen Agricultural University in the Netherlands as a tool for the analysis of a situation in which various actors repeatedly interact and fought over resource use in the development process. It is a sociological and anthropological type of approach which arose around the late 1960s and gained more concretized in the late 1980s (Long, 2001; 1989; 1977; Long and Long, 1992).

In 1977, Long published a book on “*An Introduction to the Sociology of Rural Development*” in which he discussed the shortcoming of two types of development theories, that is, the modernization theory and the dependency theory which were popular in the 1960s and the 1970s. Long criticized both theories as a generalized linear model of socio-economic development which accords analytical priority to the role of exogenous factors in promoting change. Long (1977: 187) argues that “neither approach gives sufficient attention to the ways in which local groups and processes can contribute and modify the patterns of regional and national development; and therefore both of the approaches tend to take too deterministic view of socio-economic change and do not allow sufficiently for the interplay of local and national forces.” Taking an anthropological stand, Long suggests the need of an actor-oriented model which focus on the process by which individuals and groups evolve ways of dealing with their changing environment. As Long argues,

“Such an approach aims to integrate both micro and macro levels of analysis, and to give equal attention to horizontal and vertical patterns of cooperation and control. It also recognizes the importance of explaining the variations in response to similar types of macro factors and of identifying the flexibilities in the pattern of pre-existing relationships and values (Long, 1977: 189-190).”

Even though Long indicated an importance of actor-oriented model as early as 1977, the concept of such model was only discussed broader during the late 1980s and early 1990s which brought the whole spectrum of discussion on interface analysis (Long, 1989), demythologizing planned intervention (Long and van der Ploeg, 1989), and the battlefields of knowledge (Long and Long,

1992), all of which are under one roof of actor-oriented approach. Further, various scholars (such as Schuurman, 1993; Booth, 1994; and Preston, 1996) have brought up actor-oriented approach in their discussion, in the 1990s, as a new direction of research on social change and development. The arguments were around the critics of structural analyses within the development theory. For instance, based on the actor-oriented approach, Preston (1996: 296) argues that, "...development theory must deconstruct notions of intervention and shift away from untenable rational models of plan-making followed by plan-execution, and grant that intervention itself is a drawn-out and complex social process involving many agents." This argument indicates that development is a contested process which requires further analysis of various actors involved.

Further, Long consolidated his previous publications and published the latest version of actor-oriented approach, entitled "*Development Sociology: Actor Perspective*", in 2001. As discussed earlier, an attempt of this approach was to deconstruct the concept of linear policy process (or what Norman Long called planned intervention) which was a dominant theoretical paradigm during the 1960s and 1970s. The concept of linear policy process was, at that time, understood as a mechanical model which assumed that the relationships between policy, implementation and outcomes are linear in process. For instance, a certain policy implementation will lead to a certain expected output. However, Long (2001) criticizes such concept as shortcoming because development process is non-linear in the sense that the outcome of development intervention is shaped by the interaction between various social groups. As Long (2001: 13) puts it, "all forms of external intervention necessarily enter the existing life-worlds of the individuals and social groups affected, and in this way they are mediated and transformed by these same actors and structures." To put it more concretely, Long (2001: 27) views intervention as "an ongoing transformational process that is constantly shaped by its own internal organizational and political dynamic and by the specific conditions it encounters or itself creates, including the responses and strategies of local and regional groups who may struggle to define and defend their own social spaces, cultural boundaries and positions within the wider power field."

His argument on intervention indicates that actor-oriented approach denotes the study of conflict between and among various actors who involved in the development process. For this reason, he adopted social interface analysis which aims to identify and analyze the critical points of intersection between different fields or levels of social organization, since it is at these interfaces that discrepancies and discontinuities of value, interest, knowledge and power are clearly revealed (Long, 2002).

Hence, this research will focus on social interface analysis which in turn will unpack how impacts of the intervention of dam building has been transformed and what factors will help in solving the issues at local level. The following section will sketch out the essential terms and concepts which are used to interpret and analyze social interface from an actor-oriented perspective. The guiding analytical concepts to this approach are agency and social actors, the notion of multiple realities and arenas of struggle where different life-worlds and discourses meet, interface encounters and interface in terms of discontinuities of interests, values, knowledge and power and structural heterogeneity (Long and van der Ploeg, 1994: 82). The first important terms and concepts which will be discussed in the next section are that of agency, knowledge and power.

2.6.2 Agency, knowledge and power

Long (2001; 1989) considers the concept of agency as centrally important in or as the point of departure for actor-oriented approach. The concept allows us to be able to identify and analyze social actors, their social relations and strategies in solving problems, and power dynamics. As we shall see in the following discussion knowledge and power are embedded in the concept of agency.

Building on Giddens' notion of agency, Long (2001; 1989) refers agency to the individual actor with the capacity to process social experience and to cope with life, even under the most extreme forms of coercion. Adding to this statement, Long argues that social actors are knowledgeable and capable. They attempt to solve problems, learn how to intervene and monitor their actions, observing how others react to their behavior and taking note of the various contingent circumstances (Giddens, 1984, cited in Long and Long 1992: 23).

In addition, however, Long adds the views of Hindess (1986) that individual actors are not the only entities that reach decisions and act accordingly but other social actors such as private enterprises, state agencies, political parties and other forms of organization may have means of reaching and formulating decisions and of acting on at least some of them.

Accordingly, Long builds up his notion of agency by incorporating the position that agency is composed of social relations and it can only be effective through social relations. However, Long warns that one must not equate agency with decision-making capacity alone. Effective agency also requires the organizing capacity to manipulate network of social relations and to channel specific items (such as claims and order) through certain nodal points of interaction. Based on Latour (1986), Long argues that the ability to influence others or to pass on a command (e.g. to get them to accept a particular message) rests on "the actions of chain of agents ...and power is

composed here and now by enrolling many actors in a given political and social scheme” (Latour, 1986; cited in Long and Long, 1992: 23).

Although, social actors tend to win or lose the struggles in particular events through network of social relations, the battle is never over since all actors exercise some kinds of power, including those who appear to be powerless (Long and Long, 1992). As Giddens puts it, “all forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors (Giddens, 1984, cited in Long and Long, 1992: 24).”

Pushing the argument further, Long advances the idea that social actor is a social construction rather than just simply synonym for the individual human being. According to him the social construction of actors touches upon the issue of two principal elements of agency identified by Giddens, that is, knowledgeability and capability. Further, Long argues that the notions of agency are constructed differently in different cultures and in different segments of the same society (Long and Van der Ploeg, 1994, in Booth 1994). Such differences underline the importance of examining how notions of agency (knowledgeability and capability) are differently constituted culturally and affect the management of interpersonal relations and the kinds of control that actors can pursue (Long and Long, 1992). This means analyzing how differential conceptions of power, influence and knowledge may shape the responses and strategies of different actors (ibid.).

According to the above discussion, the notion of agency encompasses power and knowledge due to the fact that the agency is composed of social relations, and the concept of agency signifies that social actors are socially constructed and they are knowledgeable and capable. As Long and Long (1992: 27) argue, “power and knowledge is not something which is possessed and accumulated (Foucault, in Gordon 1980) ...it emerges out of processes of social interaction...” They point out that, someone having power or knowledge does not entail that others are without. Instead, power and knowledge is regarded by Long and Long (1992) as material or concrete things possessed naturally by agents in social life. Hence, Long views the process of this reification as part of the ongoing struggles over meaning and the control of strategic relationships and resources. Long refers this to knowledge encounters which involve struggle between actors who aim to enroll others to accept their particular meaning and viewpoints. Analyzing knowledge encounters therefore could help us to look closely at the issue of whose interpretations prevail over those of other actors and under what conditions.

Finally, we can conclude that the analysis of ‘agency, knowledge and power’ could help us to identify the crucial actors, their social relation and strategy, interest, resources, their knowledge encounters and the power relations. It also helps us to identify and explain the nature and degree of social and political space associated with different types of social actors – not only the affected community but also the other intervening parties such as local and international NGOs/organizations, development agencies, and officials of government departments. The analysis therefore can throw some lights on how different actors take part and struggle in planned intervention which, according to Long, is an ongoing transformational process.

2.6.3 Social interface

Long (1989) develops social interface perspective as an analytical tool to understand cultural diversity, social difference and conflict inherent in processes of development intervention. It allows us to analyze the processes by which affected communities respond to development process and develop their strategies for dealing with new circumstances they face and therefore it shows how the interaction between intervening parties and local actors shape the actual outcomes of particular intervention policies. Social interface requires a careful analysis of the dynamics of social arenas in which struggles over resources and meaning are explicitly fought out.

In general terms, interface is defined as “a point where two subjects, systems, processes, etc. meet and affect each other (Oxford Dictionary, 1995).” From a sociological perspective, interface is seen as the dynamic and potentially conflictive nature of social interaction (Long, 1989), in which it conveys the idea of some kind of face-to-face encounter between individuals with differing interests, resources and power (Arce and Long, in Long and Long, 1992). Long terms this perspective as social interface which can be defined as “a critical point of intersection between different social fields, domains or life-worlds, where social discontinuities based upon differences in values, social interests and power are found (Long, 2001: 177).” Referring to this definition, the study of interface is concerned with the analysis of discontinuities. These are characterized by discrepancies of social interest, cultural interpretation, knowledge and power through which they are mediated and transformed at critical points of confrontation and linkage (Long, 2001: 89). As such, interface analysis reveals the dynamic and emergent character of the struggles and interactions that take place, showing how actors’ goals, perceptions, interests and relationships are reshaped by the process. However, interfaces contain within them many levels and forms of social linkage and discontinuity. As Arce and Long argue, “studies of interface should not be restricted to observing what goes on during face-to-face encounters, since these interactions are in part affected by actors, institutional and cultural frameworks, and resources that may not actually

be physically or directly present (in Long and Long, 1992: 214).” Hence, although the methodology of interface studies focuses upon specific social interactional processes, the analysis should situate these within broader institutional and power fields (Long, 1989).

In regard to the above meaning and importance of the concept of social interface, Long (1989) points out three reasons for conducting an interface approach, which are quite relevant for the analysis of this study. First, an interface approach can help to develop an analysis of planning process. That is to understand the relationships between planning, implementation and outcomes, by looking at the point at which planned intervention take place and at studying the social consequences and responses to the process. As he argues,

“Development interface situations are the critical points at which not only policy applied but at which it is transformed through acquiring social meanings that were not set out in the original policy statements. It is impossible to separate policy, implementation and outcome into watertight compartments: there is considerable seepage between them and therefore a mixing of elements such that it is often difficult to say where one stops and the other begins.” (Long, 1989: 3)

Further, he continues that:

“One solution to this problem is to concentrate research on implementation processes so that one reaches a fuller understanding of the structural dynamics and degree of freedom or room for maneuver associated with particular interface situations” (ibid.).

Second, an interface approach enables us to understand more fully the differential responses by local groups including both affected and non-affected populations. It explores how different types of communities develop strategies for dealing with new circumstances they face. It contextualizes the new types of choices generated by specific interventions within the framework of the livelihood and organizational problems faced by communities. In order to undertake such an analysis one needs to document the differential responses of particular affected community groups. This requires undertaking a set of comparisons aimed at explaining why different groups react differently to apparently similar circumstances, as well as analyzing the relations between the affected and non-affected groups, and the implementing agency. In addition, the issue of differential responses requires a much more careful mapping out of how implementing agencies and their personnel interact and present themselves to local groups and vice versa. Third, an interface approach assists us in forging a theoretical ground between the so-called “micro” and “macro” theories of development by showing how the interactions between intervening parties

and local actors shape the outcomes of particular intervention policies at regional, national and international/global levels.

Up to this point, it is clear that social interface analysis is concerned with social situations wherein the interactions between actors become oriented around the problem of devising ways of bridging, accommodating to, or struggling against each others' different social and cognitive worlds (Long, 1989). Moreover, Long (2001) points out that, interface analysis is also concerned with multiple realities made up of potentially conflicting social and normative interests and diverse and contested bodies of knowledge. Although interface interactions presuppose some degree of common interest, they also have a tendency to generate conflict due to opposing interests and objectives or to unequal power relations. Negotiations at the interface are sometimes carried out by individuals who represent particular groups or organizations. Their position is inevitably ambivalent since they must respond to the demands of their own groups as well as to the expectations of those with whom they must negotiate. One should however not assume that because a particular person "represents" a specific group or institution he or she necessarily acts in the interests or on behalf of his/her fellows (Long, 2002). Long and Long (1992) argue that it is in the field of intervention that struggles over social meanings and practices take place. Therefore, when looking at responses to development intervention one should look at who is part of the conflicts and how these conflicts are fought.

As we have seen from the above discussions, the key term for social interface analysis is conflict or what Long and Long (1992) refers to as "encounter at the interface", where more or less serious interest conflicts are being fought on the arenas. Long and Long's book (1992) entitled "Battlefields of knowledge" underlines this image or idea about contested arenas in which actors' understandings, interests and values are pitched against each other. Long and Villarreal (in Schuurman, 1993: 148) stress the importance of examining arenas that, "by analyzing arenas, interface analysis entails not only understanding the struggles and power differentials taking place between the parties involved, but also an attempt to reveal the dynamics of cultural accommodation that makes it possible for the various world views to interact." Another argument, Bierschenk (1988: 146) asserts that, "arenas of conflicts are often linked to the implementation of projects, constituting a social field where different groups compete with each other for material, symbolic or institutional resources provided by the project."

To that end, we can summarize and conclude that the analysis of social interface requires a careful analysis of the dynamics of social arenas in which struggles over resources and meaning

are explicitly fought out. In so doing, further discussion on concept of social arenas is essentially important. The following section discusses the concept of arenas.

2.6.4 Arenas

As illustrated in previous section, the concept of arenas is important for conducting social interface analysis because it is seen as “social and spatial locations where actors confront each other, mobilize social relations and other cultural means for the attainment of specific ends (Long, 2001: 59).” In this way, it allows us to identify and conceptualize what actions or confrontation taken by which actors at what social and spatial locations, for instance at local, national or international levels or at all three levels.

In simple and abstract term, ‘arena’ can be shortly described as “a place or scene of activity or conflict (Oxford Dictionary, 1995).” From an institutional analyst point of view, ‘arena’ refers to “the social space where individuals interact, exchange goods and services, solve problems, dominate one another, or fight (Ostrom, in Sabatier, 1999: 42).” This definition somewhat differs to Long’s, which according to him ‘arena’ is understood as “space in which contests over issues, claims, resources, values, meanings and representations take place (Long, 2001: 242),” or more concretely as “social and spatial locations where actors confront each other, mobilize social relations and other cultural means for the attainment of specific ends (Long, 2001: 59).”

The concept of arena can be utilized to analyze and explain social encounters or a series of situations in which contests over issues, resources, values and representations take place. In this sense, the concept of arena is especially important for identifying the actors and mapping out the issues, resources and discourse entailed in particular situations of disagreement or dispute (Long, 2001: 59). In addition, resources and strategies that actors used to support their interests, aims and dispositions will also be analyzed. Furthermore, the essence of the analysis of arena, as Long warns, is that:

“While...the idea of an arena conjures up the picture of a fight or struggle taking place in some clearly demarcated local setting, we should not assume that arenas primarily involve face-to-face confrontations and only local interests, values and contests. On the contrary, external and geographically distant actors, contexts and institutional frames shape the social processes, strategies and actions that take place in these localized settings. Furthermore, local situations, struggles or networks are, as it were, often stretched out or projected spatially as well as temporally to connect up with other distant social worlds. Very few social arenas in fact are self-contained and separate from other arenas and areas

of social life. The impact of modern communication and information technologies has been crucial here, since these allow for much more spontaneous, technology-mediated interactions of global proportions, thereby underlining the importance of developing analyses of interlocking arenas that go beyond earlier territorialized conceptions of social space based on dichotomies such as ‘rural-urban’, ‘center-periphery’, and ‘national-international orders’.” (Long, 2001: 59-60)

According to Long’s statement above, it is clear that the analysis of arena does not limit to only local actors or setting but it also takes into account distant actors and social networks which shape the social processes, strategies and actions that take place in these localized settings.

Arena is especially useful when analyzing development projects and programs since intervention processes consist of a complex set of interlocking arenas of struggle, each characterized by specific constraints and possibilities of maneuver (Long, 2001: 29). The image of arenas can also be portrayed metaphorically as a “game” in which the players (the social actors involved) come face to face and compete with each other, all playing according to different rules. In this “game” the involved players possess different interests, different levels of power and different resources or capitals, which all enable them to influence the progress and the execution of the game (Olivier de Sardan, 2005: 185; Bierschenk, 1988: 146).

The unit of analysis of arenas may include the home; the neighborhood; local, regional, national, and international councils; firms and markets; and the interactions among all of these arenas with others (Ostrom, 2005: 13). As already described in chapter 1, this study will focus on the analysis of dam development conflict or dam associated social interfaces by examining three levels of arenas at local, national and international/global. Each of the arenas will be discussed in a different chapter while keeping in mind the interrelation and inter-linkage between the three levels of arenas. The local level arena which focuses on local responses to hydropower dam impacts will be discussed in Chapter 4. Chapter 5 discusses responses in the national arena. Chapter 6 discusses responses in the international and global arenas.

2.7 Summary and conclusion

This chapter discussed two important aspects serving as a searching tool to uncover how planning process for river basin management work in practice. The first was a discussion of theoretical terms and concepts which relate to the issues of river basin management. This includes the first four sections containing the description of river basin issues followed by explanation of key terms and concepts of river, river basin and the management aspects, conceptualizing the term

development and its meaning in regard to hydropower development and discussing the concepts of planning as an introductory part to analytical concepts. The second was an identification of key analytical concepts which serves as analytical tool to unpack the planning process and to search for a better way of river basin management. This section summarizes and concludes the core notions and links them to the next chapter.

The issues related to river basin management as identified in section 2.2 are multiple in nature. They range from the pressure of water shortage and water quality degradation due to over extraction and improper use of water resources. This water stress generates an increasing tendency of conflict between upstream and downstream. One of the issues identified as important to this study is related to hydropower development. The notion of hydropower dam is that the river is blocked, particularly in upstream or at the headwaters, to store water for generating electricity through using the power of flowing water to move the turbines. While hydropower provides electricity to power industries and urban population, its consequences discussed in section 2.4 are prevailing and countless. The consequences include environmental and social impacts. This is due to the fact that the natures of river basin as discussed in section 2.3 is such a connected system in which living micro organisms, flora and fauna depend on each other and on water in both quality and quantity and in time and space. Change in flow regime in time and space could deteriorate water quality and thereby affect the system. Since human beings are part of and depend on this system for their livelihoods, they are also affected. The most likely affected population due to dam is the communities who have been living along the river and depend on river system for living long before the existence of hydropower dam. Therefore, the impacts include not only environmental and social aspects but also economic and cultural ones.

An attempt to understand what factors have facilitated such promotion of hydropower construction, the concepts of development has been extensively discussed in section 2.4. The term 'development' in this study is understood as change, process, and progress, which bring about economic growth, life sustenance, self-esteem, and freedom for a particular society or a country. To facilitate development to be sustained, the proponents of sustainable hydropower development need to be viewed as an integrated approach taking into consideration various aspects such as environmental, economic, social, cultural and spiritual well being of the people in the development planning process. Here, it is important to note that the meaning of development planning process discussed in section 2.5 is a cyclic one. Sustainable hydropower development shall therefore take into account this meaning of planning process. Its definition should be understood as a cyclical continuous process and therefore covers an endless time span. The

components of this planning process include planning, implementation and monitoring. The three components are interrelated in a cyclic manner or a feedback loop. That is, in the planning process, the plan is designed and is followed by implementation of planned activities. Since implementation involves and affects a large pool of resources and human being, the implementation scheme which is laid down in the plan rarely coincide with the reality in time and space during the process. The planning process often produces a variety of conflicts between users during the execution of development activities. Therefore, monitoring during implementation phase allows implementer/or developer to revise the plan by taking into consideration the emergence of new circumstances. After the plan is revised, implementation goes on and monitoring takes place again. In this way, such process is repeated in a cyclical manner without ending.

Although planning process shall follow the cyclical processes, development activities usually tend to be influenced by political process. In this study, political process described in section 2.5 is identified as the processes by which contested and conflicting interest between users are mediated, be they farmers, developers, or decision-makers. To unpack the political planning process which is the main theme of this study, I adopted an actor-oriented approach of social interface, which was presented exclusively in section 2.6, to study interactive relations at the interface between development agencies and the affected communities, and to uncover the outcomes of planning efforts.

The study of social interface requires two other concepts, including ‘agency, knowledge and power’; and arenas. The earlier points to the need to identify actors, and their social relation so as knowledge and power can be revealed. The later is identified as an important concept for social interface analysis since it conveys the meaning of social and spatial location of confrontation of various actors. Here, it is noticed that when analyzing social interfaces and arenas, a key term is ‘conflict’ or what Norman Long refer to as ‘encounters at the interface’, where more or less serious interest conflicts are being fought.

Finally, as explained carefully in this chapter, I apply an actor-oriented approach in this thesis conceiving the field of hydropower development as an arena or a social interface, in which contest over issues, resources, practices, knowledge and values take place. By recognizing development intervention as a social event where different social actors with different interests interact in the planning process, I seek to understand and analyze how this contest unfolds at three different arenas which in this thesis I identify as the spatial location or unit of analysis to study the interest conflicts of various actors involved in hydropower development intervention in

the Se San River basin. The three levels of arenas which identified in this study include local, national and international/global. To keep path for analysis according to this spatial scale, three chapters corresponding to this three arenas are developed. Chapter 4 focuses on local arena, chapter 5 on national arenas, and chapter 6 on international and global arenas. Although each arena is discussed in different chapter, it does not mean that the interrelation and interlink across boundary is absent but they are interrelated and dynamic.

Before delving into the discussion and analysis of the three arenas, it is necessary to discuss the general context of water resources development planning process in the Lower Mekong Basin from which an empirical experience and history of hydropower development in the Se San sub-basin can be derived. This discussion is therefore presented in the next chapter 3 which provides a basic background of various actors involved in the development intervention in the Se San sub-basin. The three chapters of arenas which discussed above will then proceed accordingly in chapter 4, 5, and 6. And finally, chapter 7 comes with the conclusion of the thesis.

CHAPTER 3

WATER RESOURCES DEVELOPMENT PLANNING IN THE LOWER MEKONG BASIN: AN EMPIRICAL EXPERIENCE FOR HYDROPOWER DEVELOPMENT IN THE SE SAN SUB-BASIN

3.1 Introduction

The Se San basin is transboundary to the Mekong River. Therefore, any development which takes place in the Se San basin is closely associated with the Mekong planning history. This chapter seeks to explore the history of the Mekong planning and cooperation from which planning process for hydropower development in the Se San basin can be derived. This chapter contains five sections. Section 3.2 provides a historical review of water resources planning and management in the Mekong basin. Section 3.3 explains the process of hydropower development in the Se San basin. Section 3.4 discusses hydropower development in the Se San basin from the Vietnamese perspective. And section 3.5 provides conclusion to the chapter.

3.2 Historical review of water resources planning and management in the Mekong River Basin

The Mekong planning history has evolved over the past 60 years from a simple Mekong project run by the United Nations to presently a complex inter-states organization called the Mekong River Commission (MRC). The Mekong planning has gone through four phases, namely the Mekong Project from 1947 to 1956, the Mekong Committee (MC) from 1957 to 1977, the Mekong Interim Committee (IMC) from 1978 to 1994, and the MRC from 1995 to present. This section will review the four phases of the Mekong planning which provides a general picture on how Mekong regime has sequentially evolved. But before discussing the four phases, I will provide an overview of geographical location of the Mekong basin which is presented in sub-section 3.1.1. This is followed by the discussion of the above four phases of the Mekong planning in four different sub-sections, 3.1.2, 3.1.3, 3.1.4 and 3.1.5, respectively. And sub-section 3.1.6 provides discussion and conclusion to this section.

3.2.1 Geographical location of the Mekong basin

The source of the Mekong River is located on the Tibetan Plateau, Qinghai Province, China, at an elevation of over 5,000 m. The Mekong River flows through six countries including southern China, Myanmar, Laos, Thailand, Cambodia and Vietnam before entering the South China Sea (see figure 3.1). Globally, the Mekong ranks eighth in terms of discharge (15,000 m³/second),

12th in terms of length (4,800 km), and 21st in terms of catchment area (795,000 km²) (see Table 3.1) (Ringler, 2001: 4).

Although the Mekong flows through six countries, the Mekong planning history includes only the four latter countries which are known as the countries of the Lower Mekong Basin. Map of the Mekong basin in figure 3.1 shows the physiographical and political divisions between the upper and the lower basins.

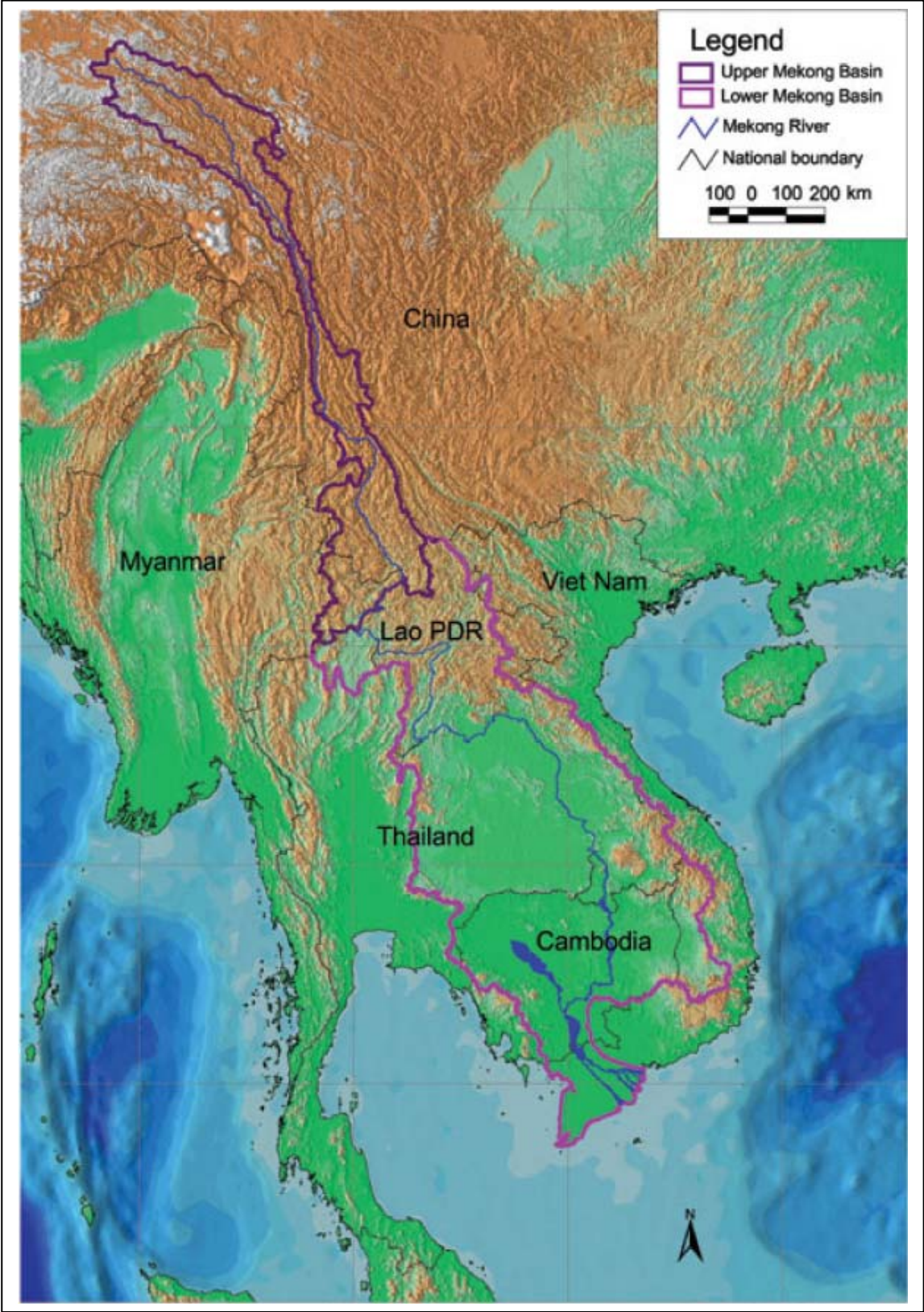
The upper basin includes China and Myanmar and the lower basin includes Laos, Thailand, Cambodia and Vietnam. In the upper basin, China contributes 16% to the Mekong flows and 21% to the catchment area while Myanmar has the lowest contribution to flows and catchment area, two percent and three percent respectively. In the lower basin, 97% of Laos territory are located in the basin sharing a quarter of the total catchment and 35% of total flows. Thailand consists of 36% of its land area located in the Mekong basin and contributes 17% of total flows and 23% of total catchment area. Eighty-six percent of Cambodia's land area is contained in the Mekong basin and the country contributes 19% of total flows. In Vietnam, the country contributes eight percent of the basin area and 11% of basin flows (see Table 3.1).

Table 3.1 Distribution of water resources in the Mekong River Basin

Country/Region	Catchment			Average flow (m ³ /sec)	Flow contribution (%)
	Area (km ²)	Share/country (%)	Share/basin (%)		
Yunnan, China	165,000	38	21	2,410	16
Myanmar	24,000	4	3	300	2
Laos	202,000	97	25	5,270	35
Thailand	184,000	36	23	2,560	17
Cambodia	155,000	86	20	2,860	19
Vietnam	65,000	20	8	1,660	11
Total	795,000		100	15,060	100

Source: Mekong River Commission, 1998 cited in Ringler, 2001

Figure 3.1 Physiographical and political divisions map of the Mekong Basin



Source: Mekong River Commission, 2003

3.2.2 The birth of the Mekong project from 1947 to 1956

Historically, the Mekong project grew from as early as 1947 when the United Nations General Assembly established the Economic Commission for Asia and the Far East (ECAFE)¹⁰ in Bangkok, Thailand. In its early work the ECAFE focused attention on flood issues, which led to the establishment of Bureau of Flood Control for the lower Mekong basin in 1949. China and Myanmar were not part of this Mekong project because during that period China was not a member of the United Nations and Myanmar was not interested in participating (Jacobs, 2002: 356) perhaps due to low physical benefits from the river's water, since the river is touching only a minor part of an inaccessible part of the country (Mekong Secretariat, 1989: 11; Öjendal, 2000: 141; Backer, 2007: 44).

In the early 1950s, the Bureau's mission was shifting from a focus on flood-related problems to addressing floods as part of a broader, multiple purpose approach to river basin planning (United Nations, 1950 cited in Jacobs, 2002). For such reason the Bureau of Flood Control and Water Resources Development was renamed.

As the focus was shifted to a wider development approach, in 1951 the Bureau started carrying out preliminary studies and field investigations on a broader aspect including technical flood control and the development of irrigation and hydropower schemes. A report of these studies completed in 1952, noted that the Mekong River offered highly attractive opportunities for the development of hydropower and irrigation schemes (Mekong Secretariat, undated). Further, in 1953 the ECAFE consultant, Yutaka Kubota, recommended hydropower development as a mean for electricity generation, flood control and irrigation (Kawai, 1984). The broadening of interest from flood control to multiple purpose use of river also led to the reconnaissance study on lower Mekong basin carried out by the United States Bureau of Reclamation in 1955 which became a basic document for planning the river's development. The report emphasized the need to collect data on hydrology, meteorology, topography, sedimentation and geology which was followed by further investigation (Mekong Secretariat, 1989).

In 1956 the ECAFE Secretariat prepared plans for a team of several international experts to investigate the Mekong basin's potential in close cooperation with the governments of Cambodia, Laos, Thailand and Vietnam, and resulted in a report, "Development of Water Resources in the Lower Mekong Basin" (ECAFE, 1957, cited in Mekong Secretariat, 1989). The report provided a conceptual framework for planning the development of the river basin as an integrated system.

¹⁰ ECAFE is predecessor to the current United Nation Economic Commission for Asia and the Pacific (U.N. ESCAP)

One of the main conclusions of the report was to call for close cooperation of the four riparian countries in data collection, planning and development through establishment of a permanent committee to oversee and coordinate further studies on the lower Mekong basin. The report stated as follow:

“It is necessary to establish an international channel or clearing house for the exchange of information and plans and the coordination of projects. The clearing agency may be a working group of experts, a standing committee or commission, as may be decided by the countries concerned. Ultimately, the process may lead to the signing of a convention and the establishment of a permanent body for the development of the basin.” (ibid: 10)

After the ECAFE report was adopted, a meeting of representatives of the four countries was held in March 1957 to consider further actions for the formation of Mekong Committee. Sub-section 3.2.3 below explains the formation and the role of the Mekong Committee.

3.2.3 The Mekong Committee (1957-1977): an era for promoting hydropower development on the Mekong’s tributaries

In September 1957 representatives of the four countries adopted the “Statute of the Committee for Coordination of Investigations of the Lower Mekong Basin”. This statute formed the basis for the establishment of the Mekong Committee (MC) for the first time in the Mekong planning history.

The statute sets forth the term of reference of the committee that:

“The Mekong Committee consisted of one member from each country with plenipotentiary authority ... to promote, coordinate, supervise and control the planning and investigation of water resources development projects in the lower Mekong basin” (Mekong Secretariat, undated: 24)

The ultimate goal of this committee was to develop the water and related resources of the basin for hydropower, irrigation, flood control, drainage, navigation improvement, watershed management, water supply and related development for the benefit of basin’s population (ibid.). Even though the committee goal was to bring a full spectrum of infrastructure development for both mainstream and tributaries, the international expert group made a strong recommendation toward development on the tributaries as an early stage of the Mekong development intervention. At that time it was understood that the development of the tributaries was regarded as the most important short-term issue because such projects could be initiated more easily since they were smaller and required much less investment and were therefore more acceptable both politically

and economically by the riparian governments (Mekong Secretariat, 1989). The United States, France and Japan were the first to make official commitment to provide international aid after the formation of the Mekong Committee.

Japan gave particular attention to the Mekong's tributary planning. In 1959 a Japanese team conducted a reconnaissance study on the Mekong's tributary which identified 16 out of 34 major tributaries of the lower Mekong basin with development potential (ibid.). The MC then made a short-list of four projects, one in each riparian country for further study and consideration. All projects were involved in multipurpose dam for hydropower and irrigation and to some extent for the purpose of flood control. Upper Se San in Viet Nam was one of the projects.

In addition to the engineering approach in the 1950s in which the tributaries should be developed first, the Mekong Committee's planning in the 1960s was also directed to include the social and economic aspects for the lower Mekong basin development (Kawai, 1984). A survey on these aspects was conducted by a small team of international consultants headed by geographer Gilbert White in 1962. The White team's report provided 14 specific recommendations that emphasized human resources development, inventories of basin resources, economic and organizational issues, flood forecasting and warning, and agricultural improvement (White et al., 1962 cited in Jacobs, 2002). The report also recommended that engineering projects be constructed on the Mekong's tributaries before mainstream projects were initiated (ibid.).

Between 1964 and 1968, the MC began programs in data gathering and moved to standardize data collection methods between the riparian countries. Studies and investigations were begun along three tracts including investment potential and engineering feasibility, social and economic aspects, and financial matters and prospects (Mekong Secretariat, 1989). The studies focused on both mainstream and tributaries' civil works on irrigation, hydropower, flood control, fisheries and navigation improvement.

Later, as a result of two decades of study efforts the MC commissioned a team of independent international consultants to prepare the Indicative Basin Plan in 1970 (Mekong Secretariat, 1989). The 690 page report which was published in the same year was the first ever master plan for the lower Mekong basin development covering Cambodia, Laos, Thailand and Vietnam. It served as a menu of water resources development projects presented to the donor nations for funding (Jacobs, 2002). Taking into consideration the planning procedure in the 1960s that the engineering projects be constructed on the Mekong's tributaries first, the master plan was designed in a way that a short-range program be initially undertaken on the Mekong's tributaries

between 1971 and 1980, and then followed by a long-range program for the mainstream from 1981 to 2000. For convenience in implementing individual projects and actions, the report of Indicative Basin Plan outlined the two distinct time spans of the plan as follows.

“The short-range plan allows for the successive implementation of independent tributary projects... to fill localized needs and meet the development objectives of the countries. It is anticipated that during the decade 1971 to 1980 the demand for power will reach the following amounts: Cambodia – 50MW firm and 97MW peaking; Laos – 25MW firm and 51MW peaking, Thailand – 1,266MW firm and 2,376MW peaking; Vietnam – 639MW firm and 1,232MW peaking.

The long-range plan, extending to the year 2000, comprises several possible sequences of mostly mainstream projects which are to a large extent interdependent and which are aimed primarily at meeting national and regional needs.” (MC, 1970: I-12 – I-13)

The report also acknowledges that the Indicative Basin Plan is a sectoral plan for which development of water and related resources of the basin was to provide essential infrastructure relating to flood control, irrigation and drainage for increased agricultural production, and hydropower for industrial and other uses (Kawaki, 1984; MC, 1970). Specifically, the 1970 plan focused much attention on hydropower production and irrigation for both in the short range and the long range (IMC, 1988). The plan proposed a cascade of dams consisting of seven major mainstream dams and some 87 dams on tributaries (MC, 1970). Though some projects have been investigated ranging from complete study and design, some tributary projects were limited to only simple desk studies due to the nature of remoteness and inaccessibility (ibid.).

3.2.4 Interim Mekong Committee (1978-1994): planning during an uncompleted member

During the mid 1970s, planning came to a halt due to political instability in Vietnam, Laos and Cambodia. Communist regimes took power in Vietnam, Laos and Cambodia. The communist regimes in Vietnam and Laos were absent from the committee in the 1976 and 1977 meetings, but returned in 1978 to work in the committee (Jacobs, 1992, cited in Öjendal, 2000: 119). The Khmer Rouge, however, made Cambodian participation impossible during 1975-1978. The result was a Cambodian absence in the Committee and a de facto breakdown of the original MC (Öjendal, 2000). To be able to continue to work, the remaining three countries (Laos, Thailand and Vietnam) signed an agreement to establish Interim Mekong Committee (IMC) in January 1978.

In the 1980s, one of the first major activities of the new IMC was to reassess the 1970 Indicative Basin Plan in the light of changes which had taken place since the plan was originally formulated. The Committee stressed the need for revision of the 1970 plan as follow.

“The 1970 plan covered a period of three decades, but the first half of this period saw a number of important changes in the region. For this reason, the Interim Mekong Committee decided that a major updating of the plan was necessary.” (IMC, 1988: I)

Consequently, the IMC endorsed a proposal to revise the Indicative Basin Plan in October 1980 (MC, 1989). The revised indicative basin plan was published in 1988 entitled “Perspectives for Mekong Development: Revised Indicative Plan (1987) for the development of land, water and related resources of the lower Mekong basin.”

Up to the date of the publication of the 1987 revised plan the IMC noted that little progress had been made to achieve the short-range plan for the tributary development particularly on the part of Cambodia and Vietnam:

“The short range plan (1971-1980) was largely carried through in Laos and Thailand, but in Cambodia and Vietnam, war and lack of money prevented much progress. The long range plan, however, remains more or less as it stood in 1970.” (IMC, 1988: XI)

For such reason the 1987 Revised Indicative Basin Plan retained the 1970 vision of a cascade of Mekong River mainstream dams, but the 1987 configuration called for smaller dams in order to reduce environmental impacts (Jacobs, 2002). While the 1987 revised plan outlined specifically on investment plan for Laos, Thailand and Vietnam covering the period from 1988 to 2000, the plan for Cambodia was totally shelved. The investment plan, however, prioritized 29 projects to be studied and investigated. Twenty-six projects are national in scope and the remaining three are international. All involve either hydropower or irrigation development or both.

The 26 national projects in the investment plan consist of five hydropower and 21 irrigation projects. There were two hydropower projects each in Thailand and Vietnam and one in Laos. The hydropower project in Vietnam included a staged development of hydropower plants of 24 MW and 480 MW respectively at Yali-Falls in the central highlands of Vietnam.

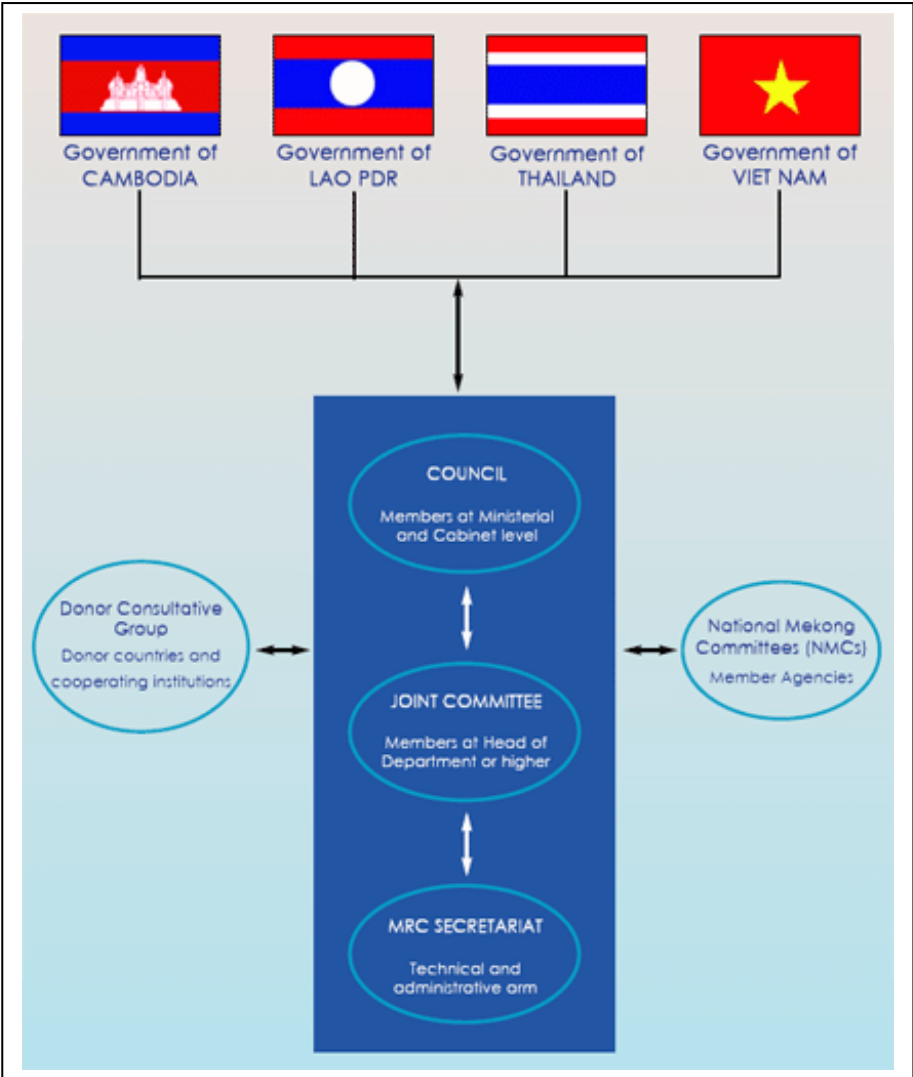
3.2.5 Mekong River Commission (1995-Present): reactivation of full committee’s members

In 1991 when Cambodia entered into peace through the signing of Paris Peace Accord, Cambodia requested readmission and reactivation of the MC. The request triggered lengthy discussion in the form of a series of meeting between the four riparian nations to discuss a new legal framework

for cooperation from 1992 to 1995. The United Nations Development Program (UNDP) assisted and supported the meeting process. Eventually a legal agreement was reached and signed by the governments of Cambodia, Laos, Thailand and Vietnam in Chiang Rai, Thailand on 5 April 1995. Since then the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin opened up a third chapter in the Mekong planning history with the new establishment of the MRC.

The establishment of the MRC articulated principles of cooperation and outlined a set of rules for reasonable and equitable use of the basin’s water resources. The agreement represents a milestone in international water resources management treaties due to its emphasis on joint development, ecological protection, and a dynamic process of water allocation.

Figure 3.2: Organizational structure of Mekong River Commission



Source: Mekong River Commission, 2006c

It also mandated a new organizational structure consisting of three permanent bodies: the Council, the Joint Committee, and the MRC Secretariat (see figure 3.2). The Council, which composed of one member from each member country at the Ministerial and Cabinet level, is the highest body within the organization and is responsible for overseeing MRC activities and directing MRC policies. The Joint Committee is responsible for implementing Council initiatives and supervising the activities of the Secretariat. The Secretariat, currently based in Vientiane, is responsible for the day to day administration of MRC affairs and for the development of implementation of MRC programs. For neutrality reason, the Secretariat is headed by a Chief Executive Officer (CEO) who is non-riparian nationality (Hirsch et al., 2006). The CEO is recruited by the Joint Committee to serve a three year term and renewal upon satisfaction by majority approval of the member countries.

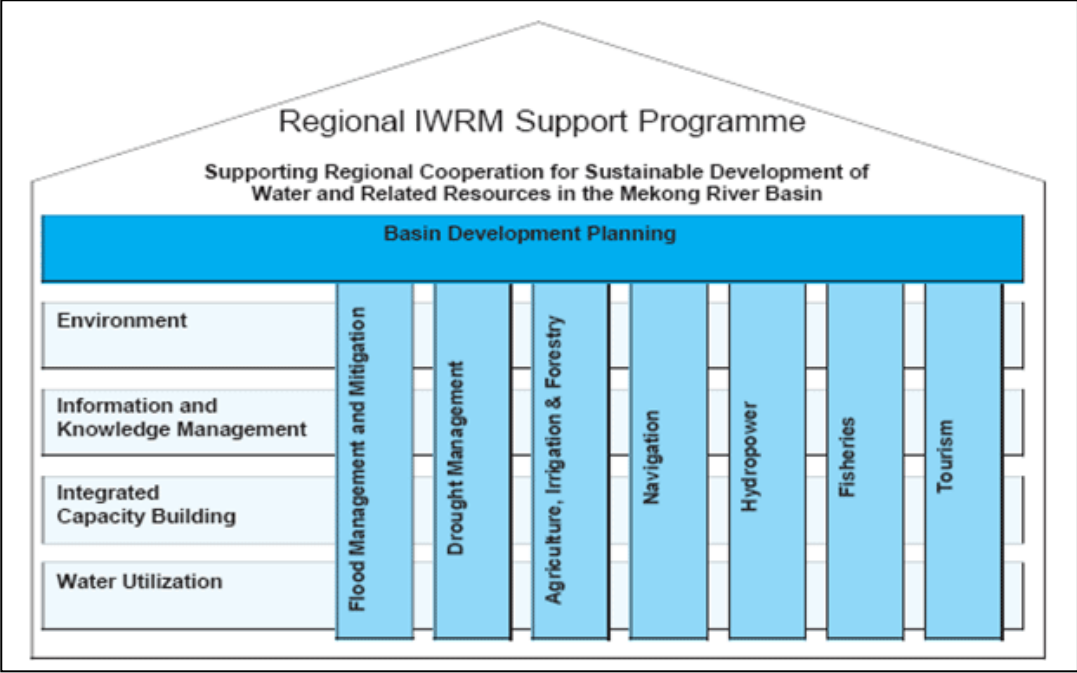
Base on the 1995 Mekong Agreement, the MRC Council approved a strategic plan in 1998 that provided direction to the 2001 Work Program (Jacobs, 2002: 261). The Work Program was divided into three areas including core, support and sector. The core program included a basin development plan (BDP), a water utilization program (WUP) and an environment program (EP). The sector program encompassed fisheries, agriculture/irrigation/forestry, water resources and hydrology, navigation, and tourism. The support program focused on capacity-building and improved financial management.

Between 1995 and 2005, the three core programs seemed to be given high priority by riparian countries and donors. According to Hirsch et al. (2006: 90), when the 1995 Mekong Agreement was signed, bilateral donors, the U.N. and development banks stood ready to increase their assistance. Some donors have chosen to direct their assistance more towards the core programs including the BDP, WUP and EP (ibid.).

The three core programs were given much attention because they were built upon a section of the 1995 legal agreement that focuses on a basin-wide development plan that is equitable (promoted by WUP) and sustainable (promoted by EP) (Jacobs, 2002: 362). The BDP produced a basinwide planning process, planning guidelines and criteria, and a basinwide list of priority projects. The WUP included hydrologic modeling, social science analysis of transboundary management issues, and institutional and human resources capacity building activities. The EP included environmental monitoring and assessment, water quality studies and studies of the link between people and aquatic ecosystems. The two core programs (WUP and EP) were intended to feed into the BDP, which according to Jacobs (2002: 361), the BDP is a key mechanism for the MRC in promoting international cooperation.

In 2006, the MRC program structure was somewhat changed to place the BDP in a top tier program (see figure 3.3) which was intended to provide the knowledge base and river science that was necessary to support planning and decision-making (Hirsch et al., 2006). The distinction of programs into core, sector and support were discontinued (MRC, 2006c). According to the MRC strategic plan 2006 to 2010, the new MRC program structure comprises Flood Management and Mitigation; Drought Management; Agriculture, Irrigation and Forestry; Navigation; Hydropower; Fisheries and Tourism. This cohesive set of programs is cross-cut by four programs in Environment Management, Information and Knowledge Management, Integrated Capacity Building and Water Utilization (ibid.) (see figure 3.3). All of these programs feed into BDP which aims to promote regional cooperation for sustainable development of water and related resources in the Mekong River Basin.

Figure 3.3 Mekong River Commission Program Structure



Source: Mekong River Commission, 2006c

3.2.6 Discussion and conclusion

Water resources planning and management in the Mekong basin was mainly driven by international donors and engineers since the birth of the Mekong project. Despite the MC and IMC operated in a context of instability such as war, changes in membership and erratic funding levels, infrastructure development such as hydropower and irrigation was put in the forefront of water resources planning in the Mekong basin. One of the most reasonable justifications for dam

building which was perceived by international engineers from the 1950s as we have seen from the above sub-sections is that dam plays an important role in reducing flood in downstream areas and increasing agricultural production through irrigation. From this perspective, a great effort of exploring hydropower potential began to grow through a number of studies funded by donor agencies from the 1950s onwards. Once a series of studies was produced, a plan was drawn to give a picture of how the development of the basin looked like. For instance, after almost two decades of studies the MC produced an Indicative Basin Plan in 1970 as the first master plan for the lower Mekong basin in history. The plan was not only seen as the outline of what was to be done in the future but as a strategic document to seek funds from international donors to bring the prioritized projects into reality. As we have seen in the foregoing sub-sections it becomes clear that hydropower development promotion was on high agenda of the MC and the IMC with the support of international donors and the influence of the work of international engineers.

With the new establishment of the MRC in 1995, the support of hydropower development became less prominent. The focus of the MRC from 1995 put more emphasis on joint development, and ecological protection through a number of programs, in particular the BDP, the WUP and the EP.

However, after 10 years of work program, the MRC was criticized as ineffective in implementing the 1995 Mekong Agreement because of the domination of national interest over the transboundary one (Hirsch et al., 2006). According to Hirsch et al. (2006: 45), “national interest in the Mekong prevails: governments maintain sovereignty over their own stretch of the river, and they invoke the discourse of national interest to legitimize development of the basin’s resources.” Hirsch et al. (2006: 45-46) saw that formal structure through which national interest represented and mediated at the MRC is very narrow. Each country has different mechanisms for negotiating, optimizing and mediating these interests and therefore the strong state usually dominates over the weaker one. One of the perceptions emerged from civil society groups is that the MRC is reluctant to protect the interest of the weak, be they sections of society vulnerable to the impacts of infrastructure development or weaker member states – notably Cambodia, whose geographical position is inherently most vulnerable to the impacts (ibid.). More striking is that the MRC Secretariat cannot act directly to resolve transboundary dispute if there is no request from the concerned member state. And if there is any request, the MRC Secretariat just plays as a facilitation and mediation role, and the decision is fully up to the concerned negotiating states. In this context, Hirsch et al. (2006) criticized the MRC as lacking legal teeth to enforce rule and regulation set forth in the 1995 Mekong Agreement.

Finally, it has also been suggested that many state actors of the riparian member states prefer the MRC to be a rather toothless organization that identifies development projects and attracts external funds, whilst the control of the development remains with the states themselves (Dore, 2003: 425 cited in Backer, 2007).

3.3 The process of hydropower development in the Se San sub-basin

As we have seen in previous section water resources planning for the Se San River took root within the planning process of the Lower Mekong Basin which had been evolved since late 1940s. Since the early 1950s hydropower development became one of the main focuses of the Mekong development history. The focus of hydropower development plan, however, has shifted from mainstream to tributaries from late 1950s onward.

In 1959, the Japanese reconnaissance team of the Mekong Committee identified 16 major tributaries as development potential involving hydropower establishment. On the Se San River the MC selected upper Se San hydropower project in Vietnam to be further investigated under the sponsorship of the United Nations Special Fund. The main focus of the plan was to stress on building a multi-purpose dam for the development of power, flood detention and irrigation of the area between Kontum, Pleiku and Yali-Falls by gravity and pumping (United Nations Special Fund, 1962: 1). The studies were conducted by a Japanese Nippon Koei firm from 1961 to 1964. The report was finalized in 1966 which indicated that there were possibilities for building a number of hydropower plants for electricity generation as well as for equalizing water flow in downstream. There were eight hydropower sites that were listed for construction (see table 3.2). Since the prerequisites were lacking for implementation of major projects, the Mekong Committee prioritized three Upper Se San projects. One of which was small scale dam project at Yali-Falls with the initial installed power capacity of 6 MW and it could be extended to 12 MW (SwedPower, 1986). The other two projects were related to irrigation development (ECAFE, 1968: 02). At that time it was foreseen that this development was to serve the local needs at Kontum and Pleiku areas. Although six megawatts hydropower was recommended, Nippon Koei envisaged large-scale Yali-Falls plant with a capacity of 100 – 200 MW if the demand was to increase in the future (SwedPower, 1986).

Even though Nippon Koei's report could only pinpoint a number of hydropower potential on the upper Se San in Vietnam it served as an input for further investigation and planning which resulted in the first master plan of 1970 produced by the Mekong Secretariat. Compared to the Nippon Koei's report which emphasized only upper Se San in Vietnam, the 1970 master plan

extended its focus to cover the whole Se San River for both Vietnam and Cambodia. The plan identified 16 possible hydropower development sites on the Se San River which included five projects in Cambodia, ten in Vietnam, and one border project (Hirsch and Wyatt, 2004: 54).

Table 3.2: Name of hydropower project listed by Mekong Committee in 1968

Name of hydropower project	Initial	Extension	Order of development	Potential power supply
Yali-Falls	6,000 kW	12,000 kW	First	100,000 kW
Yali-Falls			Second	100,000 kW
Plei Krong			Second	60,000 kW
Se San 2 (7 km downstream Yali-Falls)			Third	165,000 kW
Se San 3 (13 km downstream Yali-Falls)			Third	150,000 kW
Se San 4 (53 km downstream Yali-Falls)			Third	165,000 kW
Dak Bla			Final	28,000 kW
Se San 1 (upstream Yali-Falls)			Final	30,000 kW
Total potential power supply				798,000 kW

Source: Mekong Committee, 1968

During the 1970s the MC's short range plan which outlined hydropower development on the Se San River was hardly implemented due to political instability. However after the activation of the IMC in the late 1970s, the Mekong Secretariat speeded up the process to harness the development of hydropower dam on the upper Se San River in the 1980s. The previous plans for Se San were revised by a consultancy firm (WATCO, 1984) in collaboration with the IMC. This study identified six hydropower projects and five irrigation projects in the upper Se San in Vietnam, and three hydropower projects and one irrigation project in Cambodia (Öjendal et al., 2002). According to Öjendal et al. (2002) the WATCO study was a desk study which built on the work of the Mekong Secretariat in 1970.

Apart from the revision of the Se San plan by WATCO, the Mekong Secretariat sought funding from SIDA (Swedish International Development Agency) for the purpose of project appraisal for harnessing development of Yali-Falls dam. Consequently, the Mekong Secretariat commissioned Swedish Power Service to undertake the appraisal in May 1984. During a visit to Hanoi in June 1984 by representatives of SwedPower and the Mekong Secretariat for the project the

Vietnamese authorities requested the appraisal to be aimed at the project developing 48 MW hydropower dam comprising two phases with 24 MW developments in each phase. SwedPower accepted the modified terms in order to comply with the wishes of Vietnamese authorities. At the same time the Mekong Secretariat confirmed that these modified terms shall be valid in the relationship between the consultant and the Client. This shows that Vietnamese authorities had a strong influence of decision making on hydropower development on the Se San River.

Later in 1989, the Vietnamese Ministry of Energy envisaged a large hydropower plant of 700 MW at Yali Falls. A feasibility study on the Yali Falls dam was concluded in 1990 by the Vietnamese Ministry of Energy with assistance of Nippon Koei Co. Ltd. In connection to this the Mekong Secretariat undertook several appraisal missions to Vietnam to assess the feasibility study in 1990 and 1991. The assessments showed that the feasibility study had only lightly touched on environmental topics and that further detailed investigations would be necessary within the framework of an environmental impact assessment in order to make the project acceptable to international financing institutes. The Mekong Secretariat then prepared a project description and submitted to donor countries for funding. Switzerland, as one of the supporting countries of the Mekong Secretariat, undertook the financing of the environmental and financing studies through the Mekong Secretariat. Swiss Electrowatt Engineering Services Co. Ltd. was contracted and the studies entitled “Environmental and Financing Studies for the Yali Falls hydropower project” were conducted in 1991. The construction of the Yali-Falls dam was then smoothly preceded without any further requirement or objection in November 1993.

As we have seen from the above description, the Mekong Secretariat was playing an important role as an intervening agency for water resources planning in the Se San River basin from the early 1960s till the early 1990s. And the main agenda for the water resources planning in the Se San River was mainly related to hydropower development. Since Yali Falls project is located in Vietnam, the nature of project harnessing was also triggered from the Vietnamese internal development policy. To understand the context of this development policy the following section explains how hydropower development in the Se San River has placed an important agenda in Vietnam particularly from the end of the 1980s onward.

3.4 Hydropower development in the Se San River: from Vietnamese perspective

3.4.1 The role of Se San River in economic development trajectory in Vietnam

Vietnam stretches over a distance of about 1,600 km in an S-shape along the eastern coast of the Indochinese Peninsula. The total land area is 329,566 km² of which 75% consist of mountain and

hills. This exhibits a large hydropower resources potential of more than 2,200 small, medium, and large rivers (Luy, 2008). Geographically, Vietnam is divided into three regions namely the north, the south and the central. Two large rivers run through Vietnam. The Red River originates in the Tibetan highland and flows through Vietnam in the northern region while the Mekong River flows through its southern region before entering the South China Sea. The central region hosts the origin of one of the largest Mekong's tributaries, Se San River. This river merges with the Mekong's mainstream in Stung Treng Province of Cambodia. Historically, rivers play an important role as part of Vietnamese economic development including agriculture, navigation and hydropower.

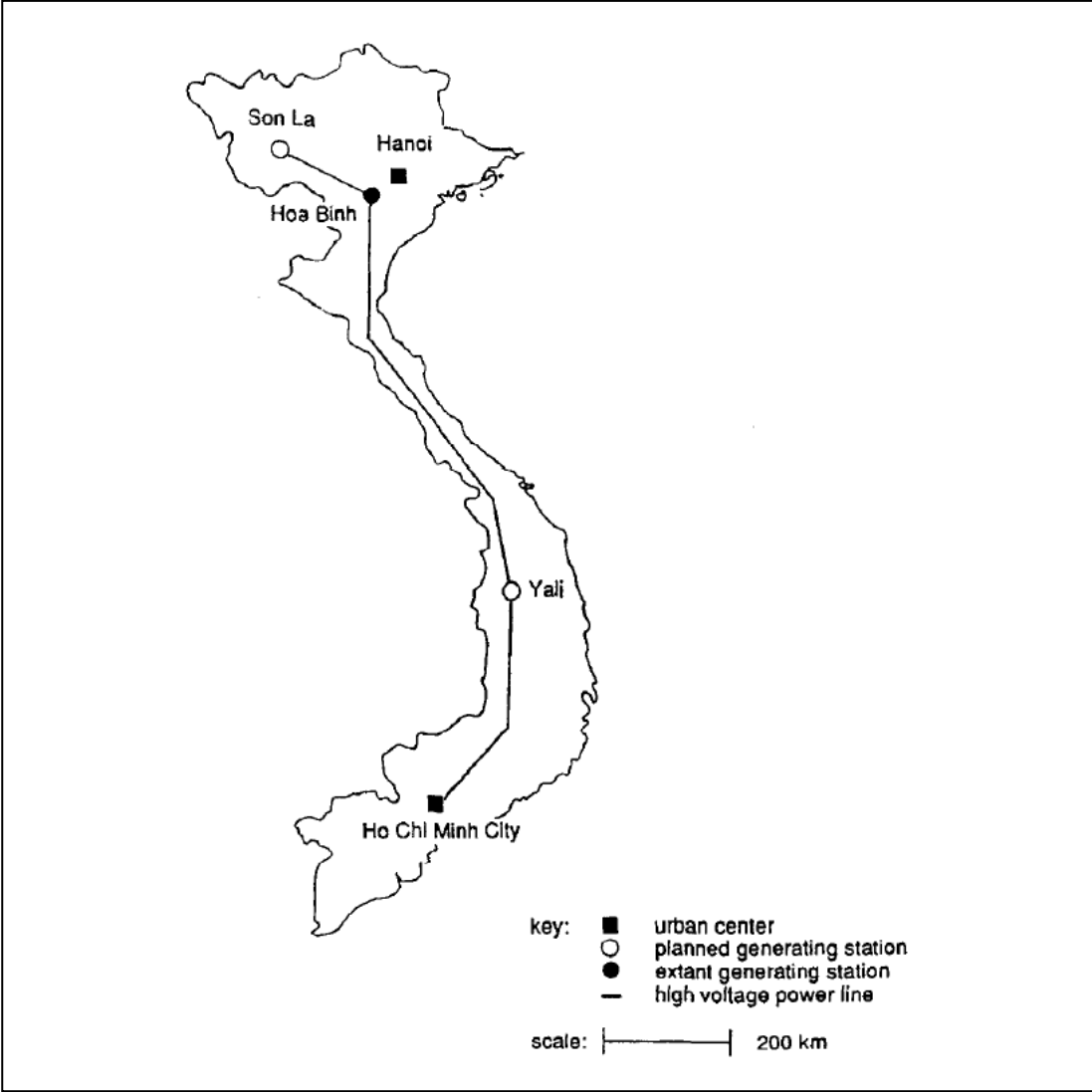
In mid -1980s Vietnam began economic policies reform to promote economic development and social welfare. The reform transformed Vietnam to a market base socialist economy under the reforms of Doimoi (renovation thinking) which paved the way for private sector investments, both domestic and foreign into its economy in 1986 (Wyatt, 2002). With this reform the Vietnamese government hopes that this liberalization of Vietnam's economy will lead to a strong economic development. Accordingly, the Vietnamese government set the target rate of growth for industrial output – the main determinant of electricity consumption – to nine percent for the 1991 – 1995 periods (Electrowatt, 1993). Due to the development of the industrial sector and social services the actual growing electricity consumption rose on average by 12.6% annually between 1990 and 1995 (Wyatt, 2002). The high rise of electricity consumption placed Vietnam in a position of power crisis nationwide in the early 1990s. In the central and particularly the southern regions the shortage of electricity was felt strongly (Electrowatt, 1993). According to a survey conducted by England and Kammen (1993) the industrial sector and household users in the southern region struggled through electricity blackouts that extended over 3-4 days of the week.

Although in the north the Hoa Binh hydropower was under construction with an installed capacity of 1,920 MW of which 820 MW were generated in 1991, and in the south the Tri Anh hydropower with installed capacity of 400 MW was commissioned in 1989, the central and southern region were lacking sufficient power supply (Electrowatt, 1993). Consequently the Vietnamese government has adopted the policy to meet the growing demand by developing the hydropower potential of the country estimated at about 300 TWh/year (ibid.).

In Vietnam three river systems were identified as the most important source for hydropower generation including the Da River in the north, the Se San in the central region, and the Dong Nai in the south. While the generating potentials of the Da and Dong Nai Rivers are 6,258 MW and 2,500 MW, respectively (England and Kammen, 1993), the Se San River stands at the third range

with the total capacity of 1,796 MW from six hydropower projects (see table 3.3). In the Se San River basin, the site of Yali-Falls has been identified as a very promising location for the construction of large-scale hydropower scheme in the end of the 1980s. As mentioned in previous section Vietnam government has reconsidered the potential of the development of the Yali-Falls dam from 48 MW which were supposed to be developed in the mid 1980s to 700 MW in the end of the 1980s in order to relieve and eradicate the power shortage. The plan in the early 1990s was to connect the power grid from major hydropower plants in the northern region (future Son La 3,000 MW and the existing Hoa Binh 1,920 MW) to the southern region through the Yali-Falls hydropower plant in the central region (see figure 3.4). The aim was to bring the excess power supply from the north and the central regions to feed the demand of the industrial zone in the southern region.

Figure 3.4: Map of planned hydropower stations and the location of the proposed North-to-South 500 kV high-tension power line in Vietnam (in the early 1990s)



Source: England and Kammen, 1993

3.4.2 Status of hydropower development in the Se San River

Hydropower sources envisaged by the Vietnamese government to be exploited with the highest priority are the upper reaches of the Se San River in the Central Highlands which due to its mountainous environment has many rapids and falls, where suitable locations for hydropower development were identified on the river. The total capacity which Vietnam could tap from Se San River is estimated at about 1,796 MW from six hydropower projects (see table 3.3). This figure contributes almost nine percent of total proportion of hydropower potential in the entire country if all are to be developed. Below I describe the six hydropower projects under three subsections including hydropower projects in operation, hydropower projects under construction, and hydropower power projects under planning. In addition to the six hydropower projects, a re-regulatory dam located near the border between Vietnam and Cambodia was also constructed to regulate flow downstream.

Hydropower projects in operation

Yali-Falls dam: As mentioned earlier the Yali-Falls dam is the first dam which Vietnam began to construct on the mainstream of Se San River in November 1993. The Yali-Falls dam is located just downstream of the confluence between Krong Poko and Dak Bla rivers, the two major tributaries of the Se San River (see figure 3.5). It is located approximately 70 km from the border of Cambodia. The dam has an installed capacity of 720 MW. It is the third largest hydropower in Vietnam after the 3,000 MW Son La and the 1,920 MW Hoa Binh dams in the northern region.

The Yali Falls dam's reservoir was completed and filled in May 1998. The first turbine trial run took place in late February 2000 (Raksmey Kampuchea News, 2000) and its first official turbine operation began only in June 2000 while the rest three turbines followed in January 2002 (SWEKO, 2007).

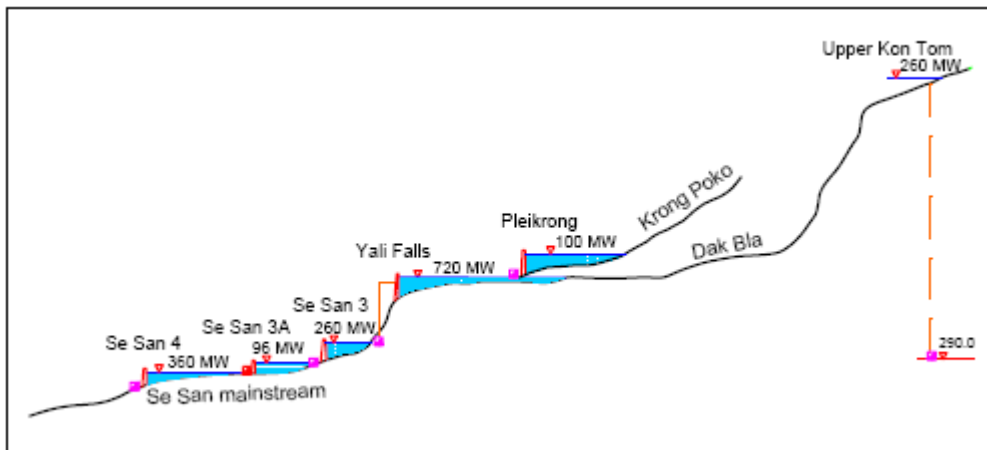
Se San 3 dam: The Se San 3 is the second dam constructed on the Se San River. The construction of the dam started in May 2001 and completed by the end of 2005. The total capacity of this dam is 260 MW. It is located 15 km below the Yali-Falls dam. The first trial run took place in April 2006, and the plant was commissioned in June 2006 (ibid.).

Se San 3a dam: Following the second dam Vietnam began constructing the third dam (Se San 3a). The construction of Se San 3a dam started in January 2002. It is located about ten kilometers downstream of Se San 3 dam. This dam has an installed capacity of 96 MW. By the end of 2005 the dam was finished. The first run took place in May 2006 and final completion was in September 2006.

Hydropower projects under construction

Pleikrong dam: The construction of the fourth dam “Pleikrong” commenced in December 2003 with total capacity of 100 MW. The dam is located on Krong Poko River some three kilometers upstream of the confluence with Dak Bla River (see figure below). The planned date for completion of this dam is unknown.

Figure 3.5: Cross section map of hydropower dam cascades on Se San River in Vietnam



Source: Adapted from PECC 1¹¹

Se San 4 dam: Se San 4 is the fifth dam in range of construction which began in April 2004. It is located close to the border between Vietnam and Cambodia, and some 22 km downstream of Se San 3a dam. The installed capacity of this dam is 360 MW. The planned date for completion of this dam is unknown.

Hydropower projects under planning

Upper Kontum dam: Presently, Upper Kontum dam project is under feasibility study. This dam is planned with the installed capacity of 260 MW. The location of this dam is at the most upper part of Se San River (see figure 3.5).

Se San 4a Re-regulatory dam: In order to regulate water flow and mitigate water fluctuation in downstream Cambodia, Vietnam constructed a re-regulatory reservoir dam, called Se San 4a, located approximately five kilometers downstream of Se San 4 or one kilometer from the Cambodia border. The reservoir dam is expected to be put into operation before the rainy season of 2008 (Cambodia-Vietnam Joint Committee, 2008). However, the future status of this dam is becoming unclear since the reservoir of this dam has a potential to put forward hydropower plant

¹¹ This cross section map was collected from Vietnam Power Engineering Consultant Company 1 (PECC 1) during the author’s field work in Hanoi (Vietnam) in January 2007

with the installed capacity of 60 MW. According to Luy (2008: 6), Se San 4a is one of the seven hydropower projects which is under study and planned for use in 2015.

Table 3.3: Dams on Se San River in Vietnam territory

No.	Dam name ¹²	Distance from Cambodia border (km) ¹³	Generating capacity	Begin date of construction	Begin date of operation
1	Upper Kon Tum	-	260 MW	Feasibility study	
2	Pleikrong	~ 90	100 MW	Dec. 2003	Not yet
3	Yali Falls	~ 70	720 MW	Nov 1993	1 st turbine: 06. 00 All turbines: 01. 03
4	Se San 3	~ 55	260 MW	May 2001	06. 06
5	Se San 3a	~ 45	96 MW	Jan. 2002	09. 06
6	Se San 4	~ 6	360 MW	Apr. 2004	Not yet
7	Se San 4a	~ 1	None	Nov. 2004	Expected before the wet season of 2008
Total			1,796 MW		

Source: Adapted from SWECO, 2007

3.5 Conclusion

The attempt of this chapter was to review how water resources planning and management in the lower Mekong basin has an implication or influence on hydropower development on the Se San River. This chapter found that hydropower development planning in the upper Se San River in Vietnam involves an array of actors, not only nationally but internationally and globally. The initiative for hydropower development was initially influenced by the Mekong project that was established by ECAFE of the United Nations. The Mekong project was the point of departure to bring the four lower Mekong basin countries namely Cambodia, Vietnam, Thailand and Laos to come into cooperation for water resources management of the Mekong. It was the first time in history in which state cooperation on the management or sharing of the waters of the Mekong was formed in Southeast Asia during the 1950s (Hirsch et al., 2006: 80).

Although cooperation between the four lower Mekong countries has been largely steered and engineered by externals such as the U.N, U.S, and donors since the creation of the MC in 1957, it is also valid to argue that a group of international engineers and experts was also largely influencing the water resources development and planning in the Mekong basin as well as

¹² Dam name is orderly listed from upstream to downstream

¹³ Source: RCC, 2007a

hydropower development process of the Se San River. Without international engineers and experts who were contracted to support the Mekong project in the 1950s, the MC would not have existed because they served as agents to bring the concerned authorities of the four lower Mekong countries to come into relation to discuss and negotiate the establishment of the committee.

With the support of the MC and IMC from 1957 to 1991, hydropower development planning for the upper Se San River had gone through a long process of investigations and studies. The dam development came to light only from the mid 1980s when a series of financial support were made available to Vietnamese government through the IMC. For instance, through this committee, SIDA financed a study of the Yali-Falls power station in 1985, and Swiss government contributed to fund environmental and financing studies of the Yali hydropower project in 1991. This clearly shows that the IMC and the donor countries (Sweden and Switzerland) were the key promoters to push the construction of the Yali-Falls dam.

This chapter also reviewed the role of the MRC in regard to water resources management of the lower Mekong basin. Although the MRC did not play a key role in promoting hydropower development as its predecessors (the MC and the IMC), it was criticized as an inactive body in regard to conflict resolution. Hirsch et al. (2006: 120) gave their claim as follows.

“the MRC’s direction intervention role in conflict management remain unclear. What is clear is that aggrieved parties sometimes expect the MRC, being a transboundary river management agency, to step in when water-related transboundary conflict occur. In many cases, these expectations may exceed what the MRC sees as its role. Se San is a case in point. Civil society groups assisted indigenous minority in Cambodia who were affected by upstream hydropower development in Vietnam, to request direct intervention from the MRC. The MRC’s response was that it could not act directly on a non-governmental request. It did, however, help set up an only marginally-effective intergovernmental committee, but that was the extent of its intervention.”

In addition, some describe the 1995 Mekong Agreement as weak, allowing the members to interpret it as they please or simply sideline it (Backer, 2007; Lebel et al., 2005).

Besides exploring how planning process shaped hydropower development intervention at basin level, this chapter linked the issue to analyze the development policy of energy sector in Vietnam to understand how Vietnam has placed Se San River in its hydropower development agenda. To this end, this chapter found that the increasing demand for energy consumption was one of the

main factors, which contributes to the acceleration of hydropower development in the Se San basin in Vietnam.

The negative effects of hydropower development, as I discussed in chapter 2, are countless and usually result in conflict between downstream and upstream users. How various social actors act or respond to the effects of dam development and influence over one another require an analysis of interaction of social actors at various levels. In the following chapter I will analyze how social actors interact at local level in response to the effect of Vietnamese dam development in the Se San River.

CHAPTER 4

LOCAL ARENA: STRUGGLE THE BATTLE – SUCCESS VERSUS CHALLENGE

4.1 Introduction

This chapter is aimed at analyzing and explaining local level contestations over hydropower dam impacts. This chapter contains eight sections. Section two begins with the analysis of differences in viewpoints regarding hydropower dam impacts. The aim is to discover the contradicting views of various actors with regard to hydropower dam impacts so that discrepancies of social interests and cultural interpretation can be revealed.

Section three discusses local coping capacity, knowledge and problems encountered by affected community. The aim is to understand to what extent the affected community can cope with the changing condition of the river system, what knowledge they have acquired in order to cope with the changing condition, and what problems they have encountered. Section four discusses the emergence of responses of non-governmental organization in to dam impacts. The aim is to discuss what actions have been taken by NGOs.

Section five discusses the formation of local organization as a social construction for advocating change. The aim is to discuss how local organization was formed and with what structure, and what is its roles in regard to hydropower dam development. Section six discusses the local organization's strategies and choices. The aim is to analyze how power, influence and knowledge may shape the responses and strategies of local actors. Section seven discusses the outcomes and consequences of local organization. And finally, section eight presents the conclusion of the chapter.

4.2 Hydropower dam impacts: differences in viewpoints

This section discusses different viewpoints of various actors in regard to hydropower dam impacts caused by the Yali-Falls dam. The important actors who engaged in the dam impacts include the affected communities in Ratanakiri province, various non-governmental organizations, Cambodian government agencies and Vietnamese government agencies. The aim of this section is to discover the differences in views of various actors so that discrepancies of social interests and cultural interpretation can be traced. This section divides into three sub-sections. Sub-section 4.2.1 discusses the perspective of different local communities on dam impacts. Sub-section 4.2.2 discusses other viewpoints on local impacts. Sub-section 4.2.3 provides a concluding remark to this section.

4.2.1 The perspective of riverbank communities

The riverbank-villagers living in two upstream districts (Oyadao and Andong Meas, see map in figure 1.2 on page 14) experienced the impact of hydropower dam development as the impact of several intense floods that struck their villages as early as September 1996. The riverbank-villagers describe the 1996 floods as the worst tragedy in their life. Riverbank-villagers in Oyadao district recall the situation that “our village has never been flooded as the river is steep and riverbank is high from water, but 1996 floods brought our village under water as high as two meters.”¹⁹

During the 1996 floods the riverbank-villagers were not aware of Yali-Falls dam construction and at that time, according to their ethnic cultural belief, they assumed that floods were caused by the angry spirit of the water. The riverbank villagers in Andong Meas district describe that “after the excessive floods, our villagers gathered and held a ritual ceremony to worship the river water by sacrificing buffaloes and wine to say pardon and get excuse from the water spirit, but, long after the ceremony we observe more changes in river water such as fluctuation, surge and dirty water.”

After the 1996 event, the riverbank-villagers started to search for information regarding the changes of river water particularly from the community living upstream in Gia Lai province which located just downstream of Yali-Falls dam in Vietnam. The Jaray community living in Oyadao and Andong Meas districts, who often get in touch with their ethnic fellows in Gia Lai province for reason of commodity exchange reported that floods were caused by large-scale dam construction in Vietnam, and that, is the “Yali-Falls dam”. The information was circulated within the community that the dam constructor used poor Vietnamese cement instead of the Japanese’s cement which then caused the dam to break and flooding downstream.

After realizing the dam impact the riverbank-villagers in Oyadao and Andong Meas districts stopped holding ritual ceremonies for worship the river water spirit. They particularly say that “we stopped holding our cultural ceremony (traditional sacrificing of animal and wine to the spirit) because the river flood was not caused by an angry spirit but was caused by bad behavior of human activity which releases dirty water from the upstream dam and affects us.” Such cultural belief and practices were also abandoned by riverbank-villagers in downstream districts of Taveng and Veun Sai, which became aware about dam impacts after the flood event in February 2000.

¹⁹ Quotes in this chapter are taken from field notes and interviews in Ratanakiri province from 01 July to 30 October 2007

Riverbank-villagers claim that flooding used to occur in the Se San basin before the construction of Yali-Falls dam but that the nature of floods has changed over the past ten years. On average, floods used to occur once every six to seven years and usually happened only a few days during the high peak of the rainy season. Riverbank-villagers claim that this type of flooding was often favorable, since floods were not very high and did not cause damage to crops. Instead this short-term flooding helped deposit fertile soil in crop lands which often increased yields. However, over the last ten years the situation has been rapidly changing. Unexpectedly, floods have sometimes occurred at the end of rainy season. Moreover, riverbank-villagers have observed that water levels rise much quicker than before and often they can no longer predict flood according to their traditional methods and beliefs. The riverbank-villagers in Andong Meas district state that “in the past we predicted flood based on rainfall which we traditionally observed, and based on observation of nature such as wild animals’ and insects’ behaviors but now we can no longer do that because flood is not only caused by rainfall but by water release from hydropower dam too.”

Besides flooding, riverbank-villagers maintain that the hydropower dam has intensified water level fluctuation in the river. Riverbank-villagers report that fluctuation of water level may now occur daily and sometimes hourly, the fluctuation ranging from half meters in the dry season to two meters in the wet season. In the upstream part at Oyadao district, riverbank-villagers claim that water usually rises early morning and declines in the afternoon but sometimes it is the other way around. In the downstream portion at Veun Sai district the riverbank-villagers maintain that water rises in the evening and declines at noon. However, they claim that it is hard to predict and generalize when water goes up and goes down. Sometimes water rose and dropped in one to seven days intervals. Such uncertainty made them fearful in crossing the river by their small boats between their village and farmland. It also makes their fishing activity harder due to uncertainty of daily water level fluctuation. A fisher in Taveng district reported that “the fishers in our village can no longer depend on river for fishing because of water fluctuation; sometimes our fishing traps or fishing hooks which we deployed under water before evening appear above water level the next day; and sometimes they are washed away by a strong current of water flow.”

The riverbank-villagers also claim that water level fluctuation has stopped them from gold panning in 1998. As claimed by them, gold panning used to be one of their important activities for extra income during the dry season particularly for the community residing in Taveng and Andong Meas districts. The riverbank-villagers said that “we stopped gold panning as early as 1998 because water level fluctuation had frequently filled in the hole that we dug for gold panning and more importantly we were increasingly fearful of unknown water surge.”

Furthermore, riverbank villagers also confirm that water level fluctuation has been causing serious riverbank erosion compared to the past 15 years or so. Many hectares of farmland fell into the river through bank erosion and many houses were shifted away from the bank for safety reasons. In Andong Meas district, three villages had been heavily affected by bank erosion within the scale of ten to twenty meters bank encroachment including Talav, Kanat and Bokham villages. Similarly, seven villages in Taveng district have also been seriously affected by bank erosion including Ke Koung, Phayang, Siand Sai, Phao, Tompoun Reung Toch, Tompoun Reung Thom and Tagarch villages. Likewise, riverbank villagers in Veun Sai district claim that four to ten meters of bank erosion is common in most villages.

Apart from water level fluctuation, the riverbank-villagers observe that the river water has turned turbid all year round. They said that river water used to be very clear in the dry season before the dam was constructed but over the last ten years water is more turbid and sometimes smells badly. The riverbank-villagers state that this water condition has been causing serious human health problems after bathing and drinking, such as itchiness, rashes, vomiting, and diarrhea. In some cases, they said that dirty water has poisoned and killed many fishes as in the past few years they used to see many dead fishes floating down from the upstream river. They also claim that the drinking of turbid water has been causing their animals to die, such as chickens, pigs, cows, and buffaloes. Presently, most villagers use pump-wells which have been installed, in some riverbank villages, by German Agro-Action (GAA) during 2005. Many of them do not satisfy using water from wells as their home is situated far away from the center point where the pump-well was generally installed. They also express discontent of using well water because their cultural sense of using river water has been changed. The riverbank villagers in Taveng district strongly argue that “we are happy when we use river water for bathing because we can swim in river but well water cannot give us a swim. However, pump-well is good and saves our life when river water turns dirty.” River bank villagers also claim that natural vegetables and plants that they used to harvest freely from the riverside have disappeared due to poor water quality and water level fluctuation.

4.2.2 Other viewpoints on local impacts

Based on the above presentation, this sub-section discusses the contradicting views of various actors according to several themes, including differences in viewpoints on occurrences of unusual floods, consequences of floods and the level of destruction, water level fluctuation, bank-erosion, impact on fisheries, water quality and health impacts, and the dry season flow.

Occurrences of unusual floods

While riverbank-villagers in Cambodia believe that dam impact begun in 1996 after several intense floods hit their village, the Vietnamese officials refused to accept the local claims by claiming that the Yali Falls dam had not been completed and that the reservoir had not been closed and filled by September 1996. For instance, a Vietnamese official stated that “the 1996 floods were caused by extreme weather conditions known as tropical cyclone centered on the Se San basin which generated and prolonged heavy rain and then overflowed the riverbank” (Interview 3.1.3). The official maintains that “the Yali-Falls dam reservoir had not yet been filled-up until 1998 therefore there were no reasons that floods resulted from dam construction.”

The hydrological assessment conducted by the International Development Research Center and UNDP service project in Ratanakiri province led by Himel and Nhem in 1997 confirms that a tropical cyclone occurred in September 1996, but floods still continued to happen several times till November 1996 without cyclone effect (Fisheries Office, 2000: 10). In 2000, the Ratanakiri Fisheries Office led by the Non-Timber Forest Product Organization (NTFP – a local NGO supported by Oxfam America) conducted an impact study which concluded that an excessive water discharge was released from the dam to avoid Kon Tum town of Vietnam from flooding when there was an extreme flood in 1996. The conclusion was drawn based on the Environmental Impact Assessment (EIA) report for the Yali-Falls dam conducted by the Swiss Electrowatt company in 1993 which warns that “if water levels in the reservoir are allowed to reach high peaks, there is a risk that flooding could occur in Kon Tom town” (Fisheries Office, 2000).

The Cambodia Ministry of Water Resources and Meteorology (MOWRAM) was reluctant to confirm that the 1996 floods were caused by the construction process of Yali-Falls dam due to lack of basic data and information. As a Cambodian official put it, “it is very difficult to judge whether the 1996 floods were caused by dam construction because during that period we did not have hydrological and meteorological stations to record data for analysis; so we do not have the basis for such claim” (Interview 1.2.4). The official confirmed that 1996 was an extreme flood year which also prevailed in the Mekong Basin.

In addition to the 1996 floods, a provincial official argued that floods continued to occur several times annually till 2003 but considerably large floods occurred in 1999, 2000 and 2001 (Interview 4.2.5). The rest of the floods were considered to be less severe or mild, and included floods in 1997, 1998, 2002 and 2003 (ibid.). According to the Fisheries Office’s report (2000), in 1997 and 1998, rainy season flooding occurred twice each year in lower parts of Veun Sai

district, while in 1999 some villages reported being flooded three times over two meters high inside the village. Moreover, the duration of floods has been longer in the lower parts of the basin. While 1999 floods in Andong Meas lasted for only three days, they occurred for over a week in Taveng, and for over 20 days in some villages in western Veun Sai (Fisheries Office, 2000).

Consequences of floods and the level of destruction

Ratanakiri Fisheries Office in association with NTFP are the first two agents that have jointly done a comprehensive study on Yali-Falls dam impacts in Ratanakiri Province in 2000. The report states that there were at least 32 people killed by water surge and floods from 1996 to early 2000. During the same period, Ratanakiri Water Resources Department conducted a short field survey in two districts, Andong Meas and Taveng, taking into account the destruction of floods caused by the dam in 1999 and early 2000. The report, which was also acknowledged by the provincial governor, found one person dead in Andong Meas district in 1999 and six people dead in Taveng district in early 2000 as a result of surges and floods caused by water release from Yali-Falls dam. Another source which reported on dam associated death cases is the *Phnom Penh Post* (an English language Cambodian Newspaper). In its issue 9/6 of March 17-30, 2000, five Cambodians were reported killed by surges during testing of Yali-Falls dam's spillway in the dry season at the end of February 2000 (Phnom Penh Post, 2000b). The Vietnamese official recognized and accepted the February 2000 tragedy as the only flood event which was caused by a technical error of dam spillway testing (Interview 3.1.3).

While Vietnam official asserts that flood caused by Yali-Falls dam occurred only once in 2000, NTFP and its financial supporter, Oxfam America, claim that dam impacts have occurred since 1996. In its study, Oxfam America estimates an annual income lost of the affected communities to the amount of 2.5 million U.S dollars for 3,434 households in Ratanakiri Province from 1996 to 1999 (Oxfam America, 2001). This figure corresponds to a drop of average monthly income from US\$ 109 to US\$ 46 per household (ibid.). In addition, this report also claims other tangible losses – including lost fishing equipment, boats, livestock, housing, and rice stocks – to the amount of US\$ 800,000. Other non-quantified impacts were also listed in this report, which included deaths and illness, livestock deaths due to suspected water quality problems, and other natural resources impacts. Table 4.1 below shows a summary of key impacts caused by the Yali-Falls dam, which were found by Oxfam America in 2001.

In regard to the findings of the report, the Vietnam official seems to claim that the figures tend to be exaggerated. For instance, the Press Attaché for the Embassy of Vietnam in Phnom Penh responded, to a question regarding drowning of more than 30 people which was documented in the Fisheries Office report, that “all the things you have just mentioned must be studied carefully, because there can be many reasons for drowning and loss of life, not just floods. I do not object to the fact that the floods caused some drowning, but not all of them” (Watershed, 2000a).

Table 4.1: Key impacts caused by the Yali-Falls dam as found by Oxfam America 2001

Impacts quantified	
Impact category	Losses for 3434 households in 59 villages
Livelihood impacts caused by annual flow changes and sudden flooding from dam water releases (1999)	2398.5 ha of paddy and swidden rice
	86% reduction in fish catch
	54% reduction in vegetable garden (and tobacco) yield
	100% loss of gold panning revenue
Livestock deaths caused by sudden flooding from dam water releases (1996-1999)	609 buffaloes
	322 cows
	2,293 pigs
	38,876 chickens
	3,559 ducks
Fishing equipment and boat losses caused by sudden flooding from dam water releases (1996-1999)	9,563 gillnets
	129 castnets
	304,006 hooks
	24,192 small basket traps
	5,606 large basket traps
	2,187 funnel traps
	5,247 falling-door traps
	1,173 dugout boats - paddle
	18 engine/motor boats
	1 electric generator
Housing losses caused by sudden flooding from dam water releases (1996-1999)	37 houses washed away
	Items/possessions in 37 houses washed away
Rice stock losses caused by sudden flooding from dam water releases (1996-1999)	44,708 kg of rice stocks
Impacts non-quantified	
Impact category	Losses for 3434 households in 59 villages
Deaths and illness (1996-1999)	32 deaths due to sudden flooding from dam releases
	952 deaths due to suspected water quality problems
	Unknown number of illnesses
Other livelihood impacts	Food insecurity, malnutrition, and increased vulnerability
	Indebtedness, migration, and community fragmentation
	Lost wild vegetable/plan collection, wildlife hunting
	Potential future loss of livelihood/cultural knowledge base
	Increased domestic conflicts and village disputes
	Reduced river crossing and boat travel due to dangers
	Alternative drinking water sources, reduced bathing/swimming
Livestock deaths due to suspected water quality problems (1996-1999)	4909 buffaloes
	2238 cows
	7854 pigs
	147,709 chickens

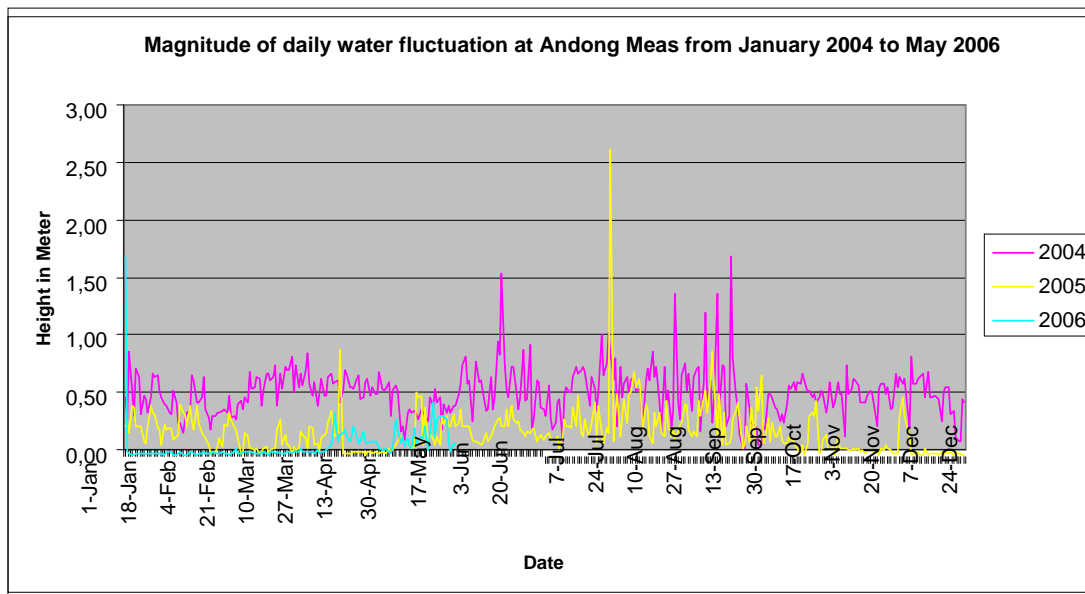
	1670 ducks
	2448 dogs
Other agriculture losses	Agricultural tools (e.g. plows, shovels, hoes) Field houses and rice barns
Other housing losses	Housing construction materials and household items
Other natural resources impacts	Loss of riverine vegetation, birds, reptiles, wild animals and aquatic life, riverbank erosion, and damage to habitate Increased exploitation of forest resources

Source: Oxfam America, 2001

Water level fluctuation

Besides flooding, a provincial government official in Ratanakiri claims that water level fluctuation remains a problem to date although no flood has occurred during the dry years of 2004, 2005 and 2006 (Interview 4.2.5). Figure 4.1 gives the magnitude of the daily water level fluctuation at Andong Meas district from January 2004 to May 2006. The graph reveals that in 2004 water fluctuated frequently from half to one meter within a day. Extreme fluctuation occurred in July 2005. The extreme fluctuation usually happens during the wet season as a result of water discharge from the hydropower dam as well as rainfall runoff.

Figure 4.1: Magnitude of daily water fluctuation at Andong Meas from January 2004 to May 2006

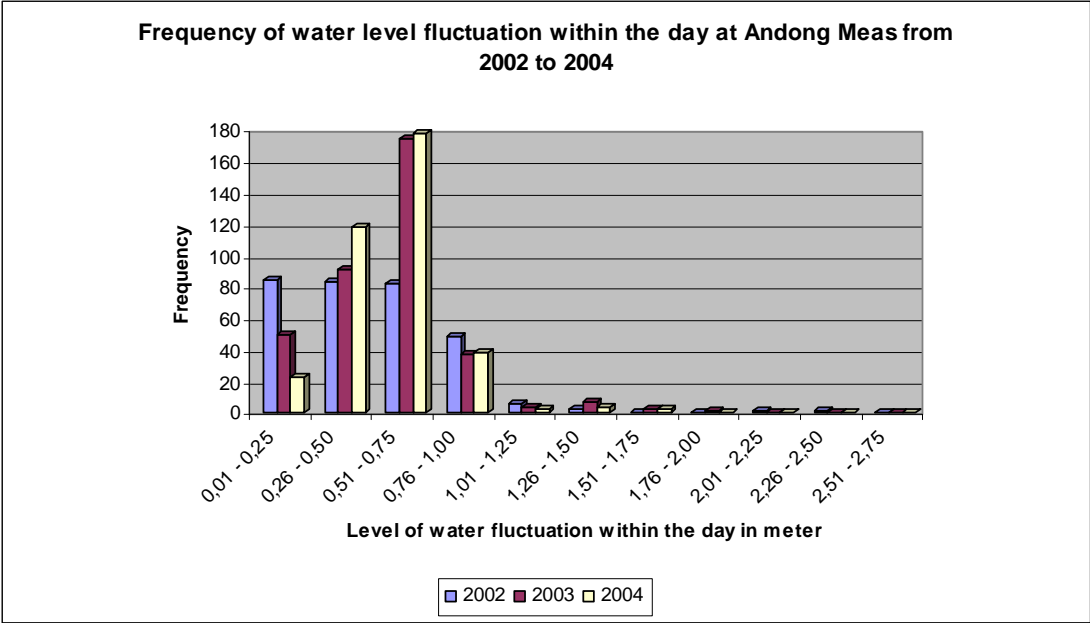


Source: Author’s data processing based on data source from Department of Hydrology and River Works, Cambodia²⁰

²⁰ Note: magnitude of daily water fluctuation is calculated to find the difference between maximum and minimum of water level recorded within 24 hours.

Regarding the magnitude of water level fluctuation, a Cambodian official at the Ministry of Industry, Mines and Energy stated that water level fluctuation in Se San River shall be considered normal if daily fluctuation is generally below 30cm during the wet season (Interview 1.3.1). The official also stated that the Vietnam party has already committed to keeping the discharge of water as close to natural flow as possible. In relation to this, the Vietnam party has also acknowledged that water level fluctuation will be improved once the re-regulatory dam is put into operation before the wet season of 2008 (ibid.). Figure 4.2 shows the frequency of water level fluctuation from 2002 to 2004. The graph indicates that at Andong Meas district through out 2003 and 2004 the daily change in water level predominantly falls within the 0.51 to 0.75 meter range.

Figure: 4.2 Frequency of water level fluctuation within the day at Andong Meas from 2002 to 2004



Source: Author’s data processing based on data source from Department of Hydrology and River Work, Cambodia²¹

Bank-erosion

According to a Cambodian hydrologist, water level fluctuation leads to collapsing of riverbanks in many parts of the river system and then excessive sediment is trapped in the riverbed and deep pools (Interview 1.4.1). This causes destruction of habitat for migratory fish that usually moves up and down from Tonle Sap Lake and the Mekong for breeding and spawning in the dry season.

²¹ Note: frequency is a calculation result of a series of water level fluctuation with the day through the year with the interval of 0.25 meter

Furthermore, as the river gets shallow water becomes warm and unfavorable for fish habitat. The hydrologist claims that water level fluctuation causes physical change of the riverbank morphology which leads to severe bank-erosion (ibid.). Though there is such a conclusion from hydrologist and the local community, a Vietnamese official maintains that bank-erosion occurred not only recently but long in the past (Interview 3.1.3). Other factors such as deforestation and an increase of machine boats in the river are all affecting bank-erosion. According to this official, until now, there is no any study or survey that proves that Yali-Falls dam caused bank-erosion (ibid.).

Impact on fisheries

Local communities reported during my fieldwork that fish catch has declined drastically. The Department of Hydrology and River Works reported that water level, which sometimes was too low particularly in the dry season, had caused severe damage to fisheries due to the increase in water temperature (MOWRAM, 2000). Similarly, the Se San Protection Network Committee complains that since the construction of Yali-Falls began the river often dries up, particularly in the dry season, for several days before it begins to rise again. For instance, the river has recently been empty during the middle of the dry season at Andong Meas district from 11 to 13 February 2008 (Interview 4.1.9). Because of low water level, combined with sedimentation, many deep pools were shallow with no place for fish to stay.

In contrast, an argument by a Vietnamese official shows a disagreement regarding the reduction of fish catch by riverbank villagers. As the official asserts “the claim is very difficult to assess because the impacts were not all attributed to the dam alone. Instead, other factors could also cause such impacts such as population growth, illegal fishing, chemical pollution from industrial and agriculture, extinction of fisheries in other parts of the Mekong Basin etc.” (Interview 3.1.3).

Water quality and health impacts

During the fieldwork, the local community reported that water in the Se San River turns more turbid than it was a decade ago. Hirsch and Wyatt (2004) attributes this to increased river bank erosion and possible riverbed scouring associated with fluctuating river flows and levels. As a result, the community has reported an increase in health problems associated with the unusual fluctuation of flow, such as itchiness, eye irritation and stomach ache after bathing and drinking. In contrast to this view, a Vietnamese official asserts that “such problems could be caused by lack of sanitation on the part of local community” (Interview 3.1.3).

Dry season flow

While the local community complains about unpredictable flow in the dry season, a Vietnamese official maintains that downstream communities will obtain more water during the dry season from dam release such that they can maximally use water for irrigation and navigation (Interview 3.1.3). However, it should be noticed that most of the riverbank villagers' livelihoods are fully based on nature. Presently, no canal or irrigation system exists in their region. Fluctuation of flow in the dry season has also increasingly caused destruction of riverine vegetables and plants that they used to harvest along the riverbank. They reported in interviews that many of plant species have already disappeared and the next generation will not know those kinds of plants anymore. In this case, dam impacts result in the loss of local knowledge.

4.2.3 Concluding remarks

The foregoing discussion shows differences in viewpoints of different actors. Various important actors who had a direct engagement with dam issues can be identified, such as the affected riverbank communities, the NGOs, the Cambodian government officials, and the Vietnamese government officials. The view of affected riverbank communities is mainly based on their local knowledge, their observation of changing river condition, and their experiences. The view of NGOs such as NTFP and Oxfam America clearly represents the protection of social welfare of affected communities as well as the protection of water resources environment and ecology. In this regard, the actions taken by NGOs, which will also be discussed further in Section 4.4, could bring the voice of local communities to provincial, national and international agencies for resolution. By this way, affected communities are empowered through NGOs. Since Cambodian government agencies (from provincial to national levels) represent the important intervening bodies to address the issues, they are also a central victim of criticism. As we have seen above, the impacts were claimed by affected communities and NGOs to occur since 1996. Such a claim is difficult to assess by the Cambodian government agencies as these bodies did not possess the technical capacity to show whether or not the 1996 flood occurrences were the cause of dam construction. Technically, the Cambodian water resources agencies did not have the necessary facilities to monitor the river (such as water level and rainfall monitoring stations) prior to 1996. This is the gap where the Vietnamese government agencies responsible for dam development create their room for maneuver which steers the issues away from the claim of affected communities. However, we could not draw a solid conclusion on this technical capacity alone as there are many factors associated with the resolution of dam impacts. This will be discussed in more detail in Chapter 5 and Chapter 6 where I explain the interests at national level of both

countries and the institutional setting of the 1995 Mekong Agreement in which both countries affiliate to this international framework.

As I have already discussed different views of different actors on the hydropower impacts, in the next section it is necessary to discuss the local coping capacity. This involves the knowledge used and problems encountered by affected communities in to the context of hydropower impacts mentioned above.

4.3 Local coping capacity, knowledge and problems encountered

This section aims to discuss local coping capacity, knowledge and problems encountered by affected communities. The reason for this discussion is to understand to what extent the affected communities have the ability to cope with the changing condition of the river system, what knowledge they have to cope with such changes, and what problems or threats they encounter. Six points will be discussed in this section, including coping capacity toward flood events (4.3.1), organizing cultural practices as a means for recovery (4.3.2), abandoning and relocating home (4.3.3), taking self-precaution measures (4.3.4), seeking other alternatives for livelihoods (4.3.5), and coping with the decline of water quality (4.3.6). These six points will be discussed to include three important cross cutting-themes, namely local coping capacity, knowledge and problems encountered. After discussion of the six points, a concluding remark to this section is made in 4.3.7.

4.3.1. Coping capacity toward flood events

Rainy season floods were the highest in 1996 and 1999 (Fisheries Office, 2000). Floods occurred more frequently in low lying areas. For example, the community reported that high floods occurred three times in Veun Sai district whereas they occurred two times in Taveng district and one time in Andong Meas district in 1996. The community reported that flood levels ranged between two to three meters height in their village.

During flood events local communities moved to hills or higher ground located approximately two to eight kilometers from their residential village for temporary shelter. Boat was the main transport facility with which the community used to evacuate their family and properties. Due to topographical floods, floods are typically longer in flat land areas. For instance, while the 1999 floods in Andong Meas district lasted for only three days, they occurred for over a week in Taveng district and for over 20 days in some villages in western Veun Sai district (Fisheries Office, 2000). Therefore, the duration for which the communities had temporarily moved and set

up their shelter ranged between three days to three weeks for each high flood occurrence (Focus Group Discussion, August – October 2007)

The community reported that they encountered shortage of food as their rice stock was washed away and their animals drowned. They also claim that lack of proper shelter, food and water had caused them serious fever, diarrhea and skin diseases. In response to such situation, village leaders and elders played a core role in calling for village meetings in order to compile information on losses and damages due to flood. The report was then sent to the provincial authority via the commune chief and district governor for emergency relief. The emergency relief was provided by the former Emergency Response Group (presently known as National Committee for Disaster Management - NCDM) and the Cambodian Red Cross (CRC). The assistance includes the provisions of tents, canned food, noodles, rice, towels, clothes and small amounts of cash. The provincial health center also provided health service to the victims.

Some communities claim that the responses from the emergency response group were very late and not sufficient. Some communities confirmed that each family received 25 kg of rice, a tent and canned fish while other communities informed that they received more assistance in kind as well as in cash (Focus Group Discussion in Veun Sai district, October 2007). Nevertheless, as mentioned by most communities such assistances were delivered to them only three months after the floods. Therefore, they were starving during the flooding and during the interval period. There was also limitation in the responses regarding health services, which many affected communities did not receive. The provincial official asserts that it was difficult to deliver health services to the victims for two reasons (Interview 4.2.5). First, the affected areas were remote and could not be accessed by road in the wet season. Second, the provincial health center lacks staff and facilities for such assistance intervention.

In spite of such provincial authority's efforts, many villagers claim that they did not receive any emergency assistance or health services. Consequently, they experienced shortage of food, and confronted diarrhea and fever. Those who had lack of food borrowed rice from their neighbors, to be returned in the following year (Focus Group Discussion, August – October 2007). Therefore, many of them were in debt for a few years. One of the reasons the community did not receive assistance, as elucidated by a provincial official, was the inaccessibility of the area (Interview 4.2.5). Another reason was the fact that there was no report sent by the commune chief on the damages after the 1999 floods (Interview 4.3.5).

4.3.2. Organizing cultural practices as a means for recovery

The majority of people living along the Se San River are animists who deeply believe in a spiritual world. They believe that their ancestral spirits are living in big trees, large rocks, the soil, and the river, and therefore, those natural resources are well protected by the spirits. Traditionally, the community is obliged to perform a ritual ceremony before taking any action on extracting and making use of natural resources. For example, before clearing forest and starting crop plantation the community holds a ceremony to worship forest and soil spirits so that the spirits will permit them to cultivate the crop peacefully and will also provide them high yield. However, if there is no such ritual respect or when there is misconduct they believe that at least one of their family members will go deadly sick as the result of spirits' reaction. In response to this critical situation, the affected family is required to organize a ritual ceremony to beg pardon from the spirits by sacrificing a chicken or pig or buffalo and wine under the leadership of powerful village elders and the participation of the villagers.

The same belief was mentioned by the community regarding the alteration of river flow and the destruction of forest to make way for hydropower dam building which led to critical disaster imposed by spirits. As quoted in Fisheries Office report (2000: 35-36), an old Tampuan woman from Kachon Kroam Village in Veun Sai district expressed her opinion that "...I think the spirits of the water and the spirits of the trees are angry with the humans. Now Vietnamese has blocked the path of the spirits of the water, and the dam has caused many big trees in the reservoir area to be flooded. Therefore, both the spirits of the water and the spirits of the big trees are angry. Then when the Vietnamese release the water from the reservoir, it is like releasing the angry spirits upon us, and the spirits make us sick and causes us to die a lot."

Indeed, many villagers held a ritual ceremony to worship river water spirits in response to the 1996 floods. For instance, Jarai communities in Oyadao and Andong Meas districts had immediately performed the ritual called "Kab Krobei Pheuk Sra" (meaning slaughtering buffalo and drinking wine). This ritual is obligatory in their cultural practice in response to the disaster, which they believed to be caused naturally that imposed by an angry water spirit. They mentioned that the ceremony aims to call the water spirit and beg pardon if their community had done anything wrong and also aims to request the spirit to bring the situation to the normal. The ceremony was usually led by three to five village elders who were considered to be powerful and respected by the villagers in their society. Fund raising was done among villagers to buy a buffalo and wine for this collective ritual. However, they claimed that their cultural response to such disaster had not produced any positive result as more floods occurred one after another. The

reason for such negative result, they claimed, was due to man-made disaster caused by the construction of the Yali-Falls dam. As a response to the disasters the two upstream communities had stopped holding the ceremony after the 1996 floods.

Similar practice was done by the communities living downstream in Taveng and Veun Sai districts. Many families had sacrificed a buffalo, pig and chicken for the water spirits. Some villagers conducted ceremonies dedicated to rice and animal spirits that were lost due to floods in order to call those spirits back home. They mentioned that such ritual practices were very powerful in the past but the practices had no longer been effective after the 1996 floods. Consequently, the communities had abandoned their cultural rituals by claiming that the floods were not caused by spirits but were man-made by blocking the river upstream.

4.3.3. Abandoning and relocating home

After experiencing the 1996 floods the villagers always expressed fear in living adjacent to the Se San River as they cannot predict when flood would occur. The first response was the abandonment and relocation of home by riverbank villagers in Talao and Ngang communes in Andong Meas district to live uphill in 1997 (Interview 4.4.8; 3SPN, 2007a). Talao commune leader reported that villagers had decided to abandon their home to live uphill due to the following reasons. Firstly, they knew that there was Yali-Fall dam construction upstream and this construction caused serious floods in 1996. Further, they feared future unforeseen floods. Secondly, the river's water quality had been degraded which caused them diarrhea and skin rash after drinking and bathing. Thirdly, fish and other natural resources which they used to collect from the river and from the bank were depleted. And fourthly, the villagers were fearful of being dead if the dam would break.

A senior district official in Andong Meas said that the community usually relocates their home to new areas if the natural resources in their area are depleted, or their area become prone to disaster. Other villagers may also move their home to be near urban center so that they can easily access health center, school and market. However, the official asserted that, many villagers in Andong Meas district had been moving out from river to hill and mountain due to fear of dam break and floods (Interview 4.3.5).

Some villagers also express the concern of unpredictable flood and move their traditional property to keep with their fellow villagers who live on the hill such as gongs and musical instruments, copper pots, and traditional jars. Village elders in Talao commune told that some newly married families establish their new home on the hill approximately eight kilometers from

their village as they express fear of living near the river (Focus Group Discussion in Talao commune, August 2007)

Table 4.2 Population of the abandoned villages by district and commune

No	Original Village	Commune	Families that have moved	Number of People who have left	Number of Women	Year the village was abandoned	Name of new village and/or community
Oyadao district							
1	Pi	Sesan	4	15	8	2003	O'Trav, O'Phla
Andong Meas district							
2	Gnang	Gnang	43	195	97	1997	Gnang
3	Dal	Gnang	36	158	73	1997	Dal Pvor
		Gnang	33	155	87	2006	Dal Pok
4	Tang Se	Gnang	87	420	219	2005	Tang Mlou
		Gnang	73	332	174	1999	Tanglom
5	Tang Chi	Gnang	53	253	130	1997	Tang Chi
6	Nay	Gnang	62	287	137	1997	Nay
7	Ka Chut	Gnang	62	324	194	1999	Kachut Leu
8	Kanat	Ta Lao	94	551	245	1997-1998	Kanat Thom
9	Ta Norng	Ta Lao	51	225	125	2000	Ta Norng
Taveng district							
10	Ke Kuong Krom	Taveng Krom	22	98	46	2001	Ke Kuong Krom
Veun Sai district							
11	Phak Nam	Koh Peak	58	228	125	1998-2003	O'Chhnang
12	Khuon	Koh Peak	7	24	21	2000	Chrob Cha Lor
13	Pa Teng	Koh Pong	2	7	3	2002-2005	O'Kagn Chri
		Koh Pong	6	39	16	2002-2005	Srae Tang Lao
		Koh Pong	9	78	40	2002-2005	O'Pong
14	Ka Chon Krom	Kachon	10	75	25	2001-2003	O'Tamao
15	Banpong	Banpong	10	73	37	2000	Trapang Gna Pe
Total:	15 original villages	8 communes	722 families	3,545 people	1,800 women	1997-2006	20 new villages/communities

Source: 3SPN, 2007a

In 1999 and 2000 there were more villagers from Talao and Ngang communes of Andong Meas district who had abandoned and moved their home to mountain area as response to floods, surges and erratic water level fluctuation caused by Yali-Falls dam (Interview 4.4.8; 3SPN, 2007a). For the same reasons, other communities living in Oyadao, Taveng and Veun Sai districts were also

abandoned and relocated their home away from the river between 2000 and 2006 but the numbers were significantly less than those who had abandoned their home in Andong Meas district. According to a study conducted by 3SPN there were approximately 3,545 people (722 families) who had moved away from the river between 1997 and 2006 (3SPN, 2007a) (see table 4.2). This outgoing number of villagers stood almost 15% as compared to the total population of 23,738 people who reside along the Se San River in Ratanakiri province.

Though the new location provides the community fertile soil for crop cultivation through their traditional slash and burn practice, a senior district official argued that a great number of people who had been abandoning the river and moving to live in mountain area poses a number of problems both socially and ecologically (Interview 4.3.5). Firstly, the new area is far away from existing road, well and school which the government had established. The new area can only be accessed by foot, requires one to two hours walk. Therefore, the communities are isolated. Secondly, there was not enough water during the dry season as their home is far away from water source. Thirdly, the children cannot go to school as their home is far away. Fourthly, relocation for new home poses a threat to ecology because of deforestation for new settlement and farming.

Therefore, the abandonment of home and relocation to new area of local communities creates difficulty for development agency in extending public infrastructures and services to those areas such as road, health center, school, and clean water.

4.3.4. Taking self-precaution measure

The riverbank villagers mentioned that erratic water level fluctuations remain one of the problems which caused loss of their boat and damage to their fishing net. The communities reported that the magnitude of water level fluctuations was particularly great in the evening. They observed that the river water sometimes goes very high in evening and drops very low in the morning. If the boat was tied to a small trunk of the tree, the evening wave could break the trunk and bring the boat away from the bank to downstream.

For instance, a villager in Pangkit village of Taveng district reported that he had tied his boat to a small trunk before he went to bed, when he woke up in the morning his boat disappeared from the bank. He was shocked with the loss of his boat. Later he observed that the tree had left a broken mark of the trunk which he had tied his boat in the evening. He, then, concluded that his boat was brought away by water level fluctuations. After a week he heard that his boat was found by downstream communities in Veun Sai district. He went to take back his boat but he had to pay 40,000 Riels (approximately ten US dollars) for the redemption of the boat. After such an

experience he always reminded himself to tie his boat strongly to a tree (Interview 4.5.10). In 2006, the communities in this village mentioned that there were three boats that were lost due to water level fluctuations. The villagers said that the value of the boats ranges from 200,000 to 400,000 Riels (approximately US\$ 50 to US\$ 100) while the motor boat costs from 600,000 Riels to 1,000,000 Riels (approximately US\$ 150 to US\$ 250) (Focus Group Discussion, 7 September 2007).

According to an economic evaluation study conducted by Oxfam America (2001), 1,173 dugout boats (paddle) and 18 motor boats were lost due to water surge and water level fluctuations on Se San River in Ratanakiri province from 1996 to 2000. With the great number of losses the riverbank communities expressed that they have no mean to solve the problem of losing the boat except warning themselves to take self-precaution by tying their boat strongly to the big tree on the bank.

The same self-precautions were made to avoid their fishing net from being damaged by erratic water level fluctuation. The communities mentioned that in the past their fishing net had never been damaged by the flows but after 1999 their fishing nets have often been damaged due to water level fluctuations if they were deployed over night. A villager in Taveng district complained that “not only fish has been drastically declining over the past ten year but water level fluctuation has also made our fishing net broken if it was deployed over night. Therefore, many fishers have been taking measure not to leave their fishing nets in the water over night.”

4.3.5. Seeking other alternatives of livelihoods

As described in Chapter 1, the Se San community is largely dependent on river for fishing, collecting riverine vegetables, and growing fruit trees as well as vegetable and paddy rice along the riverbank for their everyday livelihoods. As claimed by the communities, such activities are fully dependent on river system. If the river system is changed or damaged, such activities can no longer be fully implemented.

Certainly, the local communities asserted that over the past ten years the Se San River has been abnormal in its nature. Erratic water level fluctuations and poor water quality were often reported by local communities to be caused by the operation of Yali-Falls dam. Abnormal water level in the wet and dry seasons was also mentioned. According to a senior district official in Veun Sai, he complained that “in the dry season of 2006, I witnessed that the water level was very low, and even some deep pools were also dried up, such that people could walk across the Se San River, which we had never experienced in the past. Though I understand that this kind of disaster may

be cause by nature but the dam has also contributed to this disaster as well.” (Vice district governor of Veun Sai informed the Vietnamese delegates in the EIA workshop on 5 July 2007 – Author’s field note).

Due to frequent low water level in the dry season, the community complained that many fish species had disappeared as the community had no longer caught them from the deep pools of the Se San River and therefore fish catch had steadily decreased. For instance, a fisher in Veun Sai district told that “nowadays, it is difficult to get fish from the Se San River. At most I can catch two to three small fishes a day and some days I do not catch even one fish (Interview 4.4.2).” In response to this some fishers often go for fishing in lake or small streams of the Se San River’s tributaries. They mentioned that even though they can catch a small number of fish but they are considerably getting more fish than catching from the Se San River. However, many fishers mentioned that they have not access to those streams or lakes because their village is located far away from the source.

Besides fishing, riverbank villagers also complained that erratic water level fluctuations and unpredictable floods during the wet season caused severe bank erosion and inundation of lowland farm along the riverbank. Consequently, some farmers have abandoned their farmland along the riverbank because they fear that bank erosion and frequent inundation will destroy their crops and vegetable. A senior district official informed that about 60 hectares of farmland along the riverbank in Veun Sai district were abandoned due to frequent inundations in the wet season (Vice district governor of Veun Sai told the Vietnamese delegation during EIA Workshop on 5 July 2007 – Author’s field note). Moreover, he claimed that river water level fluctuation also causes depletion of natural vegetable from the riverbank and the community can no longer collect them. In response to such situation, many farmers have chosen to clear forestland to grow rice, bean and corn. Though forestland encroachment for farming is on the increase, the productivity remains low and in most case insufficient for their year round consumption.

Some villagers have chosen to work outside their district for additional income. Some villagers migrate temporarily to more well-off neighboring district to do work such as clearing land, growing peanut and cashew, and planting rubber tree. The income is usually used to buy additional rice sufficient for year round consumption. They mentioned that the reasons for seeking job outside district were because they can no longer rely on the river for fishing and harvesting natural vegetable along the bank. For example, a Jarai villager in Andong Meas district said that “nowadays I can no longer depend on the Se San River for fishing and

gardening. My upland rice cultivation does not provide enough food for my family year round so I have chosen to get extra job in Bokeo district during the dry season” (Interview 4.5.11).

4.3.6. Coping with the decline of water quality

The villagers of Rieng Vinh village in Taveng district said that “water quality of the Se San River had been deteriorating since 1996. In the past the water was clear and tasted good but these days the water is always brownish and sometimes smell badly” (Focus Group Discussion, 11 September 2007). They said that in the past villagers drew water directly from the Se San River for drinking and cooking but nowadays the water is not clean for consumption. They said that the water is brownish year round and sometimes harmful to their health such as causing diarrhea after drinking it. They mentioned that the water is not as pure as before.

In response to such changes, some riverbank villagers purify water by digging the sandbank about half meter in order to allow water to be filtered by sand before withdrawing it for drinking and cooking. However, this method is not always applicable for all villagers as sandbank is not available. Other villagers have chosen to dig their own well but sometimes do not find enough water in the dry season.

Figure 4.3 Jarai women are sitting and waiting to get water from forest based water hole



Source: 3SPN, 2007a

Others have used borehole or pump well which have recently been installed in the village along the river by commune council and NGOs in 2004 and 2005. However, they informed that some

wells can not be used in the dry season as there is no water. Besides this, some villagers have also turned to use water from streams and creeks of the Se San River's tributaries but they mentioned that they need to spend at least 30 minutes or one hour to get water.

For the people who had abandoned and relocated their home to mountainous area and who live far away from the stream, they use water from forest based water holes (see figure 4.3), which are shallow dug holes in the ground (3SPN, 2007a). However, villagers spend a lot of time and labor to get water as the sources are located far away from their home; and according to indigenous tradition, the women are responsible for collecting water for their families. Women from the villages of Tang Chi, Dal Pok, Tang Lom and Tang Mlou in Gnang commune, Andong Meas district said that villagers now face difficulty in collecting water, especially during the dry season since water is located around one to two kilometers from their homes and once they are at the water source, they must wait for water as well (see figure 4.3) (ibid.).

4.3.7 Concluding remarks

The foregoing discussion shows that hydropower impacts pose several threats and problems on local livelihoods beyond their local coping capacity and knowledge. The coping capacity toward flood events by the local communities proved to be insufficient since there were lack of proper shelter, food and drinking water. Serious fever, diarrhea and skin diseases were common through out the past flooding events. Stopping holding their cultural practice in worship of water spirit means losing cultural sense of problem sharing within the community. Abandoning and relocating home to new areas of some affected communities causes destruction of forest, health risk due to shortage of water in the dry season, and isolation from other communities and facilities such as school and health center. Taking self-precaution measure due to erratic water level fluctuation limits local community from fishing activities and therefore reduces their fish catch. Some communities chose the other options to go for a job outside their district for additional incomes since they can no longer rely on their fishing activity. And another problem concerns with the decline of water quality which posts health risk for local community and their animals, particularly in the dry season. During the past years, some communities withdraw water from the river through the process of filtering on the sandbank and boiling before drinking. However, sandbanks are not always available spatially for all communities.

Although local community processes their social experiences and new knowledge in order to cope with the changing condition of river system, their coping capacity remains largely limited.

In addition, the outcomes resulting from their coping activities may affect social and ecological problems in the future, such as increasing tendency of land conflict and deforestation.

4.4 The emerging response in to dam impacts

The foregoing discussions in sections 4.2 and 4.3 presented an important background on how different actors perceive dam impacts and to what extent local community can cope to such impacts. They provide a first hand conceptual idea to this section on how dam impact shapes the responses of various actors at local level. Although local community believes that dam caused a series of floods since 1996, the real action and response came into play only after the dry-season flooding at the end of February 2000. The actors that came into play in this response include local and international NGOs and government agencies at provincial level, and government agencies at national level. The latter will be discussed in Chapter 5. The following discusses the emerging response to dam impacts at local level.

In response to the February 2000 flood event, an initial Ratanakiri province Se San Working Group, consisting of individuals from local and international NGOs working in Ratanakiri province including NTFP, Health Unlimited, and the government SEILA²² Program, had been established to investigate, hold meetings and create consensus at the local level on the need for an investigative study of dam impacts (Hirsch and Wyatt, 2004. p. 59). At the same time, NTFP also sought collaboration with the Centre d' Etude et de Développement Agricole Cambodgien (CEDAC) in order to support and provide training in the field of agricultural production to the affected communities living along the Se San River with the aim that the provision would promote the livelihoods of the communities (Interview 1.5.1). Oxfam America and NGO Forum of Cambodia (NGOF)²³ had also been paying a visit to Ratanakiri province and made collaboration with NTFP concerning the investigation of dam related impact. Later, NTFP together with Oxfam America, NGOF and CEDAC established so-called Se San Working Group (SWG) to investigate the flood impacts which were believed to have been caused by the construction of the Yali-Falls dam (Hirsch and Wyatt, 2004. p.55). The three latter NGOs were based in Phnom Penh. The SWG together with the Ratanakiri Province Se San Working Group

²² The government sponsored SEILA Program is an experimental national decentralization process that began in 1996. It has provided provincial and district governments with a platform to work together with local communities and in cooperation with NGOs, in developing village, commune and district development plans addressing issues such as resource mapping, collective land ownership, protection of economic, social and cultural rights, and co-management (Ojendal et al., 2002 quoted in Hirsch and Wyatt, 2004)

²³ NGOF is a key umbrella NGO representing a network of over 60 active Cambodian and international NGOs, and working to advocate on issues of concern to the Cambodian people and NGOs working in Cambodia (Hirsch and Wyatt, 2004)

had been working together to form a survey team in order to conduct a comprehensive impact study aimed at documenting losses which caused by the construction of the Yali-Falls dam.

In order to proceed, the study required human and financial resources. The groups identified that human resources should be mobilized locally with the technical assistance from international experts while the fund can be sought from Oxfam America through NTFP. With the availability of financial resources, the survey team was then established with the lead of international consultant through NTFP by taking into account the involvement of individuals from provincial government departments such as Agriculture, Forestry and Fisheries Department; Environment Department; and Rural Development Department. Beside this, indigenous peoples originating from the Se San River in Ratanakiri Province were also engaged in the survey.

Though NTFP took the lead, the survey was primarily conducted through Fisheries Office of the provincial government right after the Fisheries Office of Ratanakiri formally requested assistance in conducting a village-level survey of all the communities situated along the Se San River. As a result, on 24 April 2000, a pre-planning workshop was conducted at the Ratanakiri Department of Agriculture, Forestry and Fisheries with the participation of senior officials from the department (Fisheries Office, 2000). On 25 April 2000, the principal study team of 12 people including three women and four indigenous peoples originating from the Se San River in Ratanakiri Province traveled to the field for the survey (ibid.).

The survey was carried out using Rapid Rural Appraisal (RRA) conducted in all villages located along the Se San River in Ratanakiri Province in Cambodia from April to May 2000. Consequently, at the end of May 2000, a 43-page report entitled “A Study of the Downstream Impacts of the Yali-Falls Dam in the Se San River Basin in Ratanakiri Province, Northeast Cambodia” was produced and distributed to government agencies and NGOs in Ratanakiri province and Phnom Penh. The report documented the impacts of Yali-Falls dam construction which caused serious problems on livelihoods of downstream communities in Cambodia since late 1996 and called upon the Cambodian government to begin addressing the issue and negotiate with Vietnam. Through this report the affected communities living along the Se San River made several appeals that:

- i. It is important that the serious ecological and socio-economic problems of local people be addressed as soon as possible, as local people have already suffered for over four years and their patience and constitutions are running short;

- ii. The Vietnam Government, and those international organizations, foreign countries and companies who have supported them in building the Yali-Falls dam should take responsibility for the losses that local people have already experienced, including the loss of life and the loss of livelihoods. Compensation will need to be provided on a continual basis if the impacts from the dam are not alleviated;
- iii. The Villagers living along the Se San River would like to see the Yali-Falls dam decommissioned, and the Se San River returned to its natural state. However, if this is not immediately possible, strong measures need to be adopted to mitigate the downstream impacts in Cambodia, including releasing water from the dam in a way that replicates natural flows;
- iv. Local people living along the Se San River in Ratanakiri Province are not in favor of regulating the Se San River so that the dry season river flows are higher than natural flows, and rainy season flows are reduced from natural levels. River regulation will seriously affect a number of important livelihood activities and cause serious ecological problems. They want the old Se San River back!
- v. Villagers living along the Se San River in Ratanakiri Province are adamant that they do not want the Se San 3 dam built 20 km downstream from the Yali-Falls dam in Vietnam. They are adamant that the Asian Development Bank (ADB) and other foreign bodies should withdraw all support for the Se San 3 dam and other dams planned in the Se San River Basin in Vietnam.

(Fisheries Office 2000: 38)

With the findings of the impact study the SWG and Ratanakiri Se San Working Group had been moving more strategically for a long term advocacy body by requesting to form a local organization called Se San Protection Network (SPN) in order to support affected communities beyond the above completed studies. The following section discusses the formation of this local organization and its network building.

4.5 The formation of Se San Protection Network and network building

As an outcome of the above impact study by SWG, a local NGO namely Se San Protection Network (SPN) was established in Ratanakiri province in December 2001. According to SPN (2005a), there were three factors that influenced the creation of SPN. The first factor was the significant findings of the dam impact studies conducted by Fisheries Office after the February 2000 flood event caused by Yali-Falls dam. The second factor was the occurrence of significant

information exchange between the dam-affected communities and NGOs, the Cambodian and Vietnamese Governments, the MRC and the donor community after the flood event. And the third factor was the call of affected communities for help to assist with the mitigation of the impacts, recovery of livelihoods, compensation, water release warning, and stopping further dams building on the Se San River. This section discusses the establishment process of SPN including its roles, structures and transformational process. Its strategies and choices, and outcomes and challenges are discussed separately in section 4.6 and 4.7, respectively.

In order to move forward to establish SPN, a proposal was prepared by NTFP and the Global Association for People and Environment (GAPE) for submission to Oxfam America for funding in July 2001 (Hirsch and Wyatt, 2004). After its approval, Oxfam America recruited a project coordinator from Phnom Penh to run the Se San project called “Se San Protection Network (SPN)” in Ratanakiri Province. After recruiting the project coordinator, SPN project was formally launched under the umbrella of NTFP in December 2001.

Taking advantage of sharing office, SPN had utilized existing admin and financial system of NTFP in such a way that funds from Oxfam America could be channeled through NTFP’s account for which SPN could withdraw its budget for daily operation. In addition to that, SPN could also make use of human resources from NTFP for which many of whom had long been involved in Se San issues. For instance, a Se San Steering Committee was established along with the SPN project consisting of senior indigenous members associated with NTFP in order to assist and advise the project (Hirsch and Wyatt, 2004; Interview 4.1.7). Likewise, three NTFP staff members had also contributed on a part time basis to assist SPN during its inception period while at that time there were only four SPN staff including a project coordinator, an information assistant, a field assistant and a district field worker (SPN, 2005a).

From the inception, the SPN was formed with the working mandate in four areas including research and documentation; information sharing; dialogue and negotiation promotion; and capacity building, network and advocacy (ibid.). In order to succeed its working mandate, the prime task of SPN to implement its work program at local level requires that the local based community network shall first be established. With such mechanism SPN believes that the local community network could be able to drive, coordinate and legitimize various consultations, planning and representational processes related to further studies and negotiations (Hirsch and Wyatt, 2004) through team building and long term capacity strengthening provided by SPN aiming toward promoting advocacy, dialogue and negotiation.

Initially, SPN started a project called Community Support Network which aimed to establish Se San Community Networks (SCN) at local level by electing focal persons and respected elder groups from district and village levels. The respective focal persons and elder groups were elected by the affected communities through village and district meetings with the participation of local authorities spanning district governor, commune chief and village chief.

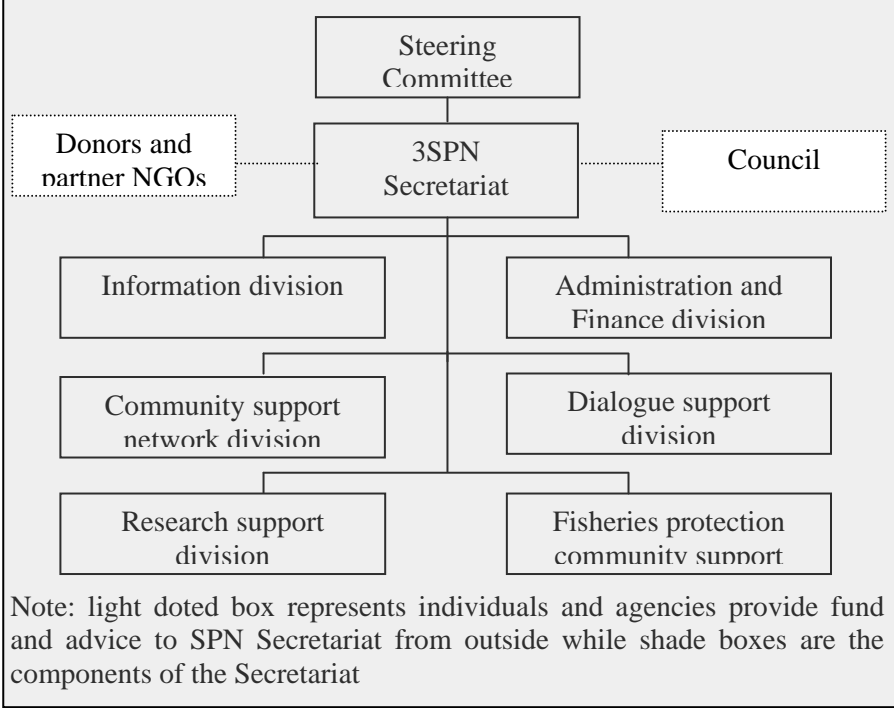
At the beginning, SPN initially set up SCN in seven focal villages along the Se San River encompassing one village in Oyadao district, two villages in Andong Meas district, two villages in Taveng district and two villages in Veun Sai district (Interview 4.1.7). During the building process of local structure, SPN organized a number of district meetings with the participation of district governors, commune chiefs, village chiefs, village elders, village focal persons, and a number of local officials representing education, health and agriculture offices of the district government (Hirsch and Wyatt, 2004). The discussions were focused on how SCN shall be strengthened with a firm network structure along the expansion of the network, particularly after the arrival of more field staff at SPN in August 2002 (Interview 4.1.7). One of the issues which were discussed was related to the representational members of Commune Council of local government in the Se San Commune Level Committee of SCN (see structure of SCN in figure 4.5). The idea was that the SCN would make use of existing local government system by engaging Commune Council in its system (Interview 4.1.7). However, this was vetoed at the meetings, held in October 2002, by a majority of villagers who felt that their Commune Council duties might not allow enough time for them to work on Se San issues (Hirsch and Wyatt, 2004). Finally, it was decided that the village chief would represent and play a facilitation role in the Se San Commune Level Committee (Interview 4.1.7). This is due to the fact that village chief is close to the affected villagers and he or she is seen as having less political influence from the central government than the commune council. Though the task has been devolved to village chief, SCN has also been keeping commune chief informed and engaged in its network activities such as participation in Se San annual celebration event, meetings and workshop. The idea of keeping commune chief/or commune council informed is twofold. Firstly, the work of community network pays a respect to the commune council who has the authority to govern the commune and the village. And secondly is to let this body well aware of the SPN's activities and gain support in its advocacy work.

Taking into consideration of consultation during district meetings, SPN started extending its local network beyond the seven focal villages with a clear structure from district down to village level. By early 2003, SPN expanded its local network to almost all affected villages along the Se San

River in Ratanakiri Province and subsequently, by early 2004, SCN were established in all 60 affected villages (Interview 4.1.7).

The main representational members of SCN consist of focal persons and elder groups at district and village levels. While district focal person takes the lead of SCN, district elder groups assist district focal person in strengthening its network at village level such as dissemination and collection of information on dam issues, and mobilization of community supports for advocacy. With the help of village elder groups, however, village focal person disseminate information received from district focal person on dam issues and on progress that SPN and SCN have made to the communities living along the Se San River. On the other hand, village focal person also monitors and collects information on unusual condition of river and its impact on local livelihoods for reporting to district focal person.

Figure 4.4 Organizational structure of 3 S Rivers Protection Network (3SPN)

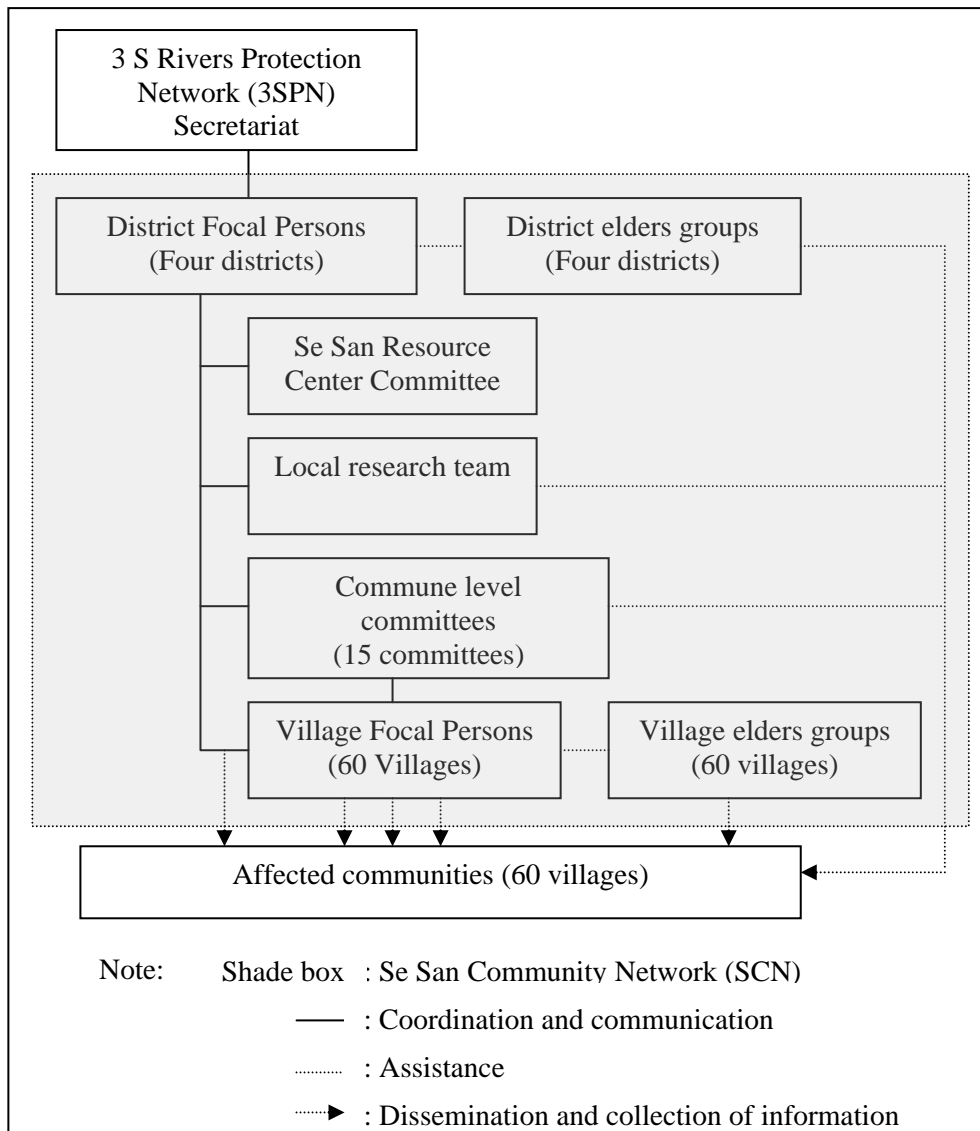


Source: Author’s compilation from fieldwork

As such the main structure of SCN consists of district focal person (two person per district) assisted by district elder groups (six to seven persons per districts) and village focal person (two persons per village) assisted by village elder groups (six to seven persons per village) (see SCN structure in figure 4.5). In addition, between the district and village levels, a Se San Commune Level Committee was also established in the view that the work conducted by SCN members is acknowledged and recognized by Commune Council of local government. Presently, the local

network structure of SPN consists of eight district focal persons, four district elder groups, 15 commune level committees, 60 village elder groups, and 120 village focal persons.

Figure 4.5 Structure of Se San Community Network (SCN) indicated in shade box



Source: Author’s compilation from fieldwork

After the coverage of SCN had been expanded to all villages along the Se San River, SPN moved to be independent from NTFP and registered as a local NGO approved by the Ministry of Interior on 27 October 2005 under a new name “3 S Rivers Protection Network (with the abbreviation of 3SPN).” 3S is synonymous to Se San, Srepok and Sekong Rivers. According to 3SPN official, there were two reasons which influenced the move from SPN to 3SPN (Interview 4.1.7). The first reason was to respond to the growing hydropower development on the other two rivers (Sre Pok and Se Kong), which converge with the Se San River above ten kilometers before merging with the Mekong’s mainstream in Stung Treng Province of Cambodia. The second reason was in

response to the continuous requests from the communities living along the two rivers who made a similar complaint to the changing Se San River system.

With such move, 3SPN established its own secretariat with staff taking charge of admin and financial system. Furthermore, three other projects including dialogue support project, local-based research support project, and fisheries protection community support project were established in addition to the existing community support network project. Figure 4.4 shows the organization structure of 3SPN.

Funding the network

From the inception Oxfam America plays an important role in taking the lead to coordinate and resource the SWG (Hirsch and Wyatt, 2004) and supporting the group with finance to investigate floods which occurred in February 2000. Relatively, the comprehensive study conducted by NTFP through Fisheries Office in Ratanakiri was mainly financed by Oxfam America. After this study, Oxfam America continues to finance SPN project from late 2001 with an estimated budget of about US\$ 65,000 annually. The budget was mainly financed to establish, strengthen and promote local community network, capacity building and advocacy. After formal establishment of 3SPN with the recognition of Ministry of Interior in September 2005, 3SPN has been moving to seek fund from other donor agencies to expand its fields of working. Since then three other donors have been providing fund including Broederlijk Delen (Belgium), McKnight Foundation (USA), and Oxfam Australia. The funds are mainly directed to support local based community research, dialogue and advocacy, and community network for fisheries protection respectively. Presently, 3SPN mobilizes about US\$ 110,000 annually for its operation from the above four donor agencies. Therefore, without such fund 3SPN would not be able to move its activities forward. The commitment of increased funding from donors shows that 3SPN has considerably gained support internationally and globally. This result can be interpreted that the issues which occurred at local level are being heard and addressed at international and global levels. The following section discusses strategies and choices that 3SPN used in its advocacy work to influence river basin development policy at national, international and global levels.

4.6 Strategies and choices of Se San Protection Network

This section discusses strategies and choices which employed by 3SPN to influence the river basin development policy at national, international and international levels. The strategies and choices include propagation of Se San issues for transboundary dialogue (4.6.1), formation of river coalition network (4.6.2), capacity building of the network (4.6.3), community meeting and

petition preparation (4.6.4), research and documentation (4.6.5), political support (4.6.6), and restoration of local livelihoods through partners (4.6.7).

4.6.1 Propagation of Se San issues for transboundary dialogue

3SPN realized that the first step of action to be taken was to hold the first national Se San workshop in order to bring attention to government, donors and the MRC about Se San issues by presenting the finding of impact study, and providing opportunity for affected communities to speak and request for resolutions. The workshop was organized, after SPN had already established its local networks SCN in seven focal villages along the Se San River, in a way that affected communities can be mobilized to participate and speak to audiences in their own words. The workshop took place in Phnom Penh on 27 November 2002.

In the first place central to SPN's strategy was to invite key stakeholders including Cambodian government officials from CNMC and MOWRAM, representative from MRC Secretariat, and representative from VNMC. However, a late decision by SPN's Se San Steering Committee was that the VNMC invitation would be withdrawn with the view that engaging only the Cambodian government and the MRC would build and gain initial support from within the Cambodian national government (Hirsch and Wyatt, 2004). Nevertheless, none of the representatives had attended the workshop. While Cambodian officials from CNMC and MOWRAM declined to attend by citing other commitment, absence was also the MRC Secretariat who declined to participate lest it be seen to be partisan since Vietnam had not been invited (*ibid.*). The absence of CNMC and the MRC Secretariat, therefore, tends to show that there was no or perhaps less commitment in listening and answering to complaints made by the community networks.

Though representative of CNMC did not join the workshop, the governor of Ratanakiri province had attended the workshop. The workshop had opened the floor for the affected communities to raise their concerns on the changing river system caused by hydropower dam development and operation. At the end of the workshop the communities living along the Se San River in Ratanakiri released a joint statement citing the impacts of Yali-Falls dam on their livelihoods and requested assistance in five areas as following:

1. We request that the government along with organizations (international) help stop the construction of hydropower dams on the Se San River, particularly Se San 3 and Se San 4;
2. We request that the natural flow of the river be restored;

3. We request that the dam builders and stakeholders who have funded the construction of the dam compensate villagers for all lost and destroyed property and equipment;
4. We request that the government of Cambodia negotiate with the government of Vietnam to find a solution;
5. We request that the MRC and stakeholders come to the provinces to study the impacts in consultation with the people along the Se San River.

(Ratanakiri Se San Communities, 2002 quoted in Hirsch and Wyatt, 2004)

In supporting the communities' joint statement, SPN had also organized a press conference aimed at propagating the consequence of Yali-Fall dam development to a wider audience and stakeholders to raise awareness and support for further actions and resolutions. In a press conference, a senior official of SPN called the attention of the MRC and its member countries to respect the rights of local communities not just only the dam developers. The senior official of SPN raised the concern that "we aim to send a strong message to the MRC and its member countries that all river users in this region have rights, not just hydropower developers, and that those rights must be enshrined in a clear set of rules and procedures for dam building, which takes local people into account" (SPN, 2002a: 1).

Prior to the first national Se San workshop mentioned above, SPN together with partners including Oxfam America, Probe International, NGOF, CEPA and NTFP had organized a meeting with senior officials of CNMC at the CNMC Secretariat in Phnom Penh on 25 November 2002. Participants were also senior officials from Ratanakiri departments including Water Resources and Meteorology, and Rural Development. The meeting discussed the concerns of Se San River. SPN and partners presented the negative effects of hydropower dam in the Se San River. The team requested CNMC to act a number of fields as follows.

- Conduct water quality analysis more frequently particularly in the dry season;
- Strengthen communication system such as provision of telephone and fax to affected area for smooth information delivery on warning of water release from dam;
- Request Vietnam to conduct proper environmental and socio-economic assessments prior to dam construction;
- Request CNMC to visit project site and conduct geological survey of Se San River and request Vietnam to inform downstream communities at least 15 days prior to releasing water from dam;

- Request to install hydrological and meteorological stations along the Se San River in order to distinguish whether floods are caused by water release or rain fall;
- Suggest that CNMC request members of the MRC to discuss and respect international law;
- Request that concerned stakeholders would receive benefit from the river particularly the affected communities;
- Request Cambodian authority to promote agricultural and public health support and construct road infrastructure along the river; and
- Request participation of senior officials or representative of CNMC in the first national Se San workshop in order to strengthen cooperation between concerned stakeholders.

(CNMC, 2002)

Responding to the above request, a senior official of CNMC asserted that “the above requests are out of my authority. I will raise the issues to the top level of CNMC and to the Ministry of Foreign Affairs for further intervention (ibid.).” Such response reveals that the Se San issue is highly influenced by high level decision-makers.

4.6.2 Formation of rivers coalition network: linking local actions to national, international and global arenas and vice-versa

Se San River was the first to capture strong attention of many non-governmental organizations in Cambodia in responding to the February 2000 flood event caused by water release from Yali-Falls dam. As described above, the flood event led to an immediate response of local and international NGOs in Ratanakiri Province and Phnom Penh to conduct impact study in early 2000 and the establishment of SPN in December 2001.

Hence, SPN was the first local NGO which was created in response to hydropower dam impact in Cambodia. While SPN has been working to form a strong network at local level, an idea to form a new coalition group called Se San Work Group (SWG) was initiated by a coalition of three Cambodian NGOs including SPN, NGOF and CEPA in 2003. The main aim of this coalition group is to strengthen solidarity and to advocate for policy reform of cross-border hydropower development in response to the dam-related negative effects on local communities living downstream of Se San River in Cambodia. While the role of SPN was to establish and strengthen SCN at local level in Ratanakiri Province and CEPA performed similar tasks in Stung Treng province, NGOF took a major responsibility to support and coordinate advocacy works at

national level. This means that advocacy activity from local to national took place via NGO. For instance, NGO had been assisting local communities in sending their statement to Cambodian Prime Minister demanding resolutions and compensation. Presently, six statements have been sent since 2003.

Supporting this coalition group were the international NGOs and distant advisory group including Oxfam America, Probe International (Canada), International Rivers (IR) in USA, Australia Mekong Resource Center (AMRC) in Australia, Mekong Watch (MW) in Japan, Towards Ecological Recovery and Regional Alliance (TERRA) in Thailand, and Global Alliance for the Preservation of the Environment (GAPE) in Canada. This advisory group plays an important role in supporting SWG to move forward its advocacy activities. Many members of this group had been involved in Se San issues as early as 2000 in response to dam-related flood event in February 2000. While some organizations had been writing letters to the MRC Secretariat for clarification of MRC's role in solving Se San issues, others had been addressing the issues to concerned agencies particularly to dam supporting donors such as ADB and WB to take a major step to stop financing further dam building on Se San River and to press EVN to compensate and mitigate the impacts according to international law (see chapter 6 for discussion of international and global arenas).

Due to the fact that dam building grew significantly on Sre Pok and Se Kong Rivers which merge with the Se San River before flowing into the Mekong's mainstream in Stung Treng province, the coalition had been transformed into 3S Working Group in 2005. By 2007, this coalition was reformed again under a new coalition network called Rivers Coalition in Cambodia (RCC) in response to the growing dam related issues in the entire territory of Cambodia. As a senior official of NGO puts it,

“Although we have urged the government and those who support dam building to stop financing and building the dam, dam construction continues to grow more rapidly over the past few years. Since dam construction cannot be stopped, we have moved to establish and strengthen RCC aiming at the project implementers to take into account the participation of local people in planning and decision making process in order to make sure that the interests, needs and benefits of affected people are addressed. In addition, we would like to request that dam development must abide national and international EIA guidelines which are stipulated and promoted by the World Commission on Dams (WCD) (Interview 1.5.1).”

Taking into account of more memberships from other national and international NGOs, the RCC had been restructured into two major distinguished categories of membership including the core and the supporting. The core member comprises eight national and international NGOs in Cambodia including 3SPN, NGOF, CEPA, Oxfam America (OA), Oxfam Australia (OAus), Fisheries Action Coalition Team (FACT), Cambodian Volunteers for Society (CVS), and Conservation and Development on Cambodia (CDCam). This core member meets monthly to report on progress and discuss the issues and strategies to be copped and implemented.

However, the supporting member consists of a number of organizations mainly based abroad such as AMRC, IR, Probe International, Mekong Watch, TERRA, GAPE, Bank Information Center (BIC), and Center for Biodiversity and Development (CBD) (RCC, undated). This supporting member is also called distant advisory group who back-up the activities of RCC with technical, political and legal supports (SPN, 2005a). The role of distant actors is discussed further in chapter 6 on international and global arenas.

4.6.3 Capacity building of the network

While a structural mechanism at local level has been established, 3SPN believes that the next step is to strengthen and build the capacity of local network in order to enable local members of SCN to understand and gain knowledge on dam issues and to act upon their knowledge for demanding rights in using shared water resources.

Central to this strategy, 3SPN has started developing opportunity for local network members to access trainings, workshops, study tours, and meetings which has significantly improved their ability to learn, express their opinions, organize communities, do advocacy work, identify the cause of the problem and how the dam has impacted their lives, and strengthened their planning, documentation and reporting skills.

In relation to the improvement of knowledge and skills, the local network members had received a number of trainings such as advocacy strategy; networking and community organizing; activities planning, reporting and minutes writing; information management; communication and coordination; preparation of workshop and meeting (ibid.); community resources; community-based research; and EIA training workshop (3SPN, 2006a). With the access to capacity building program, the local network members are more confident to voice out in public forums and write their concerns, needs, and complaints to their elected representatives at all levels, especially top government officials (SPN, 2005a). For instance, since 2003 a statement had been drafted

annually by the representatives of SCN and sent to Prime Minister informing about upstream dam impacts and seeking solutions.

Even though there has been acknowledgement from the local network members that they have been better equipped with knowledge on dam related issues and advocacy due to their engagement in 3SPN activities for the last seven years. However, they suggest that further training on public speaking and negotiation methods shall be promoted so that they are confident to talk when holding meetings with different stakeholders and especially senior government officials. They also suggest that further training on research and report writing is essential as it promotes their capacity to be better equipped with knowledge and skills to document the impacts more scientifically for the evidence. They also suggest that attending workshop, conference and study tour outside their province and country could broaden their understanding on dam issues and good advocacy methods that practiced elsewhere, and communication with other dam-affected communities to build a stronger network.

4.6.4 Community network meeting and petition preparation

One of the advocacy approaches which 3SPN has been adopted is to organize a regular annual Se San celebration to bring together the affected communities along the Se San River to meet and share their concerns regarding negative impacts caused by hydropower dam development and to discuss how cooperation and work can be strengthened in order to protect the river and their livelihoods.

Since 2003, 3SPN has organized six annual Se San celebrations for which some 250 local network members have been participating each year. These celebrations provide villagers the opportunity to build solidarity and cooperation amongst affected communities and also for villagers to share and learn from each other on issues, such as experiences, needs, natural resource management and advocacy work (SPN, 2005a). At the same time, they provide villagers a chance to appeal to governments, international organizations, and donor agencies regarding on how dams have been affecting their livelihoods and demanding for intervention and resolution.

For instance, an affected villager living in Andong Meas district appealed to government during the fifth celebration in June 2007 through local mass media that “on behalf of affected communities living along the Se San River, I would like to request the government to find solution to solve the dam impacts and that dam construction shall be stopped, and compensation on dam negative effects shall be urgently made to affected communities” (Author’s field note

when attending Se San celebration workshop in Lumphat district, Ratanakiri Province on 15 June 2007).

Some villagers made an appeal for their participation to be included in decision making processes of development so that they are informed and discussed, and their rights are respected. A villager in Taveng district made a call that “we request that the affected communities shall participate in the development processes. We want to participate in decision making of development programs so that we can inform what is going wrong and what is going right during the processes of those developments. In this regard, we urge the government to find solution to the problems that we are currently facing due to upstream dams’ impact” (ibid.).

Other villagers appealed that the benefit of using natural resources from the river shall be equally shared between upstream and downstream. A villager in Veun Sai district complained that “we are all affected by hydropower development in Vietnam. We do not benefit from the dam but Vietnam does. Therefore, we urge that the benefit of sharing natural resources shall be made equally to our downstream communities” (ibid.).

A part from large participation of affected communities, a number of stakeholders from partner NGOs such as NGOF, Oxfam America, Mekong Watch, CEPA and FACT, and representatives of SPN donor agencies have also attended the celebration. More importantly, provincial and local authorities including provincial governor, district governors, and commune and village chiefs had also been attending the celebration. While such gathering celebration had gained strong support from local and provincial authorities, it had also provided opportunities for affected villagers to address the issues directly to their elected officials hoping that the issues will be brought to talk at national level.

For example, at the 4th Se San celebration in May 2006, Vice-governor of Ratanakiri province supported the communities’ claim with his statement that “dam-associated impact on the Se San River has been affecting fish habitat, and threatening wildlife and forest along the Se San River for which the communities must find new ways of living (3SPN, 2006b).” He then promised that he will raise the issues to central government for resolution since the Se San issue is transboundary which required bilateral talks between the two countries (ibid.). Although there has been such commitment, it was not clear whether the issues have been raised to central government. As an official from 3SPN puts it, “we are not sure whether the provincial authority has raised the Se San issues to central government because we have not received any feedback from the authority (Interview 4.1.5).”

Box 4.1. Example of petition prepared by Se San Community Network

Kingdom of Cambodia

Nation, Religion, King

Sesan Protection Network, Ratanakiri and Stung Treng

Respect to:

Samdach Hun Sen, Prime Minister of the Kingdom of Cambodia

We, together over 55,000 ethnic minority people living along the Se San River from Ratanakiri and Stung Treng Provinces have been affected from the Yali hydropower dam construction in Vietnam. We would like to send you this petition describing the real situation. From 1996 to present, we have faced the following problems:

1. Several times flooding has occurred
2. The river dried during construction
3. There have been irregular water fluctuations
4. Water quality has changed
5. There has been a loss of fish species and fish habitations (an increase in sand has filled the water pools)
6. It has impacted the people's cultural and traditional system
7. Social infrastructure has been destroyed
8. There has been a loss of river biodiversity in the basin
9. A number of people have abandoned their villages because they can no longer rely on the river
10. Agricultural production has become difficult because of water fluctuations
11. During the dam's construction, rice fields and farm fields were flooded
12. There has been a loss of fishing, gold panning and vegetation activities along the river
13. During dam construction, human and animal lives were lost
14. There has been a gradual loss of wild vegetables living along the river
15. Property, equipment, materials, houses, livestock, etc. were lost
16. There has been a loss of animal species that rely on the river
17. The nature of the river has changed

In regards to the problems mentioned above, we together would like to request the following solutions:

1. Your help in restoring the natural flow of the river
2. Please have the government help stop further dam construction
3. We want the river's benefit to be shared between affected communities and dam builders
4. Please have the government find appropriate measures to solve the problem for the Se San communities for the past, present and future times
5. Request to dam builders to provide life insurance to the people living downstream of the hydropower dam
6. Before decision making on projects, a public consultation process must be done with participation from local people in the region
7. We request that the government respond to all of our past and present requests

According to the issues mentioned above, we hope that you, Samdach Hun Sen, will help to find solutions. We together would like to bless you with success and happiness.

Ratanakiri, 05 May 2005

Signed by representatives of dam affected ethnic communities

CC: Ratanakiri Provincial Governor; Stung Treng Provincial Governors; MOWRAM; CNMC; Minister of Environment; Minister of Industry, Mines and Energy; all government administration offices along the Sesan River; all commune councils along the Se San River; the Standing Committee on Dams and Canals along the borders.

Source: SPN, 2005b

During the Se San celebration, 3SPN invited local media including newspapers, televisions and radios to interview affected communities and the members of the networks in order to raise awareness to a broad mass of audiences through public broadcasting system. At the end of this celebration, the community network members have also been preparing statement and sending to the Cambodian Prime Minister for intervention. A sample of communities' statement dated 5 May 2005 is shown in box 4.1. Up to 2007, six statements had been sent to the Premier. The statements had also been forwarded to parliamentary; Cabinet Minister; CNMC; Minister of Environment (MoE); Minister of Water Resources Management (MOWRAM); Minister of Industry, Mines and Energy (MIME), and Ratanakiri provincial governor.

4.6.5 Research and documentation

Since inception of SPN in 2001, there were many national and international non-governmental organizations, academia and research institutes in Cambodia and abroad supporting local communities in demanding their rights to be respected, and that the past, present and future loss caused by Yali dam be compensated. Realizing the importance that Se San issue is international, cooperation with national and international stakeholders is importantly required by SPN in order to acquire technical, political, and legal supports nationally and internationally. As described earlier, RCC serves as a communication web where SPN moves to seek assistance and intervention from its members. Through this cooperation, there were a number of studies/reports that have been conducted to document a wide-range of impacts including negative effect on social and cultural aspects, economic losses, and legal aspect (see box 4.2). So far, these studies have served as a basis of increasing public and stakeholder awareness and creating space for dialogue with Vietnam through concerned Cambodia government agencies. The first public awareness occurred through the first impact study which was jointly conducted by Ratanakiri Fisheries Office and NTFP from April to May 2000. Through this participatory study process, most of the population living along the Se San River was aware of the effects of the dam only in 2000 while the actual impacts were claimed to have occurred since mid 1996. While these studies serve as public awareness they also create space for communities to press Cambodian government to negotiate with Vietnam.

A part from this, 3SPN has also been moving forward to strengthen the capacity of local network members by promoting local community based research conducted by SCN teams. In order to enable them the capacity to do research, 3SPN provides training on research, data collection method, analysis, reporting and assists in structuring and editing the report and finally helps in printing and publication. While the research conducted by local communities could build and

strengthen their capacity, the report also serves as their evidence on dam impacts as well as serves as a basis for initiating dialogue and increasing public and stakeholder awareness (Trandem, 2008).

Box 4.2 Reports prepared by 3SPN's partners

- Fisheries Office in Cooperation with Non-Timber Forest Product Project, May 2000. A study of the Downstream Impacts of the Yali Falls Dam in the Se San River basin in Ratanakiri Province, Northeast Cambodia.
- Se San Protection Network, Partner for Development, Non-Timber Forest Product Project, Stung Treng Province Fisheries and Forestry Office, March 2002. A Community-based Study of the Downstream Impacts of the Yali-Falls Dam along the Se San, Sre Pok, and Se Kong Rivers in Stung Treng Province, Northeast Cambodia.
- Oxfam America, January 2001. Economic Valuation of Livelihood Income Losses and other Tangible Downstream Impacts from the Yali Falls dam to the Se San River basin in Ratanakiri Province, Cambodia.
- Oxfam America, December 2003. Dangerous Waters: Violations of International Law and Hydropower Development along the Se San River (draft).
- NGO Forum on Cambodia, December 2005. Down River: the Consequences of Vietnam's Se San River Dams on life in Cambodia and their Meaning in International Law.

Source: Author's compilation

One of the recent achievements is the research on “abandoned villages along the Se San River in Ratanakiri Province, Northeastern Cambodia” which was conducted by 17 local researchers from SCN teams from May to July 2006. With technical and financial assistance from 3SPN Secretariat the report was published in August 2007. The report documents a number of households that have been abandoned and moved away from the river to be resettled on uphill and higher ground due to depletion of fisheries, degradation of water quality and fear of dam break. The research found that 722 households composed of 3,545 people from 17 villages and eight communes located along the Se San River have abandoned the Se San River in order to live in upland mountainous areas (3SPN, 2007a).

The 68 page published report which was printed in color picture in Khmer and English languages shows that the local community network members have built up their capacity by moving from verbal expression to written document which could be used as their advocacy tool as well as their propaganda to reach a much wider audience for demanding their rights to be respected. The published report also serves as an incentive as the local researcher teams are proud of what they have produced. Moreover, the report was also used by SCN teams to disseminate their research findings to the affected communities along the Se San River for building awareness and raising the level of advocacy support at grass-root level.

4.6.6 Political support

Political support has been identified by 3SPN and its allies as an important strategy to negotiate outcome with Vietnam for reform. So far, 3SPN has engaged local and provincial authorities in its activities such as involving them in meeting, workshop and conference. During the first few years after the 2000 floods, there seems to be strong support from provincial authorities. During the first Se San National Workshop in November 2002, Ratanakiri provincial governor fully supported and encouraged NGOs to work in cooperation with government to find out real impacts in order to bring the issue to discuss with Vietnam. He asserted that “Oxfam should continue to support the Se San Project in order to find out the real problems of the Se San River. We will help this organization” (SPN, 2002b). Similarly, deputy governor of Ranakiri province supported the statement which was prepared by the affected communities during the Third Annual Celebration of Se San Protection Networks organized on 5 May 2005 that “I completely agree with and support the Se San issue mentioned in the statement along with the requests to Prime Minister Hun Sen” (SPN, 2005b).

At national level, 3SPN has also been working through concerned agencies in Cambodia such as organizing meetings with senior officials of CNMC, MOWRAM, and Parliamentarian members. The meetings provide venue for 3SPN and its allies to present the Se San problems, study findings, and request for strong political support and intervention from top decision-makers. Since 2002 there were three meetings that 3SPN and its partners had organized with CNMC. The first was conducted on 25 November 2002. The second was on 5 August 2003. And the third was on 8 May 2008.

One meeting had been organized to meet senior officials of MOWRAM on 20 May 2005 to discuss the role of Standing Committee on the Coordination of Dam-Canal along the borders of Cambodia – Vietnam – Laos and Thailand who takes charge in a bilateral talk with Vietnam for resolution of Se San issues. The meeting also updated on what action has been taken so far from the committee and its constraints. A senior official of this committee supported the work of SPN by mentioning that “because the Cambodian people have suffered since 2000, we should continue to insist Vietnam to pay compensation, though I am not sure how compensation can be delivered” (SPN, 2005b). However, since 2004 this committee has been lacking financial means to organize a meeting with Vietnam. Three meetings had been organized from 2001 to 2003 and were halt from 2004 to 2007 due to lack of financial resources. The fourth meeting, however, was organized in March 2008 with a financial assistance from Vietnam. With such circumstance, the official from this committee also complained that “how can we speak out (for compensation),

while our committee's officials were financed by Vietnam to the meeting" (ibid.). The above committee is an inter-ministerial committee which is overseen by the Cabinet Minister. Therefore, all expenditure related to this committee has to be borne by the Cabinet of Ministers. Realizing this issue, SPN and its allies had identified that meeting with the Cabinet Minister is a next step action in order to report on Se San issues, on actions that have been taken, constraints that the above standing committee has faced, and request for intervention. However, the meeting has yet to be pushed through. This reveals that there seems to be limited political support at higher level.

Another meeting was organized between 3SPN and its allies with the Third Commission of National Assembly who takes charge on planning, investment, agriculture, rural development, environment and water resources. The meeting was held at the National Assembly Office on 16 August 2005. Similar to the above meeting, SPN and its allies briefed on the Se San issues, actions taken, constraints to date, and request for intervention. At the end of the meeting the National Assembly had committed to take the following actions:

- National Assembly will invite representatives from concerned agencies including MOWRAM, MoE, CNMC, and Standing Committee on the Coordination of Dam-Canal along the borders of Cambodia – Vietnam – Laos and Thailand to answer in front of all parliamentarians at the National Assembly about the Se San River issues
- National Assembly will make a statement to national and international stakeholders about this issue in November 2005
- National Assembly will organize one investigating committee to monitor and observe the issues
- National Assembly will bring these issues to Ministry of Foreign Affairs in order to find solution for the affected communities
- National Assembly plans to cooperate with 3S Working Group (former name of RCC) to organize a workshop involving stakeholders at national, regional and international level to find the solution. The workshop shall be planned to hold in February or March 2006
- National Assembly will make a plan to meet with concerned officials at MRC Secretariat to discuss and find solution
- National Assembly will discuss on Se San issues during the Asian Assembly meeting

- National Assembly will organize Parliamentarians study tour to Vietnam and discuss about the Se San issues.

(3 S Working Group, 2005b)

Though 3SPN and its allies had pushed through to meet key persons from government officials as well as from National Assembly, the political support seems to be weak as Standing Committee on the Coordination of Dam-Canal along the borders of Cambodia – Vietnam – Laos and Thailand continues to have no budget for organizing meetings with Vietnam to discuss and solve Se San issues. On the other hand, workshop on Se San issues at national and international levels which was promised by National Assembly has yet to be organized. This result shows that the work of 3SPN and its allies in seeking political support seems less successful.

4.6.7 Restoration of local livelihoods through partners

3SPN believes that rehabilitation, restoration and strengthening local livelihoods can be done through cooperation and partnership with other provincial development NGOs. 3SPN has been lobbying provincial development NGOs to provide assistance to affected communities some of which were related to food security, improving access to safe drinking water, health care, and road infrastructure. However, a few projects had been done to restore the local livelihoods. There were two projects which were significantly related to the restoration of local livelihoods living along the Se San River. First was related to food security project which was initiated by NTFP/SPN in cooperation with CEDAC in 2002. Second was related to the improvement of clean water provided by Welt Hunger Hilfe (German Agro Action – GAA) in 2005. Below are details of the two projects.

Food security project

As mentioned earlier, NTFP had initially discussed and cooperated with CEDAC to provide food security project to affected communities living along the Se San River through a provision of training in the field of agriculture. It aimed to rehabilitate the communities' livelihoods and the project began in 2002. While NTFP/SPN provided funding and office space CEDAC provided one technical assistant from Phnom Penh to work with communities along the Se San River. The project focused on training in raising chicken, farming, compost making, and dry season vegetable growing. Since the budget was limited, only five villages of Veun Sai district were involved. Therefore, the coverage area of the project was very small compared to the total of 60 villages located along the river. During the training period, the communities were offered the opportunity to learn and test the technique using available local resources. However, according to

CEDAC official, the project was not successfully sustained (Interview 4.1.3). After the project ended in 2004, CEDAC handed over the responsibility to NTFP/SPN to continue monitoring the project but it was constrained because the NTFP/SPN did not possess technical personnel to take over.

During the cooperation, CEDAC proposed a Re-Se San project aiming to restore and improve livelihoods of affected communities through provision of income generation activities. This initiative was seen by SPN as contradicting to its advocacy strategy and therefore the project was not succeeded (ibid.). A 3SPN official told that the strategy of SPN was to show the dam builders, national and international development agencies that its advocacy activity purely emerged from the earnest effort of affected communities which did not relate to financial assistance, for instance, through the provision of income generation project (Interview 4.1.7). The official further stated that “We want the communities to initiate their own effort. The dynamic of force for demanding rights and justice must come from the communities. We do not want to produce the image that participation of local communities in advocacy activity is an exchange of income earning through SPN’s project. In Ratanakiri province, there are many NGOs providing income generation projects. Therefore, our strategy is to cooperate with those NGOs and lobby them to provide the services” (ibid.).

This strategy reveals that the success of improving local livelihoods is greatly dependent on the capacity of partner NGOs, many of which do not only focus on the improvement of livelihoods of population along the Se San River but outside the basin as well.

Improvement of clean water

Another significant response from NGO sector is the provision of clean water services to the affected communities living along the Se San River. An official of GAA told that “the project came after there were many reports on unusual water quality of Se San River which reported that the river water was polluted causing communities living along the river to suffer from itchiness and diarrhea after bathing and drinking the water (Interview 4.1.2).” In response to this situation an assessment on water related issues along the Se San River was conducted by GAA team. The assessment revealed that the communities face serious problem in using river water for bathing, drinking and cooking. A two-year project for clean water services was then initiated by GAA and began in January 2005. Up to the time the project ended in March 2007, 42 wells had been installed in three districts of Andong Meas, Taveng and Veun Sai. The well was installed in the middle of the village so that every one could easily have access. For project ownership and

maintenance, it was required that the community contributed their own labor to collect sand for the construction while the rests were the responsibility of GAA. After installation, water from well is tested for coliform bacteria, iron, arsenic and mineral. According to GAA official, the test shows that water is clean for drinking without boiling because the well was dug seven meters down the earth (ibid.). The community formed a committee within their village to monitor and maintain the well. In order to insure that the well is sustainable, each household pays a contribution of 500 Riels (US\$ 0.12) a month to the committee's cash saving box to reserve for repairing and purchasing spare parts when needed. This saving cash can also be used as a loan in the community for which the member can borrow and return. After completion of this project, GAA transferred its task to Ratanakiri provincial department of rural development to oversee particularly as an agent that community could communicate to buy spare parts for repairing and maintenance. This department also promises to help communities in buying spare parts from Phnom Penh if they are not available at provincial town (ibid.).

Beside well construction, water filter tank had also been distributed to the community living in the village where GAA did not install well. The lifespan of this filter tank is about two years. Therefore this filter tank was only for temporary use during the period when well was not yet installed. However the community had to pay a contribution of 4000 Riels (one US dollar).

4.7. Outcomes and challenges

This section discusses the outcomes and challenges resulting from the advocacy work of 3SPN. Two important outcomes are identified including communities' awareness and support in advocacy; and the acknowledgement of dam impacts by the Vietnamese and Cambodian governments. The two outcomes are discussed in 4.7.1 and 4.7.2, respectively. Sub-section 4.7.3 discusses the challenges.

4.7.1. Communities' awareness and support in advocacy

Most of the population living along the Se San River became aware about the effects of Yali-Falls dam only when the first comprehensive impact study was carried out by international expert through Ratanakiri Fisheries Office from April to May 2000 while the impacts had been discovered to have occurred since mid 1996. Even though some upstream communities were aware about the dam earlier than this study, the information about the dam prior 2000 was not clearly understood by the communities. Therefore, most of communities did not have knowledge about the dam until 2000. During the process of Rural Rapid Assessment (RRA) of the study, the study team informed the communities about the reasons why the river has been changing.

Through this study the communities were informed about the effects of Yali-Falls dam and through this study, too, the communities made appeals to government, national and international agencies to take full effort to restore their livelihoods and to help stop dam building on the Se San River. After a year of this study, a proposal to set up SPN was prepared by the above international expert with consultation and participation of local communities. Through this mechanism processes, the communities fully support and request further actions to be taken by NGO and that their participation can be mobilized when required. Following the establishment of SPN Project in December 2001, local community took full effort to participate in this network activity in order to advocate for change and that past, present and future losses need to be compensated. Since late 2001, at least 500 members from grass-root level have been involved in this network. Presently, there are eight district focal persons, 120 village focal persons, four district elder groups (approximately 30 district elders), 60 village elder groups (approximately 300 village elders), and 16 commune level committee (approximately 60 members). Among these, about 150 (including district focal persons, district elders, and village focal persons) are full members of Se San Community Network while the rests are supporting members. Since the formation of this network, the affected communities receive information on dam and participate in meeting, workshop, forum and other events which provide them with knowledge and facilitate the opportunity for them to raise their concerns to government and relevant agencies for interventions. To date, six statements/petitions drafted by local community representatives had been sent to Prime Minister for intervention.

4.7.2 Acknowledgement on dam impacts

Through the community network's advocacy efforts Vietnamese and Cambodian government acknowledge that the Yali Falls dam has caused negative impacts downstream (Trandem, 2008). According to Trandem (2008, p.111-112) "the first recognition came in the form of a verbal apology at a November 2002 conference, when a representative of Vietnam's Ministry of Industry stated 'we are very sorry for the losses of the people living downstream on the Se San River caused, of course, by releasing water from Yali Falls dam's reservoir in February 2000' (SPN, 2003). The second acknowledgement came in August 2003, when, at the recommendation of SPN, the CNMC sent a facsimile to VNMC, stating the concerns of the Se San villagers and requesting that Vietnam respond accordingly."

The above acknowledgement of dam impacts had led to two significant responses by Vietnam. First, the construction of Se San 4A re-regulatory reservoir located about one kilometer from Cambodia border began in November 2004. As mentioned by Vietnam, the rational of this

reservoir is to provide re-regulation of the intermittent outflow from the upstream hydropower projects and thus provide a steady flow without daily variations into Cambodia (SWECO, 2007). This means that daily erratic water level fluctuation which often complained by downstream communities would be solved even though water quality remains unsolved. Second, a study of Environmental Impact Assessment (EIA) was conducted in November 2005. The study assesses the likelihoods of past, present and future impacts on social, economic, culture and environment, and proposes mitigation measures. The outputs of this report were presented to the Cambodian government on 5 July 2007. While there were about a hundred participants from Cambodian government agencies and local authorities from affected areas attended the workshop, SPN and its allies boycotted the meeting due to the fact that the EIA report was delivered to them only one week before the workshop began which they had no enough time to review, and that the affected communities were not invited.

4.7.3 Challenges facing communities and Se San Protection Network

Even though there were acknowledgements from Cambodian and Vietnamese governments on the impacts of Yali-Falls dam on the Se San River, there has yet to be any mitigation or compensation for affected communities in downstream Cambodia, and Vietnam continues to build more dams on the river. On the other hand, access to information on these dams and the river's hydrology remains restricted (Trandem, 2008). In preceding section, two significant successes which had been outlined as results from community network's effort seem to be problematic.

Firstly, while the construction of Se San 4A re-regulatory reservoir is used as a mean to regulate flow regime in downstream, there is no guarantee that water quality will be improved, and that Vietnam will increase its power to control water flows. Moreover, it is likely that Vietnam would turn this reservoir into hydropower dam. Even though Vietnam had confirmed Cambodia that this reservoir will only be used to stabilize water flow downstream, a source from Vietnam news indicates that Se San 4A will become another hydropower dam with the capacity of 60MW, which is scheduled to complete at the end of 2010 (Than Nien News, 2008).

Secondly, even though environmental impact assessment study on the part of Se San River in Cambodia due to hydropower development in Vietnam had been conducted and shows that Yali operations have significantly disrupted the Se San River's flow in downstream Cambodia, there were concerns on how Vietnam will translate compensation and mitigation measures outlined in the report into real actions such as setting up aquaculture program, developing alternatives in

livestock and crop program, introducing electricity supply, establishment of drinking water and sanitation systems, improving health care system, and measures against erosion.

4.8 Conclusion

This chapter has discussed and analyzed social arenas in which struggles over resources and meaning are fought out at local level. The analysis focused on a series of situations in which contests over the issues of hydropower dam impacts take place and how interventions and outcomes take shape at local level.

The chapter began with the discussion of hydropower dam impacts from different actors' viewpoints in order to discover discrepancies of social interests and cultural interpretation (Section 4.2). The views of various important actors involved in dam issues were examined including the views of affected river bank communities and the NGOs, the Cambodian government officials, and the Vietnamese government officials. The analysis shows that the affected communities and NGOs on one side, and the Vietnamese government officials on the other continued to have different perceptions, while the views of the Cambodian government officials stood somewhere in between. While the views of affected communities and NGOs put a strong message that the Yali-Falls dam has a great impact on the affected communities' livelihoods, the views of Vietnamese government officials tend to steer the issues away from the communities and NGOs' claim by citing inappropriate study findings.

As far as the arena of struggle at local level focus of this chapter is concerned, the discussion also focused on local coping capacity, knowledge and problems encountered (section 4.3). The analysis examined to what extent the affected community can cope with the changing condition of the river system, what knowledge they have processed in order to cope with the changing condition, and what problems they have encountered. Scott argues that the ethically understandable assumption is that people in 'crisis', 'disaster' or extreme 'hazard' situations need external assistance, and there are often very clear views as to what form this assistance should take (Scott 1998, cited in Ellen, 2007: 19). The analysis of the cases in section 4.3 shows that external assistance to restore and improve livelihoods of affected communities was limited as there were lack of funds and lack of government personnel by which intervention should follow. This has left the responsibility to affected communities to find ways to cope with prolonged dam-related disaster.

In section 4.3 therefore I have described how people respond to their perturbation. Ellen (2007: 30) argues that "the same perturbation may elicit different responses from different social groups,

and different perturbations may elicit the same response from the same group. Whereas the cultural values and social relationships of some populations can be generalized as ‘risk-averse’, some exhibit strategies that are in some sense more risk-prone.” Similarly, affected communities along the Se San River have been adopting different coping strategies for their own survival according to their culture and the resources that they can mobilize. While many ethnic groups in Andong Meas district abandoned the Se San River banks to settle uphill due to fear of dam break and flooding, others had sought other alternatives to work outside their district for an extra income to buy food in order to supplement the losses of fish and water-based natural resources. Whereas relocation of home from river to hill may improve livelihoods, there are some threats and risks associated with this relocation. First, there is shortage of water in the dry season. As the new location is far away from the water source, the relocated communities especially women spend a lot of time to bring water for the family. Second, access to school and health center is difficult as their new location is isolated from these existing infrastructures. Ultimately, an increase in illiteracy rate and health threats is likely to occur. Since government’s poverty reduction strategy aims to improve literacy and to reduce risk and threat to women’s health, the problems faced by affected communities are also the problems faced by policy-makers. Here the implication for policy development is that basic needs including housing, food, water, education, and health care for all people shall be addressed. This means that housing, foods, water, education, health care and road systems should be in place for the affected communities.

Since hydropower impact is considered as a man-made disaster, a group of local and international NGOs have been taking full efforts since 2000 to demand that compensation and restoration of the river system and local livelihoods shall be undertaken by the dam owner. Despite local communities mobilization to advocate for such demands there has been no compensation or any assistance from the dam owner to rehabilitate the livelihoods of affected communities. This has left the effort to restore the living condition of affected communities to NGOs in Ratanakiri Province. For instance, as we have seen in section 4.6.7, there have been some interventions from NGOs in providing clean water through installation of pump wells in many villages due to unreliable water quality of Se San River. Other forms of assistance by NGOs such as income generation through vocational training as described above have not been so significant due to lack of human capacity and finance to support riverbank villagers with skills and knowledge to start small-scale farms or enterprises. One of the problems could be that many of the riverbank villages are isolated and cannot be easily approached in either the wet or dry season.

In response to hydropower dam impacts too, another effort by local and international NGOs is to establish the Se San community network aiming to advocate a policy reform for better river basin management in addressing the consequences of transboundary hydropower development. Since late 2001 this community network has been established and strengthened through provision of capacity building provided by SPN Secretariat. Over the past seven years of this network's operation, affected communities are all now well aware about hydropower development and its consequences through information dissemination of the network's members. Presently there are more than 500 members representing affected communities who participate in SPN's activities, calling on the Cambodia government to negotiate with Vietnam to compensate and restore their livelihoods. This shows that the affected communities are fully supporting the advocacy activity. In order to make it successful, the SPN Secretariat helps establish linkages from local to national and international levels. While the role of local community network is to disseminate information on dam consequences to affected communities, and document the impacts, SPN helps local community network with capacity to do research and documentation and facilitates to send reports to concerned agencies at national and international levels as a strategic approach to press Vietnam for compensation and restoration of livelihoods of affected communities.

Through SPN' activities such as supporting community-based research, meetings, and workshops, local communities are able to speak to policy makers at national and international levels about dam impacts on local livelihoods and to call for actions from all political levels. For this purpose, RCC – NGOs coalition network – has been established to mobilize local and international NGOs in Cambodia and abroad to press for policy reform of river basin management so that social justice for affected communities is respected.

Through the community network's efforts, Vietnam has been accepting that the Yali-Falls dam has been impacting local livelihoods in downstream Cambodia, which has yielded some action to address the communities' complaints, such as the constructing of the Se San 4A re-regulatory reservoir near the Cambodian border to stabilize water flow, and conducting an environmental impact assessment on the Cambodian part of the Se San River to assess and mitigate the social impacts.

These successes, however, seems to be associated with other challenges and constraints such as compensation and restoration of local communities' livelihood which have not yet been made. While affected communities have been receiving strong support from NGOs in the field of advocacy, most affected communities continue to face problems with water quality and food shortage as there is limitation of such services provided by NGOs. As this problem continues to

occur, the tendency of advocacy activity is weakening participation of affected communities. Some affected communities perceive that the local community network has not produced any tangible outputs as there is no compensation from Vietnam and their livelihoods continue to be impacted by the deteriorating river system. Therefore, the challenge here is to promote the living condition and livelihoods of local communities while ensuring that the advocacy activity is strengthened to push forward policy reform.

CHAPTER 5

NATIONAL ARENA: SUCCESS OR FAILURE OF INTERVENTION?

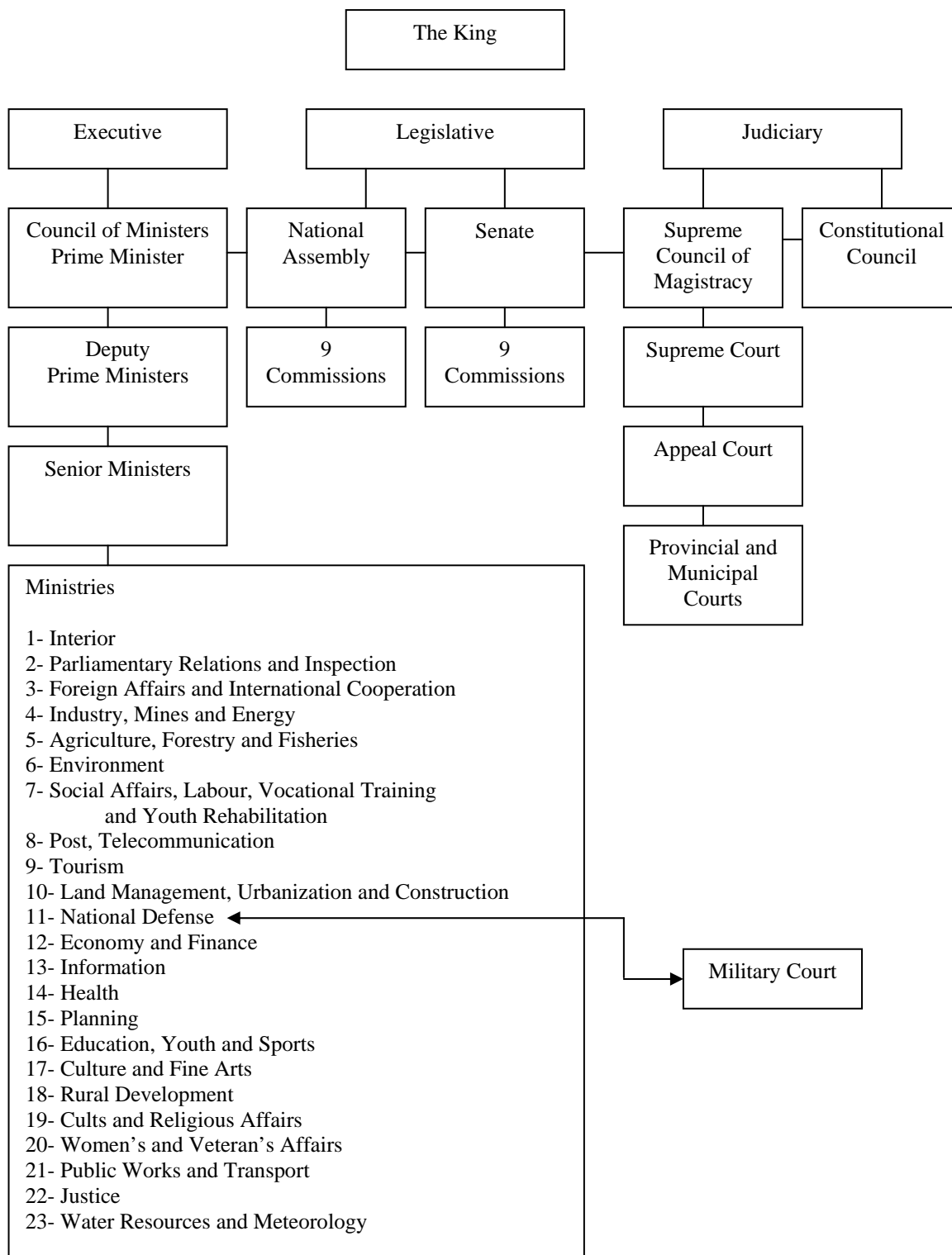
5.1 Introduction

In this chapter I attempt to explain how national government agencies responded to dam impact and what strategies shape their interest and the outcomes of their responses. This chapter contains nine sections. Section 5.2 begins with the state's structure focusing on actors and politics related to water resources management in Cambodia. It provides first hand information on important actors who are involved in dealing with water related development, their interest and level of influence in decision-making from the national down to the provincial and local levels. Section 5.3 discusses the Cambodian government's interest in water related resources development. Section 5.4 examines the governmental response to the February 2000 flood caused by water release from Yali-Falls dam. The aim is to explore how responses have been organized by various governmental agencies in relation to this catastrophic event and what mechanisms have been established to mitigate impacts. Section 5.5 provides deeper analysis of how mitigation measures have been implemented and to what extent they were successful. Section 5.6, 5.7 and 5.8 discuss issues related to water quality, impact assessment and compensation, respectively. These three sections explore processes of intervention, strategies and tactics of various actors in dealing with the above respective issue. Finally, section 5.9 provides the conclusion of the chapter.

5.2 State's structure: actors and politics related to water resources management

Cambodia is a constitutional monarchy with the King as a head of the State. The King reigns as a symbol of unity but does not govern the nation. Governing power falls within three branches of the state's structure including legislative, executive and judiciary (see figure 5.1). While the National Assembly and Supreme Court hold legislative and judiciary powers respectively, the Council of Ministers exercises a vast executive power and enjoys the status of Royal Government of Cambodia (ADB, 2000). In this analysis, the Royal Government of Cambodia (RGC) is identified to hold a great role in exercising water resources development and engaging in the management of the Se San River. In so doing, in this section I attempt to explain the structure of the government so that the concerned actors across the state and their political power will be revealed. The structure of the government consists of national and sub-national governments as described in the following two sub-sections.

Figure 5.1: Governance Structure of the Public Sector in Cambodia, 1999



Source: ADB, 2000

5.2.1 National government: line ministries and inter-ministerial committee

At national level, the structure of the central government follows the hierarchy of Prime Minister, Deputy Prime Ministers, Senior Ministers and Ministers (see figure 5.1). While the Council of Ministers is led by the Prime Minister, the Office of the Council of Ministers – which is led by a Senior Minister – is established to assist the Prime Minister. This Office is the highest administrative unit that guides and controls the agenda of the government for purposes of political coordination and administrative monitoring (ADB, 2000; United Nations, 2004). For instance, all draft laws, decrees and sub-decrees prepared by line ministries must be submitted to the Office of the Council of Ministers for review before discussion at a plenary session of the Council of Ministers (ADB, 2000). Twenty four line ministries are under the Office of the Council of Ministers (ibid.).

Line ministries are the state's actors whose responsibilities are authorized according to their sectoral technical capacity. In the water sector, the Ministry of Water Resources and Meteorology (MOWRAM) is empowered to manage water resources in the entire country. As Article 5 of Law for Water Resources Management puts it “the MOWRAM is mandated to manage, lead and supervise the implementation of the present law (RGC, 2007).” In addition, Article 10 of this law also stipulates that “the MOWRAM is mandated to manage the river basin, sub-basins, watershed run-off, groundwater and aquifers...” (ibid.). Since water is a crosscutting issue which falls within other sectors, several other ministries also tend to share some responsibility in the water sector. They include Ministry of Industry, Mines and Energy (MIME); Ministry of Rural Development (MRD); Ministry of Public Works and Transport (MPWT); Ministry of Environment (MoE); Ministry of Agriculture, Forestry and Fisheries (MAFF); Ministry of Health (MoH); and Ministry of Economics and Finance (MEF) (Hirsch et al., 2006; ADB, 2007; Öjendal, 2000).

Unlike the MOWRAM which is responsible for overall water resources planning and management, the responsibility of the other ministries falls within their individual sectoral jurisdiction. For example, while the MPWT is responsible for improvement of waterways and ensures safe navigation via dredging and navigation aids; the MIME is taking care of industrial water uses and hydropower development (see table 5.1). Some water resources responsibility is split between ministries. For instance, responsibility for the provision of drinking water is split between MIME, responsible for urban and provincial area as well as the regulation of the private sector involved in pipe water systems, and the MRD, responsible for the provision of drinking

water in rural area (ADB, 2007), particularly the installation of well for groundwater use (Pang and Khoun, 2000).

Hirsch et al., (2006) argue that the governance arrangements between these ministries do not appear to be well coordinated. Öjendal (2000: 200-201) points out the issue to be a result from poor communication and unwillingness to share information between the ministries. One of the arguments is that a water-related development project is perceived as a pool for money earning within a jurisdiction of an individual sectoral agency. For example an official told that “recently, hydropower development becomes a good investment in energy sector in Cambodia and it is good for MIME because it is the only technical agency where many foreign private investors have flocked in for requesting, bidding and contracting for this infrastructure’s study as well as construction (Interview 1.3.3).”

Beside the many sectoral ministries described above, an inter-ministerial committee namely the Cambodia National Mekong Committee (CNMC) exists to coordinate all water related activities in Cambodia and to discharge Cambodia’s obligation arising from the 1995 Mekong Agreement, which signed with other three riparian countries, Laos, Thailand and Vietnam (see chapter 3).

The establishment of CNMC dates back to the time of the creation of the Mekong Committee in 1957. However, CNMC was dissolved during the Khmer Rouge Regime in 1976. Although CNMC resumed its tasks in October 1980, CNMC was not part of the MC until April 1995. During that period, CNMC was affiliated within the MAFF with only one permanent official in-charge (Interview 1.1.2). CNMC was operated without its own secretariat until its first organizational restructuring to account more staff and responsibilities at the end of 1989.

After signing the 1995 Mekong Agreement, CNMC began its second organizational reform in February 1999. From this history, we can draw the conclusion that CNMC was under-staffed and operated without clear responsibility throughout the period. After the second major restructuring, CNMC carries an important advisory and coordination task in relation to the regional Mekong cooperation. Under the 1999 Government Sub-decree (RGC, 1999), CNMC became a new national inter-ministerial agency comprising ten line-ministries including: MPWT; MOWRAM; MoE; MAFF; Ministry of Foreign Affairs and International Cooperation (MoFAIC); MIME; Ministry of Planning (MoP); Ministry of Land Management, Urban and Construction (MoLMUC); MRD; and Ministry of Tourism (MoT).

Like the sectoral ministries, the CNMC is directly operated under the Office of the Council of Ministers. As Article 2 of the 1999 Government Sub-decree on Organizational Structure and

Functioning of the CNMC puts it, “the CNMC is a national institution accountable directly to the RGC (ibid.)”. Article 2 stipulates the mission of CNMC as follows (ibid.).

“to assist and advise the latter [the RGC] in all matter relating to the formulation of water policy and strategy, management, preservation, investigation, planning, restoration and development of the water and related natural resources of the Mekong River Basin in the country, to contribute to the sustainable development of national economy and infrastructure for the benefit of the country and people.”

To achieve this mission the CNMC is entrusted with the following functions (ibid.).

- To study and advise the government on all matters related to the planning, formulation of strategy for development, management and preservation of the Mekong River water and related resources;
- To cooperate with and follow up other institutions concerned, including line agencies, provincial and municipal authorities in implementing all relevant decisions of the government relating to the Mekong River; and
- To promote cooperation with other member States’ National Mekong Committees and donor community in the investigation, development, management and preservation of the Mekong water and related resources, in conformity with the principle of equitable and reasonable benefit for all member-states.

Presently, the CNMC is headed by one chairman, and assisted by two vice-chairmen. Taking into account the increasing role of MOWRAM in water resources management, the Minister of MOWRAM became the chairman of CNMC in 2003 replacing Minister of MPWT who chaired since 1957 (Muukkonen, 2007). The two vice-chairmen are the Minister of MoE, and the ex-Director General of the MAFF. The latter oversees day-to-day work of the CNMC Secretariat. The CNMC Secretariat is assisted by the Secretariat General whose main mandate is to render technical and administrative services to the CNMC and its Executive Commission (Pech, 1999). Under the sub-decree of 10 February 1999, the Secretariat General is entrusted with the following responsibilities (ibid: 18-19).

- To coordinate with the MRC Secretariat and NMCs of the member-states in all matters and activities relating to the Mekong River Basin;
- To provide advice and regularly report to the CNMC chairman;
- To coordinate all activities and work of the CNMC;

- To propose Work Program to the MRC in conformity with the projected plan of the CNMC management, to seek for assistance;
- To monitor, advise and evaluate the result of the implementation of the works undertaken by the entities within the CNMC Secretariat and those of the line-ministries;
- To prepare progress reports on all activities and the status of the works within the scope of the CNMC's mandates.

Although the CNMC is the only cross-sectoral body capable of an overall water coordination and responsibility in the country, it is often described as a “weak body because it only plays a secondary role in water resources management as compared to the regular line ministries (Öjendal, 2000: 201).” According to a finding of an evaluation study, Pech (1999: 23) concluded the claims from respondents that, “certain officials make a complaint that the CNMC Secretariat most of the time reduces itself to the role of mail box and fulfilling only the logistic functions.” This source also claims that the CNMC is sometimes unaware of projects related to water resources development in the Mekong basin which have received funds from bilateral or multilateral donors, or private sector channels. In some cases, Cambodia fails to inform the MRC Secretariat and subsequently has difficulties in giving notice or consultation with the MRC member-states as required by Article 5 of the Agreement. For example, a senior official of the CNMC complained that “recently, we have not been informed about the pre-feasibility study of Sambo hydropower dam on the Mekong’s mainstream which has been granted to a Chinese firm by the MIME. We were confronted with the VNMC’s question about this study during a meeting. Fortunately, we were able to answer about this planned study which we just knew it through newspaper before coming to the meeting (Interview 1.1.2).”

Table 5.1: State’s actors involved in water resources management in Cambodia

No.	State actor	Responsibility
1	Ministry of Water Resources and Meteorology (MOWRAM)	<ul style="list-style-type: none"> - Overall water resources development planning and management - Research and investigations of water resources - Data and information gathering and management on surface water, groundwater, and meteorology - Irrigation planning, water use management, hydrological and meteorological and monitoring networks, ground water monitoring and mapping, water supply and multi-purpose projects - Administer international collaboration, including that within the Mekong River Basin
2	Ministry of Industry, Mine and Energy (MIME)	<ul style="list-style-type: none"> - Industrial water uses and hydropower planning - Provision of drinking water in urban and provincial areas
3	Ministry of Rural	<ul style="list-style-type: none"> - Provision of drinking water in rural areas (ground water)

	Development (MRD)	- Education of community in safe water supply practices
4	Ministry of Public Works and Transport (MPWT)	- improvement waterway planning, and ensures safe navigation via dredging and navigation aids
5	Ministry of Environment (MoE)	- Protection of natural resources and environmental quality - Disseminate water related information - Water quality monitoring and pollution control, including monitoring wastewater discharges and issuing permits
6	Ministry of Agriculture, Forestry and Fisheries (MAFF)	- Improvement of fisheries management practices by incorporating into planning of water management project - Forest and watershed management
7	Ministry of Economics and Finance (MEF)	- Compiling the government's Socio Economic Development Program and Public Investment Program. To the extent that water related investments are proposed in a number of different components of the programs, MEF has the role of harmonizing proposals, and matching them for investment priorities.
8	Ministry of Health (MoH)	- Controlling the quality of surface and ground water used for public water supply, as well as for health education and other matters related to public health
9	Cambodia National Mekong Committee (CNMC)	- Advise the Cambodian representative to the MRC Council on all matters relating to activities within the Mekong River Basin that could affect Cambodia interests - Review proposals prepared by RGC agencies in the light of the Mekong Agreement - Provide coordination between MRC and concerned ministries

Source: Adapted from An and Mao, 2002; and Pang and Khoun, 2000

5.2.2 Sub-national government: province, district, commune and village

Beside the national level of formal organization, the state administration also constitutes a sub-national government which follows the hierarchy of province, district, commune, and village. The province represents an important administrative and political arm of central government. The provincial governor is appointed by the Prime Minister. By sub-decree, the Ministry of the Interior is in charge of administering provinces. Therefore, the provincial governor is accountable to the Minister of the Interior. With regard to the Se San issue which has an international implication, solution toward this issue cannot be done by the provincial authority alone but in consultation with or by the national government.

Apart from provincial authority, line departments are present but are not directly under the control of the provincial governor but they are accountable to their respective ministry at national level. However, their decisions have to pass through the provincial governor before heading to their respective ministry. Since line departments are not directly under the provincial authority,

they are vertically influenced by their respective ministry. For example, in regard to the effects of hydropower dams on the Se San River a senior official told that, “in the past, NGO requested our department to comment on one of the Se San Reports, but we refused such request because we were not involved in the research. If the report is exaggerated we will be fired by our ministry (Interview 4.2.10).” It should be noticed that a line department is usually operated with limited human and financial resources, particularly in a remote northern region like Ratanakiri province. During my fieldwork, I heard about complaints regarding limited budget received from the central government which was not even sufficient to run daily operational costs of the office, not to mention sufficient budget for development or research. Sometimes there is a need to reallocate or shift some portions of development budget into operational budget in an adjustable manner, thereby resulting in reduction of development activities (ibid.).

The district is the lowest administrative and political arm of the central government under the supervision of the provincial governor. At the district level some crucial district office are present such as office of agriculture, health center and schools. In the past, the district took a main responsibility to ensure security but since the country is at peace the district authority has shifted its role towards development in recent years. Shifting from security to development has created difficulties for the district authority in some ways. Firstly, the district has low capacity in term of formulating its own district development plan and executing project implementation. During the past ten years, the districts have been receiving support from central and provincial governments but little has been improved, such as data collection and reporting systems are not properly recorded or in place. This is even more severe for the four remote districts, where I have visited, with high illiteracy rate in the country. Secondly, the district has limited budget to run its development activities as the budget is small.

Below the district level is the commune where the state government has devolved power to the commune to represent a lowest level of the state in the name of local government. This local government is elected by the local community every five years. The first election was held in 2002 and the second election in 2007. The local government receives budget directly from the central government via the provincial government and it is under the supervision of the Ministry of the Interior. However, the local governments are more accountable to the local community as they are close to them. Though they are under the supervision of the Ministry of the Interior, they tend to have less political influence by their superiors than the provincial and district authorities. This is, perhaps, due to the distance of relationship of influence between the state and the local community, particularly in the poor remote areas along the Se San River. For instance, during my

fieldwork, I observed that most of local governments are anti-hydropower dam building and they take full effort against dam building. This is due to the fact that they are living along the Se San River and therefore they are also directly affected by the dam which causes harm to their livelihoods.

Down to the lowest level of the local government system is the village. The village is led by a village council headed by a village chief. The duty of the village chief is to assist the commune council on matters relating to security, public order, and social and economic development in the village. Since the village chief is appointed by the commune council, the village chief is accountable to the commune council.

5.3 Cambodia interest in water resources development

Cambodia is a country rich in water resources and natural fisheries. One of the most significant sources of this resource is the Mekong as almost 86 percent of Cambodia's territory lies within this basin. This proportion is correspondent to an area of the Mekong basin located in Cambodia which represents 155,000 km² as compare to 181,035 km² of total land area of Cambodia (MRC, 2003). According to MRC (2005), the Mekong basin provides about 85 percent of Cambodia's labor force in agriculture and fisheries, contributing about half of the country's GDP.

Regarding the agriculture sector, there is no doubt that Cambodia is interested in increasing agricultural production for its own food security and export since Cambodia is an agricultural country and remains one of the poorest countries in the world. Till now, the practice of agricultural cultivation depends on seasonal rainfall which is irregular and prone to drought and floods in many parts of Cambodia. In most part of Cambodia, only one rice crop a year is normally cultivated – compared to two, or even three, in many parts of Southeast Asia. The rice yield per hectare is frustratingly low in Cambodia, approximately 1.97 ton in 2005 (RGC, 2006). The National Strategic Development Plan 2006-2010 envisaged the need to enhance restoration and expansion of the irrigation system and network as well as improving the cropping method and increasing the number of crops per year. However, Se San seems to be the least priority area since one may hardly find the existence of an irrigation scheme. One of the reasons, perhaps, is the fact that Se San region is hilly and not densely populated as compared to other lowland regions in the country.

The fishery sector is an essential contributor to the Cambodia economy, both as direct subsistence and as an important source of income. The MRC report shows that the annual Cambodia's inland fish catch is estimated at 400,000 tones and worth over US\$300 million (MRC, 2003). Although

a large proportion of this catch is said to come from the Tonle Sap Lake (Great Lake) which is the largest body of freshwater in Southeast Asia (ibid.), the other Mekong's tributaries also influence this catch through the fish migration system. Indeed, the MRC (2002a: 32-34) has identified that the rise in water levels at the beginning of the flood season triggers many migrating fishes to move from dry season habitats in the northern tributaries (such as Se San) towards the floodplain habitats in the Tonle Sap Lake. And vice versa, many species extend their migration routes into the Se San tributary system for deep pool habitats in the dry season (ibid.). Such movement provides reproduction and distribution of fish, which is the primary source for protein intake of most rural livelihoods. Prahok, a fermented fish usually harvested during peak fish season, provides a culturally important diet for most of the Cambodian population. It is also a very essential source for remote population in the Se San region as it is cheap and can be stored a long period. However, ecological degradation, newly arrived fish diseases, unsustainable fishing methods, negative impact from fertilizer and pesticide use, siltation of the Tonle Sap, over fishing and eradication of wetland have resulted in reduction of fish catches (Öjendal, 2000). As fisheries play an important role in Cambodian economy, Cambodia is largely interested in protecting natural fish as well as promoting aquaculture in the country. However, there is currently a critical debate arising from civil society regarding planned hydropower cascade construction in the Mekong's mainstream and tributaries by the government. The civil society perceives that construction of medium and large-scale hydropower infrastructures will cause major destruction to river ecology and fisheries as they manipulate natural flow and interrupt fish migration between the Mekong and the Tonle Sap Lake.

In regard to hydropower development MIME (2006) indicated that Cambodia has potential to generate hydroelectricity approximately 10,000 MW, 55 percent of which is to be found in the Mekong River Basin, both on the Mekong mainstream and its tributaries. However, up until 2006 less than 15 MW has been tapped from the Mekong's tributaries (ibid.). The development strategy of the Cambodian government is articulated in the "Rectangular Strategy for Growth, Employment, Equity and Efficiency," which covers the period 2003 to 2008. Emphasizing the need for low-cost electricity to sustain Cambodia's economic growth, the development of energy sector and electricity network constitutes once side of the strategy stressing on "Growth". According to the strategy, the Cambodian government will promote private sector participation in electricity production and distribution, and support power transmission grids that facilitate electricity imports from its neighboring countries (International Rivers and RCC, 2008).

Electricity demand in Cambodia is forecast to increase more than fivefold from 284MW in 2005 to 1,539MW in 2020 (MIME, 2006). To meet the demand, MIME has prioritized nine large hydropower projects with the total capacity from 1,983MW to 4,133MW for development between 2010 and 2020 (Ryder, 2009) (see table 5.2). According to table 5.2, the largest proposed generation project is the Sambor hydropower dam on the Mekong mainstream near Kratie province. China Southern Power Grid Company is conducting a feasibility study for Sambor, which could have an installed capacity of 450MW or 2,600MW depending upon its final configuration (ibid.). The second largest proposed hydropower project is the lower Se San 2 project with an installed capacity of 420MW. The project is located about one kilometer upstream from the confluence of Se San and Sre Pok Rivers.

Table 5.2 Hydropower Development Plan 2010-2020 Generation Projects in Cambodia

No.	Project name	Installed generating capacity	Year operation
1	Kirirom 3	18	2010
2	Kamchay	193	2010
3	Atay	120	2012
4	Lower Stung Russey Chhrum	338	2013
5	Tatay	246	2015
6	Lower Se San 2	420	2016
7	Lower Se San 1	90	2015
8	Stung Chhay Areng	108	2017
9	Sambor	450/2600	2019
Total		1983/4133	

Source: Adapted from Ryder, 2009

5.4 Governmental response to February 2000 flood event caused by water release from Yali-Falls dam

5.4.1 Immediate response of national agencies

Two important events took place in response to flood event caused by water release from the Yali-Falls dam at the end of February 2000. First is the fact-finding mission by officials of MOWRAM, conducted a few days after the flood took place. Second is the reaction of the CNMC in notifying its VNMC counterpart through the MRC Secretariat on the effects of water release and to seek solution in accordance with the 1995 Mekong Agreement.

After receiving a report from Ratanakiri Department of Water Resources and Meteorology, officials of MOWRAM immediately fielded a fact-finding mission to the affected area. The

mission studied the effects of flood in three downstream districts in Ratanakiri province from 5 to 8 March 2000. The report of the mission, which was addressed to the Minister of MOWRAM, provides brief preliminary information on the flood situation serving as a basis for informing and recommending decision-maker to take further actions. The mission made several conclusions as follows (MOWRAM, 2000):

- i. In the last five years there has been remarkable change in the Se San flow regime for example increase in number of flash floods in the wet season and abnormal fluctuation of the water level in the dry season;
- ii. The impact could be caused by construction of the Yali hydropower dam in Vietnam;
- iii. There is severe impact on the Se San fisheries due to low level of water;
- iv. There are three affected districts along the Se San River; Veun Sai district is the most affected.

With the above findings, the mission suggested three recommendations as follows:

- i. Study on flow regime at Veun Sai district and at the Cambodia/Vietnam border;
- ii. Enter into discussion with the Vietnamese authorities to find out solutions;
- iii. Through the CNMC, it is necessary to bring this matter to the MRC Secretariat.

According to the last point of recommendation, the mission took note the important role of the CNMC whose responsibility is to coordinate water use across sectoral ministries to abide the 1995 Mekong Agreement and who has the mandate to undertake a communication role beyond national jurisdiction to inform, question or clarify the other member states when the effects of water resources use by those states harms its people. This is to comply with what Pech (1999:16) wrote in his assessment that “in an international arena, the CNMC has to look after and defend the legal rights and legitimate interest of Cambodia that may be affected by development activities in the Mekong Basin outside Cambodia.”

In this regard, the CNMC undertook its role to inform and request the MRC Secretariat to clarify the issue with the VNMC regarding water release from the Yali-Falls dam. As a senior official at the CNMC puts it, “after we had received information about flood event in early 2000, the CNMC immediately notified and questioned the VNMC through the MRC Secretariat on the effects of water release from the Yali-Falls dam (Interview 1.1.5).” According to the MRC (2000a), the CNMC notified the MRC Secretariat on 6 March 2000 that “... according to the officials of the Ratanakiri Province of Cambodia, flows released from the Yali reservoir in the

Central Highlands of Vietnam has caused flooding and damages to some lowland areas along the Se San River in that province.” Being an administrative and technical arm of the MRC, the MRC Secretariat immediately conveyed the message to the VNMC requesting related information for clarification with the CNMC and proposing field visit for discussion on the matter (ibid.). Since the VNMC performs only a coordinating task between line ministries in Vietnam, the question was therefore forwarded to the responsible ministry. On 15 March 2000, the VNMC conveyed the message from the Ministry of Industry that:

“...from 28-29 February 2000, because of technical problems, some components of the dam had to be improved before official date of operation. Therefore, a discharge of about 500-600m³/s released downstream caused inundation of some lowland areas along the river (VNMC, 2000).”

As a way forward, the VNMC suggested and informed the MRC Secretariat that:

“We were informed that the Secretariat have sent a mission to the Ratanakiri province for assessment of the actual damages. We would highly appreciate the Secretariat efforts to provide us with related information such as the time when inundation occurred in Cambodia, water level, population and cultivation situation in the past year and at present and etc.

VNMC has committed to cooperate with other NMCs for the sustainable development of the Mekong River Basin. We are very willing to welcome the mission from the Secretariat and CNMC to discuss about the issue (ibid.).”

Action taken by the CNMC through the MRC Secretariat yields other outcomes. With the CNMC’s request, the MRC Secretariat sent a team of three personnel for a fact finding mission to the affected area in Ratanakiri province from 16 to 19 March 2000. The team visited three downstream districts (Andong Meas, Taveng and Veun Sai) which were considered to be heavily affected. The team met and interviewed a number of key persons including provincial deputy governor, director of provincial department of water resources and meteorology, district chiefs, and a nurse at the Catholic Office for Emergency Relief and Refugees (MRC, 2000b).

The fact finding mission made several conclusions but the concrete one stresses that “there were some negative effects, including some incidents of death by drowning, losses of fishing equipment and reduction in fish catches and in crop production due to abrupt water released from the Yali reservoir (ibid.).” Although fact finding mission concludes that there were negative effects from water release from Yali dam, it failed to assess the magnitude of the impacts and the

damages caused by water release from the dam. In turn, it recommended the provincial and district authorities, who were constrained with finance and capacity, to compile information on the damage for reference. As a way forward, the team also made other four crucial points of recommendation as follows (ibid.).

- A visit to the Yali hydropower project should be arranged soonest for discussion on appropriate mechanism related to the reservoir operation and warning system, as well as provision of adequate information in a timely manner. Participants should include provincial and district officials, CNMC, VNMC, MRC Secretariat as well as other direct parties concerned, such as hydropower authorities;
- MRC Secretariat should specify procedures for information exchange for projects with potentially adverse effects during project construction and operation periods;
- The envisaged equipment to measure water level and discharge at Andong Meas and Veun Sai hydrologic stations should be put in place by MRC Secretariat for monitoring purpose;
- The National Mekong Committees of both Cambodia and Vietnam, as well as the Joint Committee, should be informed about the fact finding and related recommendations on further actions.

The report of the MRC fact-finding mission was ready in time before the 11th MRC Joint Committee meeting which took place in Ho Chi Minh city from 28 to 29 March 2000. It serves as the basis for discussion and negotiation between the two parties to find further actions for solution. For such purpose, an informal meeting between the MRC Joint Committee Members of Cambodia and Vietnam was held right after adjourning the first day of the 11th MRC Joint Committee Meeting. Participants from Cambodia side include the CNMC's Vice-chairman, Director General and Department Director. Participants from Vietnam side are the VNMC's Vice-chairman and Secretary General. The MRC Secretariat's Chief Executive Officer (CEO) and his assistant facilitated the meeting. While the VNMC's Vice-chairman expressed his regret over the damages and losses caused by the released water, the CNMC's Vice-chairman emphasized the importance of in-time information (MRC, 2000d). As he suggested, "the authorities in Cambodia needs at least some days in advance to inform local people who live in very scattered settlements without telecommunication facilities (ibid.)." As a way forward, both parties agreed that a visit to the Yali hydropower project shall be arranged soonest to discuss the issue with the participation of the MRC Secretariat, the CNMC, the provincial authorities, the VNMC, the hydropower authorities, and other concerned agencies in Cambodia and Vietnam.

Beside a number of actions taken by national agencies through the framework of the MRC, responses taken by border provincial authorities, which will be discussed in the following section, were also important.

5.4.2 Responses of border provincial authorities

Ratanakiri is a border province in which provincial authority enjoys the right to hold a direct communication with its counterparts, Gia Lai and Kontum provinces in Vietnam to settle cross-border issues (Interview 1.1.1). The issue of February 2000 flood caused by water release from the Yali-Falls dam in Vietnam was not exceptional. According to Raksmeay Kampuchea Newspaper issued on 25 March 2000, the Minister of Public Works and Transport, whose position was also the CNMC chairman until 2003, told the news that “we have advised Ratanakiri provincial authority to directly discuss the issues with the Vietnamese provincial authorities to find immediate solution (Raksmeay Kampuchea Newspaper, 2000).” Consequently, the meeting between the provincial authorities from Ratanakiri, Gia Lai and Kon Tum provinces took place in early April 2000 (MRC, 2000c). The Management Board of the Yali Hydropower Project (MBHIP) was also present in the meeting (ibid.). In the meeting between the two parties, Ratanakiri provincial authority urged the Vietnamese authorities and the MBHIP not to repeat the discharge of water without warning (Phnom Penh Post, 2000a). In response, the Vietnamese provincial authorities apologized for the incident and assured no more water will be released without adequate warning to Cambodian residents along the Se San River (ibid.). As an immediate solution to the issue, the two parties agree that “initial arrangements for gradual water release and information exchange shall be made between the provincial authorities concerned (MRC, 2000c).”

During the meeting, the provincial authority of Ratanakiri province did not ask for compensation of losses and damages caused by water release from the Yali-Falls dam. In an interview with Phnom Penh Post in April 2000 the provincial governor told that “the physical damage had not been too great and the Vietnamese authorities had just provided ten tones of rice seed to Ratanakiri province (Phnom Penh Post, 2000a).”

The statement by the Ratanakiri province seems to show that cooperation among border provinces of Ratanakiri, Gia Lai and Kon Tum is favorable in term of personal, political and economic development ties. According to the report of fact-finding mission, the deputy governor of Ratanakiri province told the MRC Secretariat mission team that “the cooperation between Ratanakiri and Gia Lai – Kon Tum provinces are very good in all aspects. Ratanakiri authority

knew very well about the progress of the Yali hydropower project construction. The deputy governor and other provincials of Ratanakiri have frequently visited the project during its construction in the past few years (MRC, 2000b).” As part of development cooperation, Gia Lai province of Vietnam has also financed Ratanakiri province to build a provincial dormitory, a market and three schools near the border amounting to more than three million U.S. dollars during the past years (Vietnam Ministry of Foreign Affairs, 2005). One of the schools was constructed in Phi Village of Oyadao district along the Se San River. This financial assistance shows that the Vietnamese provincial authorities have a dominant power over its Cambodian counterpart in the discussion of the Yali-Falls dam issue.

5.4.3 Establishing mechanism for negotiating mitigation measure

In pursuance of the decision at the informal meeting between the MRC Joint Committee Members of Cambodia and Vietnam in March 2000, a visit to the Yali project site by Cambodia officials for discussion and negotiation took place from 20 to 22 April 2000. Two important members from Ratanakiri province were engaged including provincial governor and provincial department of water resources and meteorology. At the national level, key persons from concerned agencies and ministries were involved including the CNMC, MOWRAM, MIME, and MoE.

The host country consists of key personnel and experts from the VNMC, EVN and MBHIP. A team of three senior personnel from the MRC Secretariat who were involved in the earlier MRC fact-finding mission were tasked to facilitate the meeting between the two negotiating parties. While the MRC Secretariat financed related expenses for Cambodia delegates such as travel and accommodation, EVN was responsible for the costs related to the meeting, field visit, and the Vietnamese representatives.

The negotiation between the two parties was mainly centered on finding an appropriate mechanism for information exchange to minimize adverse downstream effects in relation to reservoir operation. At the final decision the two parties agreed on five measures on information sharing and management of reservoir operation. The five measures read as follows (MRC, 2000c):

1. Information on reservoir operation, in particular water release, under normal and extreme conditions, be exchanged sufficiently in advance through appropriate channels. Similarly, information on river situation in Cambodia be transmitted in the same manner;

2. Water release from the Yali reservoir be gradually varied, so that people along the Se San River can recognize changes in water level and take precautions accordingly;
3. Under normal circumstances, about 15 days advance notice on changes should apply, through NMCs, relevant provincial authorities and the MRC Secretariat;
4. Under emergencies and extreme flood situations, warning be immediately dispatched directly to relevant levels; and
5. The environmental mitigation studies, if needed, will be discussed later, with the participation of the MRC.

To have the five measures formalized, the meeting requested MRC Secretariat to arrange a follow-up action by submitting the preliminary agreement on the five measures for approval by higher authorities within the framework of the MRC. Subsequently, the five measures were approved by VNMC's and CNMC's chairmen in early June and July 2000, respectively.

In order to implement, monitor and follow-up the progress made in regard to the five measures, a mechanism called the Cambodia-Vietnam Joint Committee for the Management of the Se San River was established for information exchange on the Yali reservoir operation between Cambodia and Vietnam.

On the Cambodian side, Cambodian Committee for Management of the Se San Water Utilization was established on 11 August 2000. The Cambodian Committee was composed of six members including representatives from MOWRAM (including its provincial department in Ratanakiri), MIME, MoE, MAFF, and the CNMC Secretariat. While CNMC is the secretariat of the Cambodian Committee, MOWRAM and Ratanakiri Department of Water Resources Management and Meteorology are chairman and vice-chairman, respectively (SPN, 2002c).

In Vietnam side, Vietnamese Advisory Committee for Operation of Hydropower Schemes of Se San River was established on 26 December 2000. The Vietnamese Committee consists of representatives from Ministry of Industry (MoI), MARD, EVN, VNMC, the People's Committee of Gia Lai and Kon Tom Provinces.

The two committees agreed that the meeting of Cambodia-Vietnam Joint Committee shall be held annually with a host rotation between the two countries (interview 1.1.3). While the expenditure for travelling and accommodation by the committee's members is born by each side, the host country takes responsibility for logistic arrangements of the meeting and covers the costs thereof.

Subsequently, the two committees met annually in 2001, 2002 and 2003. The three meetings mainly focused on establishing and strengthening notification system of water release warning, conducting water quality analysis, and drafting Terms of Reference (TORs) on Hydrodynamic Modeling and on Environmental Impact Assessment (EIA) of Se San River. The outcomes of the meetings are discussed in sections 5.5, 5.6 and 5.7.

The meeting of Cambodia-Vietnam Joint Committee came to a halt when the Cambodian Committee for Management of the Se San Water Utilization was dissolved and transferred its responsibilities to Cambodian Standing Committee for Coordination of Dams and Canals along the Cambodian-Laos-Vietnam-Thailand Borders on 23 January 2004, due to the fact that the later did not have budget to organize the meeting.

The fourth meeting however was held with financial support from Vietnam in 2008. The meeting discussed on the implementation of five measures agreed in April 2000, and the result of Hydrodynamic Modeling and EIA of Se San River. The lack of budget on the Cambodian side shows that the Se San issue has not been given a high priority by the central government.

Through meetings between Cambodia and Vietnam Committees, a number of outcomes will be discussed in the following sections.

5.5 Mitigation measures

5.5.1 Failure of notification system

As seen in the previous section, the urgent measure is to have a notification system in place to mitigate losses from water fluctuations by informing villagers when releases will occur. According to a senior official of CNMC, two mechanisms of water released notification have been established (Interview 1.1.1). Firstly, the notification mechanism is done between provinces, meaning that flow release information is directly transmitted from the Yali-Falls hydropower plant to Ratanakiri provincial governor office and then to the provincial department of water resources and meteorology. The later interprets the technical information on flow release in local terms, for instance the duration of high water level fluctuation, and dispatches it to district for further distribution to commune and to villagers living along the Se San River for advanced warning. The second form of notification scheme is done at country to country level within the MRC framework, meaning that information on water release is sent from Vietnam to Cambodia through the MRC Secretariat. That is, the information flow follows a long procedural line from the Yali hydropower plant to the VNMC, to the MRC Secretariat, to the CNMC, to the provincial

governor office, and to provincial department of water resources and meteorology who then follows the same procedure of information distribution to local level as specified above.

The delivery of notification is done through the existing facility from the dam site to local community. While fax is a means for information delivery from the dam site up to the Ratanakiri provincial governor office, telegraph is used to convey the message further to district via district police military office who owns the facility. From district to commune and village level, letter and the words of mouth are the means to reach villagers living along the Se San River.

During my field work, I was informed that communication facility in Ratanakiri province is very bad. At a time when a fax machine at the provincial governor office did not function or broke down, the message has been transmitted through the provincial treasury department or Cambodia national bank in the province, which further delayed the process of delivery. The same is true at the district level where most of district police military offices own very old and poor telegraph machines. When the telegraph machine breaks down, a letter is sent from provincial level to local level through whichever district authorities are visiting the provincial office for a meeting (Interview 4.3.5). As such, the procedure of this communication adds more delay to the already late delivery in the province.

The issue of poor communication system on Cambodia side was immediately reported during the first meeting of Cambodia-Vietnam Joint Committee which took place in Nha Trang, Vietnam on 26 July 2001. To strengthen the communication facility, the two committees requested the MRC Secretariat to extend assistance in providing necessary communication facilities and equipments to the Cambodia side (Cambodia-Vietnam Joint Committee, 2001). However, such request has not been realized since the MRC Secretariat has no such budget to cover. Eventually, the communication still remains an issue to be addressed again and again in the second, third, and fourth meetings between the two committees on 9 April 2002, from 4-7 November 2003, and from 4-5 March 2008, respectively.

Some examples of failure of notification system were discussed extensively by a team of Harvard Law School who were invited by NGO Forum on Cambodia in Phnom Penh to conduct a study, in 2005, entitled “Down River: The Consequences of Vietnam’s Se San River Dams on Life in Cambodia and their Meaning in International Law.” The study found that the level of notice received by villagers is getting through on an erratic basis and late and does not spatially distribute to all villagers (NGO Forum, 2005). According to this study, many villagers informed the team that they have received some notifications but not all. They pointed out that sometimes

the rise of water level had occurred without warning. Sometimes the information did not accurately predict when water surges would occur – sometimes occurring two days after the notified date – and in other instances warned them too late, causing not enough time for them to prepare for the surge (ibid. p. 54-55). While some villagers receive notification, others said that they have never receives warning from the government about surges. A village doctor in Patang village in Oyadao district told the team that “he had never been contacted about water releases (ibid: 55).”

While there are poor communications at local level, notification seems to have been occasionally interrupted at the main source. The provincial department of water resources and meteorology informed that during the first half of 2007, there were no notifications on water release from Vietnam (Interview 4.2.4). The reason for such interruption was unknown (ibid.). Further, the notification from Vietnam was also interrupted during the first quarter of 2008. For instance, during the fourth Cambodia-Vietnam Joint Committee meeting which took place in Pleiku (Vietnam) from 4 to 5 March 2008, the Secretary General of CNMC informed its VNMC counterpart that “for some last months Cambodia side did not receive information on water release from the operation of Yali Hydropower Plant (Cambodia-Vietnam Joint Committee, 2008).” Responding to the issue, the Vietnamese delegation said that “there may be a fax transaction matter between Yali Hydropower Company to the CNMC (ibid.). In this regard, the company provided to Cambodian delegation copies of faxes notifying water release since the last three months. As a word for suggestion, the Yali Hydropower Company suggested that “water release notification recipients should inform the Yali Hydropower Company of their updated fax addresses (ibid.).”

The response from the Yali Hydropower Company regarding the interruption of notification sheds some lights on why there were no notifications during the first half of 2007. The prolonged interruption of water release notification in 2007 and 2008 shows poor communication and coordination between agencies across countries. With no notification for quite some time, the provincial department of water resources and meteorology should have questioned the Yali Hydropower Company via the CNMC, the MRC Secretariat and then the VNMC. The same for the Yali Hydropower Company, knowing that the water release notification has not reached its recipients due to undelivered fax message, the company should have sent the notification through the VNMC, the MRC Secretariat and then the CNMC. This also means that the second mechanism of notification system which follows the line from the Yali dam to the CNMC

through the MRC Secretariat was not properly implemented at least during the first quarter of 2008.

The above discussion shows that the implementation of water release notification which aims at mitigating adverse effects on local community was not fully and effectively implemented. With no proper communication facilities and equipment being available, the notification measure is hardly a success. For example, a vice-district chief of Taveng made a suggestion to the Yali Hydropower Company during an EIA workshop jointly organized by the VNMC and the CNMC in Phnom Penh in early July 2007 that “unless a telecom facility is installed from provincial down to village levels, the villagers are not able to receive notification and be prepared in time and therefore prevent them from being caught by unexpected surge (Author’s field note on 5 July 2007).”

5.5.2 Monitoring and mitigating water level fluctuation

After the February 2000 flood event, installation of water level and rain recording stations was seen by the MOWRAM as an important water level monitoring system on the section of Se San River in Cambodia. On the request of the MOWRAM, the MRC Secretariat helped establish two water level monitoring stations – each in Andong Meas district and Veun Sai district – and one rainfall recording station in Andong Meas district in mid 2000.

While an hourly automatic data logger was set up and started recording in Andong Meas district at the end of June 2000, water level manual reading board was installed in Veun Sai district and began recording at the end of April 2000. Since the record of water level in Veun Sai district is done manually, a staff from Veun Sai district office was trained and tasked to record water level two times a day, at 7am and 7pm. The monthly record is sent to Department of Hydrology and River Works of MOWRAM in Phnom Penh via Ratanakiri Department of Water Resources and Meteorology. The Department of River Works and Hydrology stores and processes the received data to analyze the relationship between the operational hydropower at upper Se San and the downstream. For example, when the Yali reservoir was being repaired and filled in 2001, the river was dry in the lowland parts in Cambodia (Interview 1.2.1; SWECO, 2007). Immediately, the MOWRAM lodged a complaint through the CNMC and MRC Secretariat by showing water level record and asked for improving water flow (Interview 1.2.1). Consequently, Vietnam gave an apology and said they were doing repairs at the dam and closed the gates from April to July 2001 (SPN, 2002c). The hydrograph presented in figure 5.2 shows hourly water levels at Andong Meas Se San River from 2000 to 2002.

In chapter 4 we have already seen that water level fluctuation is one of the main issues. Half to one meter daily fall and rise of water level within a day is generally common (see section 4.2.2). The issue of water level fluctuation was raised by the Cambodian Committee during the third meeting of Cambodia-Vietnam Joint Committee in 2003. As a response, EVN constructed Se San 4A re-regulation reservoir located one kilometer from the Cambodian border to stabilize water flow downstream in Cambodia. The CNMC appreciated the construction. The construction began in November 2004 (SWECO, 2007) and put into operation in the dry season of 2008 (Cambodia-Vietnam Joint Committee, 2008).

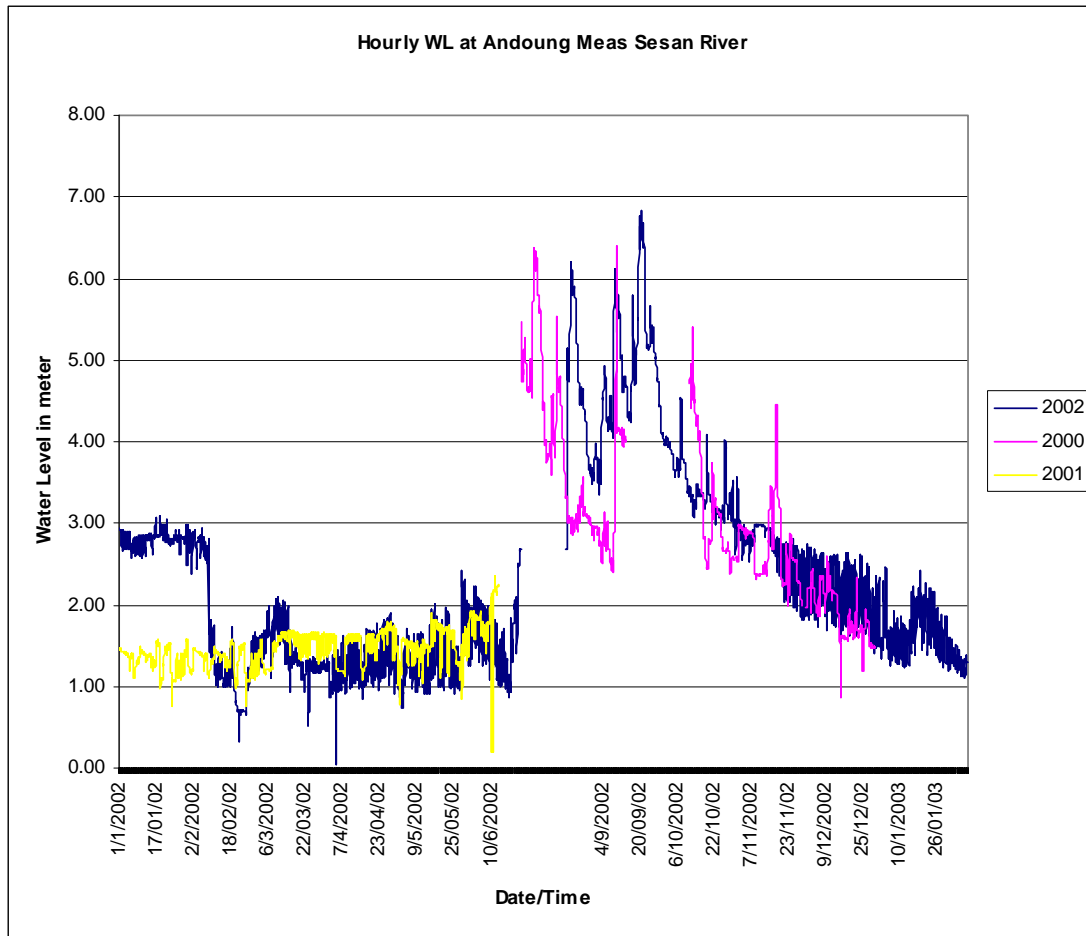
The minutes of the fourth Cambodia-Vietnam Joint Committee meeting in March 2008 stated that once the Se San 4A is put into operation the water flow of Se San River in the downstream Cambodia will be stable daily in the dry season. However, according to a recent press release by 3SPN (2009), the water level remains erratic in the dry season. This source quoted reports from villagers at Kachon Krom village in Ratanakiri province which stated that “the Se San River began to rise at around 8am on Sunday, 8 February 2009. By 11am the river had risen by nearly one meter and peaked at a measured water level increase of 85cm.” This press release also stated that “the riverside villagers had no advance warning that an upstream water release would occur even though the Vietnamese authorities had notified their Cambodian counterparts on 22 January 2009 that the Yali Falls dam would be releasing water downstream at the rate of 200 to 400 m³ per second between 1 and 28 February 2009.”

In this recent case, if the Se San 4A re-regulation reservoir were to put into operation since 2008, is it logical to only inform about flow release from the Yali Falls dam but not from the re-regulation reservoir which serves as a mitigation mechanism of water level variation at the final end at the border?

Although the EVN informed the Cambodian Committee during the fourth Cambodia-Vietnam Joint Committee meeting in early 2008 that the Se San 4A re-regulation reservoir is used to serve only for stabilizing water flow in downstream Cambodia, the functional status of this reservoir becomes unclear to Cambodians. A senior official asserted that “at the moment we are promised that Se San 4A is served to regulate and to stabilize water flow in downstream. However, we should know that such reservoir also has potential for electricity generation therefore the conversion can be made at any time (Interview 1.1.2).”

Nonetheless, the CNMC believes that this dam is a first step towards solving the Se San issue as it will help make the water flow similar to the natural flow (3SPN, 2006c).

Figure 5.2 Hourly water levels at Andong Meas Se San River from 2000-2002



Source: Data set obtained from Department of Hydrology and River Works, MOWRAM

5.6 The issue of water quality

Se San River has been mentioned by local community and officials in Ratanakiri province to have been polluted by upstream hydropower dam development. During a speech at the National Se San River Protection Network Workshop organized by NGOs in Phnom Penh on 27 November 2002, governor of Ratanakiri province complained of declining water quality of the Se San River as follows:

“If you spend a few days in the Se San area you will understand the issues of rise and fall of river, sickness of animals from drinking the water. When we talk about it, we are told we have no basis to support our argument. Please go and look for yourselves. Show the public, MRC that people, animals affected by quality of water caused by upstream development. I have seen with my own eyes a lot of problems in my own province. Poison, toxicity in river, we need examine further. Need for more exact measurement and

select samples from the right places, especially still water. Some organizations did only 2 day study, rushed back to Phnom Penh, could not get thorough results.” (SPN, 2002b)

At the first Cambodia-Vietnam Joint Committee meeting held on 26 July 2001, Cambodia Committee immediately raised the issue of poor water quality and requested that water quality analysis shall be carried out in both countries through the support of the MRC Secretariat. Vietnam Committee agreed to the request. To that end, the meeting decided that “the two sides shall make proposal to the MRC Secretariat to extend assistance in ... conducting water quality analyses for Se San River (Cambodia-Vietnam Joint Committee, 2001).”

Following the request from the committee, the MRC Secretariat designed and funded a one-year water quality monitoring program for the Se San River to be conducted from May 2004 to May 2005. Four sampling stations were chosen to collect water sample for analyses, one in Vietnam and three in Cambodia. In Vietnam, the selected site was at Pleiku district, located eight kilometers from Vietnam/Cambodia border. In Cambodia, a site close to the border located in Phi village of Oyadao district was selected. The other two sites were located further downstream at Andong Meas and Veun Sai districts.

The work involved two teams of water quality experts, one from Vietnam side and another from Cambodia side. Vietnamese experts monitored at the Pleiku station and Cambodian experts monitored the three Cambodian stations. The work of the two teams was coordinated and supervised by a program officer at the MRC Secretariat.

Water samples were taken from three sites across the river section – the left, the middle and the right side of the river and about 30cm under the surface. Left and right samples were taken approximately 20m from the bank to avoid still water and edge effects caused by land use nearby. The method of taking water samples contrasted with what the governor had stated earlier regarding sampling of still water.

Water sampling was done once every two months in the rainy season and once every month in the dry season. The MRC (2006a) cited the limitation of this water sampling frequency that “because potential water quality impacts in the rainy season maybe less than in the dry season due to dilution by larger river flows, and also because access to the sampling sites is very difficult in the rainy season, the sampling frequency was every two months in the rainy season from May 2004 to November 2004 and every month in the dry season from December 2004 to May 2005.”

The report of this monitoring project, which was compiled and synthesized by the MRC Secretariat in April 2006, was presented to the provincial government officials and NGOs in

Ratanakiri province on 14 June 2006. Important participants to this meeting were also officials from the Vietnamese hydropower management board, VNMC, CNMC and concerned line ministries from Phnom Penh.

The result of this monitoring project concluded that water quality of the Se San River is in good condition which can be used as a source of domestic water supply with appropriate treatment. This finding was disputed by NGOs who claimed that the report was useless as the parameters measured were far too general to measure the water quality and its impact on human health (3SPN, 2006d). According to the minutes of the meeting (MRC, 2006b), NGOs made several comments on the report. First, the monthly sampling was too long to monitor. This means that poor water quality can pass through the system between the sampling periods and the sampling result could not detect any short term changes to the water quality. In this regard, NGOs complained that water sampling should have been done weekly. The MRC Secretariat cited the limitation of sampling frequency due to remoteness of the areas where the samples were not easily taken. Second, parameters for water analysis did not take into account the health issues of local people which are attributed for water quality of the Se San River. The MRC Secretariat specified that some of the raised concerns related to skin rash and intestinal disease was not possible to address as the MRC Secretariat and cooperating laboratories does not have capacity to investigate microbiological or parasitological parameters. In the report, the MRC Secretariat recommended that “the CNMC should pursue this issue with the Cambodian Ministry of Health so that future complaints of water quality by villagers can be associated with specific clinical information as a basis for any next steps that might be taken to narrow the investigation to specific causal factors (MRC, 2006a).” Third, the monitoring project did not take samples in the reservoir to assess water quality. NGOs raised the issue that water release from reservoir contains toxic algae and this toxic algae has caused people sick and animal died.

In 2007, Probe International (2007) released a statement on the water quality of the Yali reservoir that “according to an EIA prepared by the Norwegian Institute for Water Research and Nordic hydro consultants: the analyses confirmed that there are strains of toxin-producing blue-green algae present in [Yali] reservoir and that the algae produces ‘exactly the same symptoms’ reported by downstream Cambodians.” Testing done in the Yali reservoir and downstream at the end of 2005 rainy season found concentrations of algal toxins that were too low to pose an immediate health threat (ibid.). However, the report warns that algal blooms can spread within a few days and that higher concentrations are likely in the dry season. The report recommends

testing the Yali reservoir every 14 days in the dry season and warns that algal blooms could appear in new hydro reservoirs along the Se San River for five to ten years after filling (ibid.).

The above discussion shows that water quality testing done by the MRC Secretariat is contrasting with the finding done by the Norwegian Institute for Water Research and Nordic hydro consultants. The study finding by the MRC Secretariat was disputed and rejected by the NGOs that supported affected communities. As a way forward, the Cambodian Committee requested the MRC Secretariat to further facilitate in monitoring water quality along the Se San River (Cambodia-Vietnam Joint Committee, 2008).

5.7 Negotiating for an impact assessment

During the visit of Cambodia delegates to the Yali-Falls dam in April 2000, a decision for impact assessment was reached that “the environmental mitigation studies, if needed, will be discussed later, with the participation of the MRC.” This decision was interpreted by EVN to mean that MRC is satisfied with the situation as it now stands and that further studies are not required (Nielsen, 2000). In response to this, the MRC Secretariat replied that “we have ... informed both parties that the envisaged environmental mitigation strategy is critically important and should be commenced at the soonest, with support of ADB and MRC (Kristensen, 2000). A senior official of CNMC claimed that during the visit to the dam site he has urged Vietnam to extend EIA to downstream in Cambodia (Interview 1.1.1).

Consequently, the issue of EIA was discussed during the first Cambodia-Vietnam Joint Committee meeting in Nha Trang (Vietnam) in 2001. Before the assessment could be carried out, a senior official of MOWRAM said that hydrodynamic modeling study should be initially undertaken for an input of EIA (Interview 1.2.3). To that end, EVN prepared term of references (TORs) of both studies for the purpose of discussion and agreement with its Cambodia counterpart before the implementation of the studies

TORs were presented to Cambodia delegates during the first Cambodia-Vietnam Joint Committee meeting in 2001. At the meeting EVN reported that the TORs which were prepared by SWECO-Sweden and Statkraft Groner-Norway international consultants were tentative and not complete because the international consultants have not yet dispatched to Ratanakiri province for a preliminary survey. And therefore, EVN requested Cambodia committee to coordinate the followings (Cambodia-Vietnam Joint Committee, 2001):

- to permit international consultants in collaboration with Cambodia authorities for conducting field investigations with an aim of completing the TORs;

- to provide the Vietnamese side with available data relevant to the project;
- to give comments on TORs as soon as receiving the official letter from the Vietnamese side.

The decision that EVN has chosen the above two international consultants for the studies was considered as lack of transparency. Upon receiving tentative TORs, the CNMC requested the MRC Secretariat to provide technical assistance in reviewing the TORs. The MRC Secretariat pointed out that SWECO and Statkraft Groner have been involved with EVN in previous studies related to hydropower developments on the Se San River; therefore, it is debatable whether both consultants would be viewed as independent by many commentators (MRC, 2001). Accordingly, the MRC Secretariat warned that:

“Various sectors of the local and international communities have applied pressure to local and national governments over the impact of Yali Dam on downstream communities, and have criticized what they see as lack of action to mitigate the impacts. Governments are now responding, as evidence by the Nha Trang meeting and other arrangements between provincial governments. However, for these processes and studies to be accepted by all parties (local people, various levels of government, NGOs, local and international media), it is recommended that transparent procedures be followed at all stages. It is probable that acceptance of outputs from foreign teams working in Cambodia will be compromised if Cambodia nationals are not involved in the teams. Serious consideration should be given to the pros and cons of contracting companies with a history of involvement in the development of hydropower facilities on the Se San River, versus companies not associated with previous activities.”

At the second Cambodia-Vietnam Joint Committee meeting held in Phnom Penh on 9 April 2002, the two committees continued to discuss the two TORs. The Cambodia Committee proposed the scope of EIA and hydrodynamic modeling studies, which were tentatively conducted from the border up to Veun Sai district in Ratanakiri province, to be extended to the whole Se San River, down to the junction with the Mekong River. In addition, fishery issues were also requested to include in the EIA study. The EVN agreed to the request.

At this occasion, the MRC Secretariat’s representative informed the committee that the MRC Secretariat is ready to assist in carrying out EIA if requested. Referring to the comments made earlier by the MRC Secretariat regarding non-independent international consultants, EVN immediately declined this offer and responded that “the process to get a project funded by a

donor often takes a long time so that in order to implement the project in line with schedule approved in the Master Plan for Power Sector in Vietnam, the EVN fund for conducting study has been allocated (Cambodia-Vietnam Joint Committee, 2002).” Contrasting the view of the MRC Secretariat that independent international consultants would be required for the two studies, EVN informed the meeting that “SWECO and Statkraft Groner are the international consultants engaged in these studies and their activities are independently carried out which will be consulted with stakeholders concerned (ibid.).”

The discussion on the TORs continued in the third Cambodia-Vietnam Joint Committee meeting in 2003. The Cambodia delegate suggested EVN to include a study of optimum floods to meet the aspirations of downstream farmers and fisheries in the hydrodynamic modeling and the EIA. On the request of Cambodia Committee, EVN agreed that hydrodynamic modeling study and EIA shall be conducted by independent international consultant firm recruited by both Vietnam and Cambodia sides.

At the final decision, an agreement between Vietnam and Cambodia Committees was reached to have Danish Hydraulic Institute (DHI) international consultant conducting ‘hydrodynamic modeling’ study while SWECO carrying out the EIA. As stated above the later was considered not to be independent by the MRC Secretariat. Although such agreement has been reached between the two committees, a senior official from CNMC expressed his view during a meeting with NGOs in 2002 that “Vietnam has chosen a company to do the study – a Swedish company. But CNMC doubt about this. This company is not independent. Because they did study in Vietnam so may be biased to Vietnam interests (SPN, 2002c).”

While hydrodynamic modeling of the Se San River was carried out in October 2004 and the final report was released in January 2006, the EIA study began in November 2005 and the first draft report was delivered in March 2006. Both of the study results were presented in a workshop, namely “stakeholder meeting on EIA report on Cambodian part of Se San River due to hydropower development in Vietnam”, jointly organized by VNMC and CNMC in Phnom Penh on 5 July 2007. As the title of the workshop is concerned, the meetings attempted to have the report being consulted with various levels of stakeholder participation from local to national. To that end, NGO sector declined to attend the meeting due to the fact that a copy of the EIA report and an invitation to the meeting was received only a week prior to meeting, the EIA document was only available in English language and was not translated into Khmer, and representatives of the Se San River were not invited to participate or attend the meeting (3SPN, 2007b). The

coalition of NGO sector namely Rivers Coalition in Cambodia (RCC) requested this stakeholder meeting to abide by the following conditions (RCC: 2007b):

- a copy of the EIA report be made available in Khmer and English at least one month prior to the date of the meeting;
- a Khmer version of the report summary be made available at least on month prior to the date of the meeting, in the event that a complete translation of the report is not ready;
- professional translation in languages of the participants be provided during the meeting;
- participation not be restricted and reflects all interests;
- adequate time be allowed for stakeholders to assess the report and share information and views in the meeting; and
- ensure that affected community members can fully participate in language and discussions they can understand and respond to.

With the unsatisfactory result commented by officials and the absence of the NGOs and affected communities during the EIA workshop, at the fourth Cambodia-Vietnam Joint Committee meeting in 2008 the Cambodia delegation suggested an additional study to focus on social and economic impacts, especially in the dry season, the fluctuations of water level may, if more than 30cm, impact on fisheries and biodiversity in downstream Cambodia (Cambodia-Vietnam Joint Committee, 2008). However, this request was not considered by EVN of Vietnam. In a response to Cambodia delegate, the PECC 1 of EVN explained that “in the scope of the cooperation of the two committees, PECC 1 has been assigned to work with SWECO international consulting company to carry out the EIA study of Se San River. The EIA had been completed and discussed in the workshop held last year in Phnom Penh (ibid.)” The statement by PECC 1 infers that further study is not necessary required. In this case I argue that EVN acts as a dominating power actor over the Cambodian negotiator.

5.8 Compensation

Compensation is a complex issue which requires commitment and intervention from decision-makers at higher level. If there is no such political support compensation seems not to be realized. In this section I will show how compensation issue has been treated at national level.

As we have seen above, the important actors involved directly in the issue are the provincial authority, the water resources agencies both at provincial and national levels, the CNMC, the Cambodian Committee, and the Cambodian Standing Committee. Outside of this box are the

indirect actors what Norman Long (2000) called ‘distant actors’ or what James Scott (1990) referred to as ‘hidden transcript’ who also play a dominant role over the visible ones in deciding whether there is a need for compensation. The February 2000 flood event caused by water release from the Yali-Falls dam is a case where a decision for compensation was influenced by these invisible actors. In this respect, compensation was decided by the Cambodia government not to be obtained from its Vietnamese counterpart.

In an interview with a local English newspaper the governor of Ratanakiri province told that “the Cambodian government had not demanded compensation from the Vietnamese but it urged them not to repeat the discharge of water without warning (Phnom Penh Post, 2000a).” The statement by the governor was immediately transmitted and caught the attention of audiences internationally, particularly the Chief Executive Officer (CEO) of the MRC Secretariat. In a letter to ADB, the CEO wrote that:

“For your information, during the informal meeting between the Cambodia and Vietnam National Mekong Committees in Ho Chi Minh City in March in connection with the 11th MRC Joint Committee Meeting, as well as during the visits to Ratanakiri province and the Yali project, the question of compensation for past losses was not raised. Mechanisms for information exchange and avoidance of future incidents were the main issues discussed and agreed by the participants, as recorded in the MRC’s BTO [Back-To-Office] Report (20-21 April). Two of the participants in the Yali project visit, Secretary General of CNMC and Governor of Ratanakiri province, gave their interviews to the Phnom Penh Post (attached). These confirmed our understanding of the matter.” (Kristensen, 2000)

The statement implies that the MRC Secretariat has no basis power to push forward for a compensation deal if there was no political support from the state government. According to the statement made by the governor above, the Cambodia government did not use the 1995 Mekong Agreement to claim for compensation. Article 8 (of this agreement) on State Responsibility for Damages stipulates that:

“Where harmful effects cause substantial damage to one or more riparian from the use of and/or discharge to waters of the Mekong River by any riparian State, the party(ies) concerned shall determine all relative factors, the cause, extent of damage and responsibility for damages caused by that State in conformity with the principles of international law relating to state responsibility, and to address and resolve all issues,

differences and disputes in an amicable and timely manner by peaceful means ..., and in conformity with the Charter of the United Nations.”

Consequently, compensation has not been discussed between the Cambodia and Vietnam Committees during its joint committee’s meetings. Although compensation was not mentioned in any of the reports of the meetings, the issue seems to have been raised informally between the two committees. The Vice-chairman of CNMC told in an interview that “Vietnam did not reject compensation but Cambodia must provide scientific data on losses and damages caused by water release from the Yali-Falls dam (Interview 1.1.2).” Another view stressed that “compensation cannot be done unless there is assessment of losses and damages which is accepted by both parties (Interview 1.1.1).

The issue of compensation was also related to the sentiment of the Cambodian negotiator with regard to the influence of the Vietnam committee in financing Cambodia delegates to come for the meeting. An official at the MOWRAM told a group of NGOs advocating Se San issue during a meeting that “people have suffered since 2000, therefore the Standing Committee has the mandate. We should continue to insist Vietnam to pay compensation, though I am not sure how compensation can be delivered. I can only speak on the technical basis. In the past three meetings, Vietnam covered the budget. When we are hosted by Vietnam, how can Cambodia speak out (3 S Working Group, 2005a).”

Despite the lack of commitment from the Cambodia government, the MRC Secretariat urged that the compensation issue should be studied in the EIA. In a comment on TOR for EIA study the MRC Secretariat wrote that:

“The Se San River is a resource shared by two countries. Currently, only Vietnam realizes the benefits of hydropower development, while Cambodia realizes only the impacts (social, economic and ecological). It is contrary to the spirit of the 1995 Mekong Agreement to have natural resources developed in one country at the expense of people in another country. Referring to the report of World Commission on Dams which highlighted that compensation to affected peoples is an integral and essential part of planning for dam development, the MRC Secretariat recommended that reassessment of or future planning for management of the Se San River water resources should include compensation for people already affected by the operation of the current dams.” (MRC, 2001)

Consequently, the issue of compensation was discussed in the EIA report done by SWECO in 2007. Considering that the most serious experienced changes to livelihoods of the riverside villagers are unexpected rapid changes in the water flows and reduced fish stocks, SWECO (2007: 168) recommended the following.

“Compensation and mitigation measures should be focused on both the nutritional and economic consequences through developing aquaculture programs (fish ponds) and compensating for the lost protein source (fish breeding or meat production by animal breeding development). Agriculture programs should be developed to compensate for the reduced riverbank cultivation, and also include viable irrigation solutions. Cash compensation for any disturbed production conditions should never be considered to be an entire solution but be combined with livelihoods restoration and development programs in order to guarantee long term sustainability of livelihoods. However, if local people have lost any production tools like boats and fishing equipment due to unexpected water releases from the Yali dam, these should be compensated for their real value in cash or in kind.

Given that it is impossible to estimate the actual losses of the affected people, it is recommended that EVN should consider negotiating with the Cambodian counterpart the electrification of the affected communities along the Se San River as a benefit sharing from the upstream hydropower development.”

The above recommendations were considered by some of Cambodia officials as very general and did not have a clear work plan on how compensation shall be made. The director of department of river works and hydrology raised the issue during the stakeholder meeting of Se San EIA in July 2007 that “the EIA is very general. It does not provide an assessment of impact in quantity term so we do not know the estimate value of losses that need to be compensated (Author’s field note on 5 July 2007).” The director of planning department of CNMC commented that “although I understand that this is a preliminary EIA report, I view that the content of the assessment is not clear and insufficient. In regard to strategy there shall be more detailed measures and a work plan to mitigate impact and restore local livelihood. As to restoration of local livelihood I am not clear how such program will work and who will take care in financing it. I suggest that detailing restoration program shall be made further (ibid.).” An official from EIA office of MoE suggested that “when the reservoir is operated and cause losses to property or related resources, Vietnam party who owns the dam shall compensate such losses. Therefore, I suggest that the report shall specify clearly on how such compensation shall be made (ibid.).”

The foregoing discussion shows that without political support from central government, compensation over losses claimed by affected communities is hardly achieved. Despite lack of political support from the central government, the negotiation for compensation dealt was handled and zigzagged by various Cambodian officials through the EIA study conducted by international consultant SWECO. As we have seen from the above presentation, participation of officials from various government departments in the EIA workshop provides a forum for them to support the communities' claim through comments that urged EVN of Vietnam to prepare action plan for compensation. However, to date there is no any action plan with regard to compensation that has been prepared or put forward by EVN of Vietnam.

5.9 Conclusion

This chapter has provided insight into what exactly government intervention is about, and how intervention is structured in here-and-now situations across a multiplicity of spatial locations. This chapter has concentrated mainly on the intervention of the CNMC and MOWRAM officials concerning response to the February 2000 flood caused by the Yali-Falls dam and the post-actions thereof. As we have seen from the above description and discussion, interventions by these national institutions cannot be analyzed without considering other processes of intervention at other spatial locations. For instance at the provincial level the provincial governor claimed that the central government did not ask for compensation from Vietnam. This statement, indeed, reflects a decision ordered from national level. The reason behind this decision to why compensation was not required is unknown. In this study, the influence of hidden transcripts (Scott, 1990) remains very strong. The Cambodia Standing Committee which is charged to discuss and negotiate with Vietnam Committee regarding Se San issues has constantly continued to have no budget to organize meetings with the Vietnam Committee since 2004. The fourth meeting in 2008, however, was fully financed by Vietnam. This shows that the Se San issue has not been given much attention or priority by the central government.

Another form of intervention across spatial location is the interaction of CNMC with the MRC Secretariat as a link to negotiate a mitigation deal with its Vietnam counterpart. In this case, the MRC Secretariat served as an important intermediary between the two parties. The fact finding mission by the three MRC Secretariat's staff to affected areas in Ratanakiri province to investigate the cause of the February 2000 flood gave a strong support to CNMC. As a result, the Cambodia-Vietnam Joint Committee for Management of Se San River was established and served as a forum for discussion and negotiation between the two parties. Through this forum, the Cambodia Committee was able to negotiate the outcomes with its counterpart such as setting up

an information system on water release warning, conducting water quality study, and carrying out impact assessment. Besides facilitating the meeting, MRC Secretariat assisted MOWRAM in setting up water level monitoring stations on Se San River in Cambodia in 2000, giving technical support on commenting TORs for impact assessment in 2001, and conducting water quality assessment in 2004.

Although much has been realized, the outcomes of intervention were not really successful. As the above cases showed, the information system on water release warning has not fully been implemented as there were no proper communication facilities at provincial and local level. The water quality assessment by the MRC Secretariat seems not to be successful either because the probability of accuracy of sampling method was limited to only once every month during the dry season and once every two months during the wet season. With regard to compensation, the compensation deal claims by affected communities is unlikely to be a success since no action plan has been put forward to negotiate further between the Cambodia and Vietnam Joint Committee for Management of Se San River.

To conclude this chapter I argue that without political support from central government the Cambodian negotiators have no power to negotiate with Vietnam over the issue of hydropower dam impacts in the Se San River. One of the important political supports identified in this study is to power the Cambodia Joint Committee with budget to continue organizing the meeting.

As we have seen from the foregoing discussion, there are many aspects which related to the influence of Vietnam over Cambodia. In Ratanakiri province, the political and economic tie between the bordering provinces is strongly established and, as the case showed, the Vietnamese bordering provincial authorities have a strong influence on Ratanakiri provincial authority through providing financial supports such as constructing schools, roads, dormitory and general assistance. As far as the political structure of Cambodia is concerned (see section 5.2) this political and economic tie between the bordering provinces is enforced through a bilateral agreement between Cambodia and Vietnam (see also chapter 6 section 6.5). Representing the highest level of this bilateral agreement is the Ministries of the Interiors of Cambodia and of Vietnam. Any decision taken by Ratanakiri provincial authority has to be aligned with or subjects to approval by the Ministry of the Interior. This is particularly important in regard to the deal of the Se San issue as the matter has an international implication that needs to be engaged by the decision of the highest authority. The same is true with the Ministry of the Interior of Cambodia. As discussed in section 5.2 on the political structure of Cambodia, Ministry of the Interior is accountable to the Council of Ministers led by Prime Minister. Any decision taken by the

ministry has to be consulted with the Prime Minister. Again, since the Se San issue is an international issue therefore consultation and approval of decision from the highest authority is critically important. The statement by Ratanakiri provincial governor that compensation was not required by the Cambodia government reflects the decision ordered from the central government. Such decision was favor to Vietnam government perhaps due to close political relationship between present Cambodian government and the Vietnamese leadership who helped to liberate Cambodia from Khmer Rouge regime in 1979 (see also chapter 6 section 6.5 and section 6.6).

CHAPTER 6

INTERNATIONAL AND GLOBAL ARENAS: MORE PROTESTS MORE DAMS

6.1 Introduction

This chapter discusses responses undertaken by various actors across global and international levels in relation to the Yali-Falls dam impacts and other issues related to hydropower development not only in the upper but also the lower stretch of Se San River in Cambodia. This chapter consists of six sections. Section 6.2 explores the role of distant actors whose working agenda is to help affected local communities to protest and fight against the Yali-Falls dam and other dams development on the Se San River. Section 6.3 discusses responses taken by ADB in withdrawing financial support for Se San 3 dam as a result of the Yali-Falls dam impacts. Section 6.4 examines responses and the issue of power relations of the MRC Secretariat. Section 6.5 studies the processes by which Electricity of Vietnam (EVN) negotiates for building dam in Cambodia's stretch of Se San River. Section 6.6 provides conclusion of the chapter.

6.2 Protesting and fighting against the Yali-Falls dam: the role of distant actors

The February 2000 flood event caused by water release from the Yali-Falls dam induced various global and international activists and NGOs to protest against the dam.

After the flood event, Oxfam America was the first important player in providing financial resources to document downstream impacts in Ratanakiri province. The most influential report produced under this financial support is "A study of the downstream impacts of the Yali-Falls dam in the Se San River Basin in Ratanakiri Province, Northeast Cambodia" conducted in April 2000. The study was conducted by a Canadian researcher, Ian Baird, from Global Association for People and the Environment (GAPE) based in Canada. Ian Baird continued to support affected communities by helping design a local based community project called Se San Protection Network (SPN).

SPN was established, with the financial support from Oxfam America, in Ratanakiri province in 2001 (see chapter 4, section 4.5). To strengthen this network, a river coalition network was established in 2003 (see chapter 4, section 4.6.2). This river coalition network was transformed from Se San Working Group (SWG) in 2003 to 3S Working Group in 2005 and finally to Rivers Coalition in Cambodia (RCC) in 2007 (see chapter 4, section 4.6.2).

While this river coalition network was built to involve concerned stakeholders from local to national levels, international actors play a vital role in supporting this network. These

international actors include Oxfam America, Probe International in Canada, International Rivers (previously known as International Rivers Network – IRN) in America, Global Association for People and the Environment (GAPE) in Canada, Australian Mekong Resource Center (AMRC) in Australia, Mekong Watch in Japan, and Towards Ecological Recovery and Regional Alliance (TERRA) in Thailand.²⁹

Some members of this group had been involved in Se San issues as early as 2000 in response to February 2000 flood event caused by water release from Yali-Falls dam. Besides Oxfam America and GAPE, TERRA wrote a letter to MRC Secretariat, questioning about the extent of damage caused by the water release and clarifying the role of MRC Secretariat, on 8 March 2000 as follows:

“...We have been made aware from the news report, ‘Error causes fatal floods,’ dated 5 March 2000, in the Bangkok Post, that releases from the Yali Falls Hydroelectric Project have resulted in the deaths of three people in Ratanakiri province, Cambodia and further that hundreds of farms have been damaged.

....As the Mekong River Commission is the institution with responsibility to coordinate implementation of this agreement, could you please advise us as to the following.

- What actions or occurrences caused the tragedy identified in the report mentioned above?
- What is the extent of damage to persons, the environment and peoples’ livelihoods in the affected provinces in Cambodia and Vietnam?
- Which institutions, States or persons are responsible for this tragedy?
- Will the Mekong River Commission be instigating an investigative mission to identify the causes and impacts of this tragic event?”

(TERRA, 2000)

As a result of complaints from international organizations in early 2000, MRC Secretariat prepared a fact finding mission to the affected area in Ratanakiri province from 16 to 19 March 2000 (the outcomes of this fact finding mission are discussed in chapter 5). In a “Terms of Reference for Fact Finding Mission to Ratanakiri on Downstream Effect of Yali Reservoir Operation” the MRC Secretariat cited reference of enquiries from NGOs as follow:

²⁹ <http://www.oxfamamerica.org>, <http://www.probeinternational.org>, <http://www.internationalrivers.org>, <http://www.gapeinternational.org>, <http://www.mekong.es.usyd.edu.au>, <http://www.terraper.org>

“...In the meantime, there are enquiries from some NGOs... on the issue addressed to the MRC Secretariat. In order to have first hand information on the situation in Ratanakiri, an MRC Secretariat mission of three members will be dispatched to the Ratanakiri province to gather necessary information on the matter” (MRC, 2000a).

While some organizations had been writing letters to MRC Secretariat, others had been addressing the issues to funding agencies to take a major step to stop financing further dam building on Se San River and to press EVN to compensate and mitigate the impacts according to international law. Realizing that the World Bank had been involved in providing a loan to EVN to build the transmission line from the Yali-Falls dam to Ho Chi Minh City in 1998, Probe International and International Rivers jointly wrote a letter to the World Bank for intervention on 10 October 2002 as follows.

“I am writing to urge you to investigate the failure of the World Bank- financed utility, Electricity of Vietnam (EVN), to mitigate and compensate for economic and environmental damage caused to thousands of Cambodians living downstream of EVN’s Yali-Falls dam. Since 1998, the World Bank has provided loans to EVN worth US\$575 million for electricity transmission and distribution facilities, including transmission lines connecting the Yali-Falls dam to Ho Chi Minh City....

As a major donor to EVN, the World Bank has a responsibility to ensure that its client-utility is held accountable for the environmental damages and economic losses incurred by downstream communities.....

In June, EVN made matters even worse: The utility began construction of a second hydro dam, known as Se San 3, about 20 km downstream of the Yali-Falls dam. Not only has EVN failed to address problems caused by its first dam, it has failed to notify or consult downstream Cambodians about its second dam.

By its actions, EVN has shown contempt for the rights of Cambodians who depend upon the Se San River for water, food, and income. The utility has sought to expropriate and monopolize the Se San River for hydropower production without paying the real costs of doing so, and by violating the rights of other river users. We therefore urge the World Bank to do the following:

- Ensure that EVN halts construction of its second dam on the Se San River until an open and independent assessment of the environmental damages and economic losses,

- Ensure that EVN respects the rights of downstream Cambodians – including, but not limited to, the right to fair and timely compensation for economic losses, and the right to negotiate environmental mitigation measures to minimize the adverse effects of the dam’s operation on the riverine environment.”

(Probe International and International Rivers Network, 2002)

The above request for intervention did not yield a positive result. The World Bank considered its financial loan was just for building transmission lines connecting the dam site to Ho Chi Minh City but not the construction of the Yali-Falls dam per se and therefore it cannot dictate or impose pressure on EVN. In a reply letter to Probe International and International Rivers, the World Bank defended its position in relation to the Se San issue by explaining that:

“We agree with you that projects should address and properly manage environmental and social impacts, including those impacts which occur beyond national borders as a result of the project. At the same time, we should note at the outset that the World Bank is not financing the Yali-Falls dam. Indeed, the dam’s construction began in 1992 and, to our knowledge, since then has been fully financed by the EVN with its own resources or those of the Government of Vietnam. We are also not involved with Se San 3, and have no plans for being involved in this project.

The World Bank’s strategy in Vietnam’s energy sector has been focused on enhancing rural access, rehabilitation/expansion of the power systems and sector reform. As a part of this strategy, our involvement in the energy sector in Vietnam has thus focused also on strengthening the country’s transmission and distribution network, including the 500 kV Pleiku to Phulan and Pleiku to Danang transmission lines. These transmission lines will improve services to rural areas, optimize the overall efficiency of the system, and contribute to the overall reform of the sector, including mobilizing private sector financing for expansion. Environmental Assessments and Resettlement Action Plans were prepared for these transmission lines in accordance with World Bank policies and procedures.”

(World Bank, 2003a)

Probe International and International Rivers were disappointed with the response of the World Bank. In fact, without transmission line the electricity production cannot be transmitted and therefore there is no point to have large scale hydropower dams on the Se San River. In their reaction, Probe International and International Rivers tried to clarify that the World Bank involvement in providing loans for transmission lines is equally important as the construction of Yali-Falls dam and therefore they insisted that the World Bank could press EVN to stop further dam construction on the Se San River until the issue of Yali-Falls dam impact was solved. As pointed out in their responding letter to the World Bank on 29 April 2003, Probe International and International Rivers wrote that:

“In response we would like to clarify several points and request further action from the Bank. First, we understand that the World Bank did not finance Vietnam’s Yali-Falls dam nor did we claim this in our letter. Rather our point is that the Bank has provided US\$575 million worth of loans to the dam owner, Electricity of Vietnam Corporation (EVN), for transmission and distribution facilities including the transmission line from Yali-Falls dam to Ho Chi Minh City. Therefore, while the Bank is not financing the construction of Yali-Falls or other dams along the Se San River, Bank financing for EVN’s transmission lines is a subsidy to its hydro dam investments, without which EVN could not deliver its output from Yali-Falls to demand centers throughout the country. EVN will likely repay its World Bank transmission loans using revenues generated from Yali-Falls and other hydro projects, therefore the Bank has a clear interest in the viability and integrity of EVN. We therefore expect the Bank to ensure that EVN accounts for the cost-side of its dam operations in an honest, timely, and accountable manner.

We are pleased that the Bank intends to discuss the concerns raised by affected communities and citizens groups with its clients, the Government of Vietnam and Cambodia, and the Phnom Penh-based Mekong River Commission. During these discussions, we urge you to press EVN to do the following:

- Halt construction of all further dams on the Se San River, including Se San 3, until an open and independent assessment of the environmental damages and economic losses caused by the first dam, Yali-Falls, is completed and made public;
- Respect the rights of people living downstream of Yali-Falls – this includes the right to fair and timely compensation for economic losses, and the right to negotiate with

(Probe International and International Rivers Network, 2003)

In August 2003, a team from the World Bank, led by the World Bank's country director for Cambodia Nisha Agrawal, visited Ratanakiri province. In a World Bank's newsletter issued in September 2003 the World Bank clarified the purpose of the trip that "The Yali-Falls dam was not funded by the World Bank. But the Bank is interested in understanding the nature and causes of poverty in Cambodia, and in finding and supporting solutions for poverty reduction. In that context, the Bank seeks to understand how the Yali-Falls dam is affecting the lives of poor people in Ratanakiri and what efforts are being made by the communities themselves, as well as by provincial and national authorities to address these problems" (World Bank, 2003b).

During the visit to Ratanakiri from 25 to 29 August, Agrawal told NGOs that "we are not involved in the Se San dams. We cannot do anything to stop these dams. This is an issue we can raise but the Bank is not more powerful than the government (3S Working Group, 2003)." Further, Agrawal continued her argument that "the World Bank could say they won't fund the transmission line but they will fund schools. Vietnam will continue to construct the transmission line by relocating money allocated for schools. What we can do is to encourage Vietnam to follow laws and best practice... We can only change practice by pointing out that something is wrong and trying to persuade them to adopt better practices, not by withdrawing funds (ibid.)."

Although the World Bank took an effort to visit affected communities in Ratanakiri province, the visit did not yield a satisfactory result as perceived by Probe International and International Rivers because the World Bank country director for Cambodia continued to convince the affected communities and the NGOs that it did not fund the Yali-Falls dam and the other dams on the Se San River and therefore could not press Vietnam to stop dam building as called by local communities and NGOs. In response to this visit Probe International and International Rivers made an unsatisfactorily remark in a letter to the World Bank on 12 March 2004 that "since...the August 2003 visit to affected communities by Nisha Agrawal, World Bank country director for Cambodia, we have reviewed the situation and find no evidence of progress in resolving Cambodians' concerns about EVN's hydro dams" (Probe International and International Rivers Network, 2004). Further the two organizations continued to agree that "your [last] letter assured that the World Bank is paying special attention to improving EVN's performance, particularly its application of best practices and compliance with international norms of operation. Clearly, EVN

is not getting the message. Or perhaps EVN expects continued World Bank support regardless of its reckless operations and mistreatment of riparian communities” (ibid.). In the letter the two organizations continued to urge the World Bank to press EVN to take the following four actions (ibid.):

- a. Halt all dam construction on the Se San until EVN adjusts the Yali-Falls dam’s operating regime to mimic the Se San River’s natural flows and until an optimal operating regime is developed to the satisfaction of all stakeholders, particularly communities living close to the river;
- b. Assess short term damages caused by spills from January 1999 to the time they are brought under control to the satisfaction of representatives of downstream residents in Vietnam and Cambodia;
- c. Compensate all persons who have suffered losses, injury, dislocation of activities, reduction of food production, inconvenience etc., and
- d. Set up a discharge warning system to prevent further tragedies.

Despite the above struggle in explaining and urging by the two international organizations, the World Bank continued to keep the Se San issue away from its responsibility with the same argument that it was not involved in construction of dams in the Se San River and requested the two organizations to address the issue to the Vietnamese and Cambodian governments. As indicated in a letter to Probe International and International Rivers on 4 June 2004, the World Bank stated that:

“... As you are aware, the World Bank is not involved in construction or operation of any dams in the Se San River. As part of our engagement with the energy sector in Vietnam, the World Bank will continue to support integration of environmental and social issues into the planning, development and operation of the energy sector in Vietnam through policy dialogue, technical studies and institutional strengthening. At the same time, the Bank cannot assume blanket responsibility for all projects in the energy sector when we have no direct involvement in them....

... since we are not financing these projects and therefore, do not have direct access to information on how the Vietnamese and Cambodian governments are progressing with this work, we suggest that requests for specific information about progress on Se San River developments are most appropriately addressed to the Government of Vietnam and to EVN....” (World Bank, 2004)

So far we have seen that the two parties (Probe International and International Rivers, and the World Bank) continued to have different argument in regard to hydropower dam issue on the Se San River. The differences of argument can be understood as having different interest of each party. While the interest of Probe International and International Rivers was to fight against dam construction and dam impacts to lift up the voice of local communities and their livelihoods in Cambodia, the interest of the World Bank was to support Vietnam in constructing national power grid to lift up the economic development in Vietnam through provision of electricity that connects the electricity producers to the consumers. In this case the power grid serves as a market gateway for electricity producer. Since hydropower development is one of the largest electricity producers in Vietnam therefore the construction of the power grid can be seen as promoting hydropower development behind the scenes. As such we can interpret that the relations between the construction of hydropower dam and the construction of national power grid are strongly linked. Since EVN is the owner of the Se San dams and the World Bank is the loan provider for the national power grid construction therefore both entities' relationships are very strong. With this assumption, I argue that Probe International and International Rivers have chosen a convincingly strategic action to press EVN to stop further dam building on the Se San River through the intermediary, the World Bank. But why does the result of this response fail to enroll the World Bank? Why is that so? Does the Bank find dam development in Vietnam more important than the impacts occurred in Cambodia? Below I attempt to explain the reason behind the engagement of the World Bank in Vietnam.

In this discussion I argue that the construction of national power grid supported by the World Bank is rooted in a larger sphere of the World Bank's lending policy for Vietnam which began in 1994. As explained in chapter 3 section 3.3, Vietnam began economic policies reform in the mid 1980s and led to high economic growth in the early 1990s. The World Bank, along with other donors and observers of the "Asian miracle" saw Vietnam in the early 1990s as the next Asian Tiger (World Bank, 2001). After suspension of Vietnam's membership in 1979 (Middleton et al., 2009), the World Bank started to re-engage with Vietnam in 1988 with the mission to learn about the scope and impact of the Vietnamese economic reform, and subsequently the World Bank re-enrolled Vietnam's membership in 1993 (World Bank, 2001). The World Bank began providing loan and grant heavily to Vietnam in 1994. Between 1994 and 2001, the total lending amounted to US\$3.2 billion, approximately US\$ 450 million annually (ibid.). According to Middleton et al. (2009), Vietnam is now the World Bank largest borrower in the region. The lending was almost

double in 2007. In 2007, the World Bank provided over US\$800 million a year in long-term interest free credits to support Vietnam over the next five year (World Bank, 2007).

The loan and grant focused on infrastructure, structural reforms and poverty alleviation, among which energy sector played one of the core roles in supporting the development in Vietnam aiming to eradicate power shortage which was experienced in the early 1990s (see chapter 3 section 3.3). In energy sector the fund was directed to improve transmission and distribution of electricity, particularly in the Southern part of the country; strengthened planning and management capacities of the power company; corporatized and strengthen the EVN; and assisted government introducing private power to Vietnam (World Bank, 2001). The support of transmission line from the Yali-Falls dam to Ho-Chi-Minh city is one of the examples.

Given the immense demand of electricity, the power sector in Vietnam began restructuring in 1995. The existence of EVN, which dates back to French colonial times and then under Soviet central planning model, was re-established as a State Corporation under the January 1995 Government Decree No. 14.CP (Wyatt, 2002) (see chapter 3 section 3.3). According to Wyatt (2002), the World Bank was increasingly the driver of the reform process. By 1997, the World Bank was continuing its provision of technical assistance on further regulatory reform, for example, it disbursed US\$480,000 between December 1997 and September 1999 in grants for ‘Capacity Building for Power and Gas Sector Regulations’ (ibid.). A part from this the World Bank have been involved in various hydropower planning studies in Vietnam since the early 1990s (Middleton et al., 2009). The World Bank conceived the preparation of Vietnam’s Hydropower Master Plan, completed in 2001 with funding by the Norwegian and Swedish development agencies (Lang, 2000, cited in Middleton et al., 2009).

In its funding evaluation in 2001, the World Bank stated that “Electricity generation tripled over the decade and access to electricity grew from 48% of households to about 75%. Transmission and distribution losses have decreased over the decade, but remain high relative to comparator countries. To meet growing demand for electricity, which is expected to triple within the next decade, it is critical to attract private investors” (World Bank, 2001: 17-18). Although this statement pinpoints to promote power generation in general, it also implies that the World Bank encourages EVN to mobilize resources from private sector for hydropower development.

Besides its funding, the World Bank assisted Vietnam in mobilizing funds from other donor agencies. As Lang (2000) puts it, “the World Bank wields an enormous influence in Hanoi,

influence gained not least because the Bank chairs the Donors' Group meetings which every year offer Vietnam around US\$ 2 billion in aid."

The foregoing discussion shows that the World Bank's interest was very much favorable in supporting Vietnam dams rather than obstructing the construction as called by Probe International and International Rivers to favor local communities living along Se San River in Cambodia.

6.3 Funding and withdrawing of support by the Asian Development Bank (ADB)

Hydropower dam building in the Se San River involved a high investment cost which required financial support from a multiplicity of actors including investment banks, bilateral and multilateral donors, and national and international private companies. The Se San 3 dam, located 15 km below the Yali Falls dam, was the second dam constructed in mid 2001 but before the construction started the funding for this dam was a controversial issue across international and global arenas.

Prior to the February 2000 flood, which was reported to have been caused by water release from the Yali-Falls dam, a financial arrangement for the development of Se San 3 dam was made. The budget for this dam amounted to somewhat around US\$ 320 million. Of the total, US\$ 80 million was a loan by the ADB, agreed in mid 1999, while the remaining US\$ 240 million was expected to come from international investors and dam builders such as Hydro-Quebec (Canada) or Statkraft (Norway) (White, 2000; Watershed, 2000b). Prior to providing the financial loan to the Vietnamese government, ADB offered a grant of US\$ 1.8 million to EVN for a project preparatory technical assistance (White, 2000; Watershed, 1999). US\$ 0.9 million of this fund was allocated for an environmental and social impact assessment. Consultants Worley International Ltd. of New Zealand was contracted for this purpose (Watershed, 2000b).

According to Worley Ltd. report (2000a), the aim of the assessment was to achieve two objectives. The first objective was to assist ADB and the EVN in verifying that Se San 3 is a least cost development alternative. The second objective was to prepare the Se San 3 project as a model which would be managed commercially using internationally recommended operational, financial, environmental and social practices.

The assessment was carried out from December 1999 to April 2000. The assessment coincided with the news from Cambodia that the catastrophic event caused by water release from the Yali-Falls dam resulted in drowning and damage to property at the end of February 2000. In this regard, the consultants noted that assessment of Se San 3 alone was not enough and therefore considered to cover the impact of the Yali-Falls dam. In the report, the consultants wrote that:

“The accidental catastrophic damage caused by the Yali discharge pattern ..., which has not yet been investigated or compensated, and which extends into Cambodia, has had to be taken into account, particularly as the ADB advised NGO’s that the technical assistant team would be working on rectifying the situation (Worley Ltd., 2000a: ES-2).”

To that end, the scope of the assessment was changed to cover both the Yali and the Se San 3. The consultants continued their argument as follows:

“To meet this perplexing and changing condition, the team had to make a decision in April to re-organize the report. The products now delivered, under the title of the Yali/Se San 3 Environmental and Social Impact Analysis Study (YESIAS) (ibid.).”

A draft of this report was completed in April 2000 and delivered to EVN for approval but the draft was rejected and warned not to be publicly released because EVN has deemed it confidential (Wyatt & Baird, 2007). According to a letter from the ADB’s NGO Liaison Officer to a Cambodian NGO, it explains that:

“In response to earlier requests for this report, ADB requested approval from the Government of Vietnam to release it. However, the Government has declined to provide such approval, and considered the report confidential ... As a result, ADB does not have the authority to release the report (Edes, 2003, cited in Wyatt & Baird, 2007).”

Following the finding of the study, the consultant recommended that downstream impact assessment in Cambodia shall be carried out including an assessment of the impacts from Yali-Falls with the view to setting up negotiations over compensation for damages (Hirsch and Watt, 2004). Noting this recommendation, ADB deferred its decision on financing Se San 3 project in June 2000 and suggested for further study (White, 2000; Watershed, 2000b).

In July 2000, the Vietnamese government formally announced that it no longer needs ADB’s assistance to proceed with the Se San 3 hydropower project (Watershed, 2000b; Hirsch and Wyatt, 2004). According to the ADB (Nielsen, 2000b, cited in Hirsch and Wyatt, 2004), “ADB was not formally advised of the reason for this decision however we believe that it is due to concerns that further studies would result in further delays and there was still no guarantee that ADB would be in a position to finance Se San 3 once the downstream studies had been completed.”

After withdrawal from the ADB financial assistance, EVN sought funds from other sources to finance the construction of Se San 3. Russia became an important source of finance for the Se San cascade. After funding Yali-Falls dam, Russia provided US\$58 million in export credits for

Se San 3 plus another US\$40 million for Pleikrong hydropower project (Waterpower Magazine, 2002). The balance of around US\$220 million for Se San 3 was met through a US\$140 million syndicated loan among four Vietnamese banks plus US\$80 million in EVN equity (ibid.).

So far we have seen that the actions taken by EVN clearly shows the attitude toward avoiding compensation which called by the Worley's report, eliminating unnecessary delay of the project's construction, and pushing forward dam building without delay. In this case, EVN has successfully eliminated the debate at the international arena in relation to the issue of the Yali-Falls and the Se San 3 dams.

6.4 The Mekong River Commission Secretariat as an intermediary: responses and the issue of power relations

Due to interrelation of intervention across local, national, international and global levels, much has been discussed on responses undertaken by the MRC Secretariat in Chapter 5. Responses of the MRC Secretariat are summarized in Table 6.1. This section aims to discuss power relations in which the MRC Secretariat has been engaged since the occurrence of the February 2000 flood event caused by water release from the Yali-Falls dam.

In this section I argue that the power of the MRC Secretariat rests on political influence of the concerned member countries. This means that the MRC Secretariat has no mandate to impose or dictate pressure on any member country when a problem has occurred such as the effects of Yali-Falls dam. This is due to the fact that the hierarchy of the MRC follows the line of political structures of Council, Joint Committee and Secretariat (see Chapter 3 Section 3.1.4). The decision taken by the Secretariat is therefore largely influenced by the Joint Committee and the Council of respective member countries. According to the 1995 Mekong Agreement of the MRC, Article 30 stipulates the functions of the Secretariat with seven main duties³⁰, none of which give the power to the Secretariat to preside over dispute resolution (MRC, 1995). The resolution of differences and disputes is subject to the decision of the Council and the Joint Committee of the

³⁰ Article 30 of the 1995 Mekong Agreement stipulates the functions and duties of the MRC Secretariat as follows (MRC, 1995):

- a. Carry out the decisions and tasks assigned by the Council and Joint Committee under the direction of and directly responsible to the Joint Committee;
- b. Provide technical services and financial administration and advise as requested by the Council and Joint Committee;
- c. Formulate the annual work program, and prepare all other plans, project and program documents, studies and assessments as may be required;
- d. Assist the Joint Committee in the implementation and management of projects and programs as requested;
- e. Maintain databases of information as directed;
- f. Make preparations for sessions of the Council and Joint Committee; and
- g. Carry out all other assignments as may be requested.

respective member country which are stipulated in Article 34, Article 18.C, and Article 24.F of the 1995 Mekong Agreement (ibid.).

With this limitation of this functionality, the MRC Secretariat assisted CNMC and VNMC to form a Joint Committee for Management of Se San River of Cambodia and Vietnam to negotiate over the issues of the Yali-Falls dam. The agenda of negotiation was set by both CNMC and VNMC with the facilitation of the MRC Secretariat. The direction of negotiation is therefore based on the decision of both negotiating parties. As indicated in a letter to Phnom Penh Post in mid 2002, Chief Executive Officer of the MRC Secretariat clarified the role and the actions that have been undertaken by the Secretariat that:

“With regard to the Yali-Falls dam, MRC at the request of the governments of Cambodia and Vietnam, facilitated the establishment of a joint committee to discuss the environmental impact, management, adverse effects, the dam’s water release and future construction. MRC continues to facilitate meetings of this committee through the provision of expert advice from the MRC Secretariat. The meetings are coordinated by the governments of Vietnam and Cambodia. MRC cannot dictate the direction or decisions that the committee makes. That is the responsibility of the two governments concerned.” (Phnom Penh Post, 2002c)

The above statement also showed that the MRC Secretariat can only intervene upon request from the member country, and in this case the MRC Secretariat can only play as an intermediary role to facilitate negotiation between the two countries. In 2002, the MRC Secretariat issued a similar statement explaining its role regarding issues related to Yali-Falls dam and other hydropower development projects on the Se San River. The statement claims that:

“The MRC is an intergovernmental organization created by the four member countries and subject to decisions of the members. It cannot force Vietnam to ‘cease all dam operations and construction on the Se San’ as called for by the NGOs. In the event that the other member countries would call for further negotiation regarding development on the Se San tributary, the MRC would be authorized to facilitate such negotiation.” (MRC, 2002b)

Although we have seen that the MRC Secretariat has no power to dictate the direction of negotiation and decision but it has power to “provide technical services... and advise as requested by the Council and Joint Committee (Article 30.b of the 1995 Mekong Agreement)” of the member country. In this regard, the MRC Secretariat must assist the two parties with technical

advice to come to a fair negotiation in resolving the dispute. In Chapter 5, I have touched upon some crucial points where the MRC Secretariat has played a key role to support CNMC in negotiating with Electricity of Vietnam (EVN) and VNMC to have fair Terms of Reference (TOR) for studying ‘hydrodynamic modeling of Se San River’ and conducting ‘Environmental Impact Assessment (EIA) of Se San River from the border between Cambodia and Vietnam to the confluence of Se San and Sre Pok Rivers.’

After receiving both tentative TORs (designed by EVN) from CNMC in October 2001, the MRC Secretariat reviewed and provided a very comprehensive comment as a basis for CNMC to further negotiate with VNMC and EVN to ensure that the TORs addressed all concerns of negative effects resulting from hydropower development on the Se San River. Some of crucial comments include extending the study area for the whole stretch of Se San River in Cambodia, the issue of choosing independent consultants and representation on the work teams, the issue of compensation, and advising to use existing reports prepared by NGOs in Cambodia. These recommendations were very much favorable to Cambodia. An example in regard to the issue of ‘compensation’ for EIA study, the MRC Secretariat wrote its comment as follows:

“The Se San River is a resource shared by two countries. Currently, only Vietnam realizes the benefits of hydropower development, while Cambodia realizes only the impacts (social, economic and ecological). It is contrary to the spirit of the 1995 Mekong Agreement to have natural resources developed in one country at the expense of people in another country. Furthermore, the recent World Commission on Dams highlighted in its report that compensation to affected peoples is an integral and essential part of planning for dam development. MRC recommends that reassessment of or future planning for management of the Se San River water resources should include compensation for people already affected by the operation of the current dams.” (MRC, 2001)

Another example, the MRC Secretariat made comment relate to ‘representation on the work teams’ for EIA study that:

“The study is to be carried out by an international consulting company, assisted by Vietnamese nationals (as mentioned at the Nha Trang meeting). The impact of the altered flow regime in the Se San River on riparian peoples is a contentious issue in Cambodia – it has attracted the attention of international media, NGOs, and provincial and national governments. In view of this, it is likely that studies conducted on the impact of water management strategies, but not involving Cambodian personnel, will receive particular

scrutiny and criticism. The net effect could be that the study will be considered biased by many sectors of the community, perhaps leading to rejection of the report even though it may be rigorously derived.” (ibid.).

With regard to advising to use ‘existing reports’ produced by NGOs in Cambodia, the MRC Secretariat stressed its following important comment:

“In the scope of services, reference is made to the use of existing reports, and that these will be supplied to the consultant by EVN. To avoid criticism, the two following reports should be included:

- ‘A study of the downstream impacts of the Yali-Falls dam in the Se San River Basin in Ratanakiri province, Northeast Cambodia’, prepared by the Fisheries Office, Ratanakiri Province, in cooperation with the Non-Timber Forest Products Project. Ratanakiri Province, 29 May 2000.
- ‘Economic valuation of the livelihood income losses and other tangible downstream impacts from the Yali-Falls dam to the Se San River Basin in Ratanakiri province, Cambodia’, by Bruce McKenney, Oxfam America, January 2001” (ibid.).

As far as the above MRC Secretariat’s comments are concerned, Electricity of Vietnam (EVN) might not be happy to have MRC Secretariat financing the EIA study for the whole stretch of Se San River in Cambodia which caused by hydropower development on the upper part in Vietnam since the MRC Secretariat seems to be supportive to the Cambodian side. With this reason, EVN has rejected financial assistance from the MRC Secretariat when the representative of the MRC Secretariat informed at the second meeting of Joint Committee for Management of Se San River on 9 April 2002 that “the MRC Secretariat would finance the study if the two parties (Cambodia and Vietnam) requested (Cambodia-Vietnam Joint Committee, 2002)”. At the meeting EVN informed that “the process to get a project funded by a donor often takes a long time so that in order to implement the project in line with the schedule approved in the Master Plan for Power Sector in Vietnam, the EVN fund for conducting study has been allocated (ibid.)”. Detail about EIA negotiation process is discussed in chapter 5 section 5.7.

The foregoing discussion shows that with the limitation of the MRC functionality Vietnam has shifted the conflict from an international arena to a bilateral arena in which Vietnam can steer, drive and control the negotiation.

Table 6.1: Responses of MRC Secretariat after February 2000 flood event caused by water release from the Yali-Falls dam

Date	Event
End of February 2000	Flush flood in Ratanakiri province caused by water release from the Yali-Falls dam
06 March 2000	CNMC informed the MRC Secretariat about the cause of flush flood and requested for intervention
07-15 March 2000	The MRC Secretariat communicated with VNMC for clarification and information. The MRC prepared Terms of Reference for fact-finding mission to Ratanakiri province
16 to 19 March 2000	The MRC Secretariat conducted fact-finding mission to Ratanakiri province to document a brief impacts and to provide recommendations
28 March 2000	The MRC Secretariat facilitated a meeting between the MRC Joint Committee members of Cambodia and Vietnam during the 11 th MRC Joint Committee Meeting to discuss solution
20-22 April 2000	The MRC Secretariat jointly conducted a visit with Cambodian delegates to the Yali project site. The MRC Secretariat facilitated the meeting to find solutions. Mechanism for information exchange to minimize downstream effects in relation to dam operation was established.
April-June 2000	Upon request of CNMC, the MRC Secretariat set up water level monitoring stations and rainfall recording station on the stretch of Se San River in Ratanakiri province
August-December 2000	The MRC Secretariat helped establishing Joint Committee for Management of the Se San River of Cambodia and Vietnam to implement mechanism for information exchange in regard to dam operation
26 July 2001	The MRC Secretariat facilitated the first meeting of Joint Committee for Management of the Se San River
October 2001	The MRC Secretariat provided comments on Terms of Reference for Hydrodynamic Modeling and Environmental Impact Assessment of the Se San River
09 April 2002	The MRC Secretariat facilitated the second meeting of Joint Committee for Management of the Se San River. In the meeting, the MRC Secretariat offered funding for Environmental Impact Study for Se San River but EVN declined for such financial support
04-07 November 2003	The MRC Secretariat facilitated the third meeting of Joint Committee for Management of the Se San River
May 2004-May 2005	The MRC Secretariat funded a one year water quality monitoring program to be conducted on the Se San River by Cambodian and Vietnamese experts
05 July 2007	Participation of the MRC Secretariat's representative as an observer to a stakeholder consultation workshop on EIA report for Se San River organized by VNMC and CNMC
04-05 March 2008	Participation of the MRC Secretariat's representative as an observer to the fourth meeting of Joint Committee for Management of the Se San River

Source: Author's compilation

6.5 Negotiating Se San dams in Cambodia's stretch

Se San River is full of hydropower potential. In the upper part in Vietnam, six hydropower sites have been under construction and operational and one is being studied. The total generating capacity in this upper reach is about 1,800 MW (see chapter 3). All of these dams are owned by EVN. In the lower reach in Cambodia, five hydropower sites were identified with total estimate capacity of 888 MW (PECC 1, 2006). No hydropower has been developed on this lower stretch.

Following the February 2000 flood event caused by water release from Yali-Falls dam, a Joint Committee for Management of Se San River was established at the end of 2000 and negotiations between Cambodia and Vietnam began in 2001. The idea behind the creation of this Joint Committee was aimed at solving downstream effect which caused by the operation of Yali-Falls dam. As we have seen in chapter 5 there were some crucial actions taken to minimize downstream impacts such as advance notification of water release, constructing re-regulatory dam, conducting water quality monitoring and downstream impact study.

Other hidden outcomes resulting from this Joint Committee were also related to Vietnam's negotiation to build dams on Cambodia's stretch of Se San River. During the process of negotiation, EVN began to explain its intention to develop hydropower on Se San River in Cambodia. A senior official from CNMC told that "Vietnam has been encouraging us to build dams in the lower reach in Cambodia, and that, EVN is ready to provide technical and financial assistance to back the development projects (Interview 1.1.2). The intention of Vietnam to get involved in building dams in Cambodia began at least in 2003. During the third meeting of Joint Committee in November 2003, Cambodia party agreed with Vietnam's request to conduct study in the lower reach in Cambodia. The minutes of this meeting stated that "Cambodia side requested that joint studies be carried out for Lower Se San 2... through cooperation with Cambodia and Vietnam (Cambodia-Vietnam Joint Committee, 2003)."

Although it is not clear how negotiation process between the two parties has taken place but according to Cambodia officials' argument, there were some crucial points which influenced the decision to involve Vietnam in studying and building Lower Se San 2. Firstly, EVN has developed a series of dams in upstream Se San therefore EVN will ensure enough flow for downstream dam (Interview 1.2.4). Secondly, EVN has both technical and financial capacity in building dam (interview 1.3.1). Thirdly, EVN understands well about the issues which caused by Yali-Falls dam (Interview 1.1.3). These arguments infer that the preference of dam building on

the lower reach of Se San River in Cambodia has been particularly allocated for EVN of Vietnam and therefore the whole stretch of Se San River will be monopolized by EVN of Vietnam.

According to Ryder (2009: 104), project developers submit bids for contracts in accordance with terms and conditions determined by the government but this differs from the Cambodian energy ministry's approach, where developers negotiate concession for projects selected by government. This argument is particularly true in relation to the negotiation of Se San dams in Cambodia by EVN of Vietnam. During the process of negotiation, formal and informal communication was established between members of the two committees. The key players that sit in the Joint Committee for Management of Se San River are the EVN of Vietnam and the Hydropower Department of Ministry of Industry, Mines and Energy of Cambodia. Based on the request made during the third Cambodia-Vietnam Joint Committee meeting, EVN followed the formality of communication via Vietnam Ministry of Industry to request Cambodia Ministry of Industry, Mines and Energy to study and develop some hydropower projects on Se San River in Cambodia for electricity supply in Cambodia and export (PECC 1, 2006). Since the request is related to hydropower, therefore, the issue was directed to Hydropower Department for reviewing and commenting before making decision. Due to the fact that the issue has already been negotiated and known by the Hydropower Department, the decision to engage EVN was favorable. To that end, on 3 March 2004 Cambodia Minister of Industry, Mines and Energy formally informed its Vietnamese counterpart that "Vietnam is welcome to support a comprehensive study on hydropower development on Se San River of Cambodia territory to hasten hydropower exploitation of Se San River serving for economic development of Cambodia and export (ibid: 9)."

In May 2004, Vietnamese team including EVN, Ministry of Industry and VNMC met with its Cambodia counterpart to discuss about terms of reference of hydropower plan on Se San River in Cambodian territory. Minister of Industry, Mines and Energy assigned Hydropower Department to work with Vietnamese side to conduct comprehensive development study on hydropower in Se San River in Cambodia.

In November 2005, EVN approved TOR for investigation of hydropower cascade plan for downstream of Se San River in Cambodia and assigned Power Engineering Consulting Company 1 (PECC 1) to conduct the study from May 2005 to May 2006.

Among five hydropower potentials, PECC 1 ranged two hydropower projects to be firstly developed. The first ranking project is Se San 1 located at the border between Cambodia and

Vietnam with the installed capacity of 90 MW. The second rank is Lower Se San 2 located just upstream of confluence of Se San and Sre Pok Rivers with the installed capacity of 420 MW. The other three projects were considered not to be viable including Lower Se San 3, Prek Liang 1 and Prek Liang 2.

Base on the above study a decision was made to engage EVN to do feasibility study and to construct the two hydropower dams. A memorandum of understanding between EVN and Cambodia's Ministry of Industry, Mines and Energy was signed on 15 June 2007 (Baird, 2009). EVN appointed Vietnam PECC 1 to conduct the feasibility study for Lower Se San 2 dam and PECC 2 for Lower Se San 1 dam; and PECC 3 would study the transmission line for the two projects (ibid.). Following the completion of the feasibility study of the two hydropower projects in 2009, the two plants are expected to finish and put into operation in 2014 (Vietnam News, 2007).

The issue of how EVN is getting the projects done was not only related to the negotiation in the Cambodia-Vietnam Joint Committee meeting but also through a channel of bilateral cooperation meetings between Cambodia and Vietnam involving higher level of political decisions. During the ninth meeting of Cambodia-Vietnam Joint Commission for Economic, Cultural, Scientific and Technological Cooperation on 21 August 2007, the Cambodia and Vietnam Ministers of Foreign Affairs signed an agreement to affirm hydropower development cooperation as follows:

- Intensify power cooperation including developing hydropower potential of their respective countries, encouraging Vietnam company to invest in power plants in Cambodia and to work out a power trade/exchange mechanism between the two countries.
- EVN will invest in building two hydropower plans on Se San River, namely Lower Se San 1 and Lower Se San 2 in Cambodia after completion of the feasibility study by Vietnam electricity group in June 2009.

(Cambodia-Vietnam Joint Commission for Economic, Cultural, Scientific and Technological Cooperation, 2007)

Another channel which may influence the decision is also through cooperation between Cambodia and Vietnam Ministries of Interior. During the fourth meeting on 'Development and Cooperation of Vietnam-Cambodia Border Province' on 28 February 2008, the two ministers agreed "to encourage Vietnamese companies to invest in electricity plants in Cambodia and Cambodia side will facilitate Vietnamese companies to build two hydropower plants in Se San

River, namely Lower Se San 1 and Lower Se San 2 in Cambodia once the Vietnamese Electricity companies completes the feasibility studies in 2009” (Vietnam Ministry of Foreign Affair, 2008).

All in all, we cannot assume that the Joint Committee for Management of Se San River is fully the arena for negotiation between EVN of Vietnam and the Ministry of Industry, Mines and Energy of Cambodia to get the projects done by EVN. Other factors such as the Cambodia government’s interest in hydropower development and the political setting of the Cambodia government may strongly influence the decision for the engagement of EVN in the Se San too.

In Cambodia, the cost of electricity is amongst the highest in the world (ADB, 2005). The Ministry of Industry, Mines and Energy (MIME) reported the high cost of electricity due to small size of generation dependent on high cost imported oil, the lack of a high voltage transmission system and the big losses in distribution (MIME, 2006). Up until 2006, MIME (2006) reported that less than 15MW of the 10,000MW total hydropower potential in Cambodia has been exploited. Given the huge hydropower potential in Cambodia, Cambodia elites have expressed strong support for large-scale hydropower projects, citing the need to secure access to cheap electricity to supply Cambodia’s expanding economy (International Rivers and RCC, 2008, cited in Middleton et al., 2009). Over the past several years, hydropower development in Cambodia has attracted a number of foreign private investors, particularly from China. Middleton et al. (2009) argue that most of hydropower development projects in Cambodia have been contracted to Chinese companies in the favor of political and economic ties between Cambodia and Chinese governments which has been developed and strengthened over the past several years. The Chinese government has indicated high-level support for Cambodia’s hydropower plans. According to Middleton et al. (2009), four major hydropower projects with total capacity of about 897MW have been contracted to Chinese companies.

While the Chinese government takes a major role in hydropower development in Cambodia, a portion of the Mekong tributaries of Se San and Sre Pok Rivers which share the basin with Vietnam was contracted to EVN of Vietnam to develop hydropower. The reason behind the decision is more likely base on close political relationship between Cambodia Prime Minister and the Vietnamese leadership which helped to liberate from Khmer Rouge in 1979. As we have seen in chapter 5, the Cambodian committee assigned to the Joint Committee for the Management of Se San River to negotiate with Vietnam has been constrained with finance and could not independently organize a meeting since 2004. The fourth meeting in 2008 was fully financed under the EVN’s assistance (see chapter 5). To this end, I argue that lack of political support from the government made Cambodia committee paralyze in negotiating with its Vietnamese

counterpart, which is one of the reasons why EVN was given the opportunity to develop hydropower on the part of its territory while the issues raised by local communities and local, national and internal NGOs over compensation and mitigation impact remain unaddressed.

6.6 Conclusion

This chapter discussed four different issues in relation to responses from various actors across global and international arenas. The chapter examined the protest by distant actors against dam building, the action taken by the ADB, the power relations of the MRC Secretariat in handling the Se San issues, and the negotiation over dam building on the Se San River in Cambodia.

The aim of the discussion was to demonstrate that although there were strong supports and interventions from well-known dam advocating actors such as Probe International and International Rivers, dam issues remain the subject which is largely influenced by a web of inter-related actors such as the banks, the private financial institutes, the bilateral donors, the individuals from government agencies of Cambodia and Vietnam and the EVN who influence political system of decision making surrounding hydropower development. The level of influence exhibits interest of actors, the financial power, the political power, the strategies and tactics played by actors to steer and control over the issues, claims and the resources.

The main finding of this chapter is that despite there were multiplicity of actions and responses from international actors, the Electricity of Vietnam took control and steer the issues away from the international level to a bilateral level which was intended to simplify and narrow down the issue to only a particularly group of actors. This strategy is to reduce risk and increase probability to take control over negation not only to avoid compensation but also to expand further dam building in Cambodia for economic gain.

In section 6.2 I examined the relations between Probe International/International Rivers and the World Bank. I found that the failure of the World Bank response to the dam impacts was related to the Bank's interest in promoting energy development in Vietnam. As such both parties continued to hold different arguments and perspectives in which they stood. For instance, Probe International and International Rivers understood that without the World Bank's fund for transmission line electricity produced by the Se San dams cannot be transmitted. On the contrary, the World Bank defended its position that it was not involved in dam construction. The discussion also shows that the World Bank's argument was favorable to EVN than to the affected communities in Cambodia. This is due to the fact that the World Bank's policy toward energy

development in Vietnam was strongly rooted within the larger sphere of the World Bank's support to Vietnam in the early 1990s as well as present.

In section 6.3 I presented a case of responses undertaken by ADB. I found that Worley Ltd. Company which was contracted by ADB to assess Se San 3 dam was supportive to the local communities' claim over the effects of the Yali-Falls dam. However, the finding of this company was constrained by the strategies and tactics employed by EVN such as rejecting the report finding and requesting to keep the secrecy of the report not to be released, terminating request for fund from ADB and seeking funds from other sources. The strategies and tactics employed by EVN were to avoid the delay of the project and push forward dam building.

In this analysis I argue that constructing as many dams as possible is an ultimate goal of EVN. As we have seen from section 6.3, 6.4 and 6.5 every step EVN took is to speed up hydropower development as fast as possible. With regard to Se San 3 dam, EVN did not want the issue of the Yali-Falls dam to grow and delay the process of Se San 3 dam construction which was likely to go through a long process of study and verification required by ADB before releasing funds for this dam. Strategically, EVN just diverted its request to get funds from other sources and proceeded with construction as planned. With this strategy, EVN kills two birds with one stone. While the construction of Se San 3 dam went smoothly, EVN did not worry about the issue of compensation which was called by the Worley report of ADB funded study in regard to damages caused by water release from the Yali-Falls dam at the end of February 2000. Consequently, EVN has eliminated the issue raised at international level.

Any support by the MRC Secretariat which deems to be unsure about the results, EVN treated it cautiously. For example, EVN has rejected financial assistance of the MRC Secretariat in supporting environmental and social impact study on the Se San River. The reason behind this declination was related to comments made by the MRC Secretariat on TORs of Environmental and Social Impact Study of Downstream Se San River which imposed various procedures and issues that needed to be followed such as recruitment of independent consultant, taking into account NGOs reports on Yali-Falls dam impacts, and inclusion of compensation in the study. With the limitation of the functionality of the MRC Secretariat in conflict resolution, the negotiation between Cambodia and Vietnam is done bilaterally leaving rooms for EVN to maneuver, steer and control the agenda of the meeting such as avoiding the discussion of compensation. Given the loose functionality of the MRC, EVN has shifted the debate from the international arena to a favorable arena at a bilateral one.

EVN tried to accommodate its Cambodia counterpart in regard to solving the issue of operation of the Yali-Falls dam such as establishing notification system of water release, funding the studies of hydrodynamic modeling and environmental impact assessment, and building Se San 4a re-regulation dam (see chapter 5). During the process of the meetings of Joint Committee for Management of Se San River, EVN moved forward to negotiate with its Cambodia counterpart to extend its ambitious plan to develop more hydropower dams on the Cambodia's stretch of Se San River.

Given the fact that hydropower development is subject to a decision at the highest level, relationships between country leaders were seen as essential by EVN. As the case showed, a number of bilateral agreements were signed in relation to the development of hydropower in the Se San River. One of the inferences is the close political tie in which Vietnam has liberated the present government from the Khmer Rouge regime in 1979.

To that end, local communities complain that “the more the protests, the more the dams grow (author's field note from July to October 2007).”

CHAPTER 7

CONCLUSION

This thesis set out to explore how various actors have responded to hydropower dam impact in the Se San river basin as a way to unpack how planning process for the river basin management works in practice. The theoretical conception for understanding responses was found in an actor-oriented approach which denotes the study of conflict between and among various actors who involved in the development intervention. In this study the term conflict was used to represent what Norman Long (2001) called social interface where conflict of interest are fought on arenas.

The February 2000 flood event caused by water release from the Yali-Falls dam was identified as a point of departure in which conflict of water resources use in the Se San basin began to take shape and emerge between the affected communities in Cambodia and the dam owner in Vietnam. This does not mean that conflict of interest was fought only between the two parties. The essence of actor-oriented approach lies on the concept of 'agency', which attributes to the individual actor the capacity to possess social relation and devise modes of coping with life (Long, 2001). Therefore, various actors with different interest took part in the conflict and act according to the capacity that each actor plays at different levels. This study identified three levels of arena in which conflict of interest were fought, that is local, national, and international/global.

The first case to be examined in this study was responses at local arena. At this level responses began to emerge as a result of interaction between the affected communities and individuals from local and international NGOs working in Ratanakiri province. This means that social relation between the affected communities and the NGOs has been constructed at the soonest after the February 2000 flood event. An example of this social relation was the impact study conducted jointly by Ratanakiri Fisheries Office and Non-Timber Forest Product (NTFP) non-governmental organization in April 2000. Through this study, interaction between the study team, which also included international expert, and the affected communities of all 60 villages in Ratanakiri province was an important event in which local and expert knowledge had been exchanged. As the case showed in chapter 4, most of local communities started to know about the Yali-Falls dam only during the study in April 2000. While expert learnt and documented about the impact of the dam on local livelihoods, local communities began to know for the first time in their life about the dam and the effect they would face.

The interaction between the local communities and the NGOs did not stop after the April 2000 study but the relation between the two entities became more apparent and led to a construction of social network at local level to advocate the right of local communities to be respected. For instance the Se San Protection Network (SPN) was established to serve this purpose. In this case SPN was constructed to make space for affected communities to form a strong collective action against the dam builder. In this study I found that SPN was not directly constructed by the local communities but with a strong support of Oxfam America through the facilitation of local and international experts. In this case SPN does not stand alone at the local level but networks with one another at national and international levels. This network has grown strongly at national and international levels. For example a coalition of activists and experts was established and transformed from the Se San Working Group to 3 S Working Group and then River Coalition in Cambodia. The members of this coalition group consist of actors at national and international levels. While NGO Forum for Cambodia plays a major role to coordinate the advocacy activity of local communities with concerned governmental agencies at national level to press for negotiation with dam builder EVN in Vietnam, Probe International and International Rivers play a key role to advocate the World Bank at international level to put pressure on EVN to stop further dam building and appealed for finding solution.

As we have seen from the above we can argue that the local communities are empowered through network relation with various actors at national and international levels. In this study I found that network relation between local communities and NGOs at national and international levels were strongly established. On the contrary the relation between NGOs and the governmental agencies at national level was not strongly created. This does not mean that the work of NGOs is poorly organized but rather the governmental agencies are reluctant to support NGOs because of the influence of interest of Cambodian government which favors the bilateral cooperation with Vietnam established since 1979 as well as its interest in building dam in its own stretch in Se San River. An example of this is that up to 2007, local communities had sent six petitions to Cambodian Prime Minister to help negotiating with Vietnam to stop further dam building and compensate losses but until now no action has been taken to respond to the communities' request.

The second case which I examined was the responses at national arena where national government plays a major role in finding solution particularly after the affected communities and NGOs appealed for actions. In this case I found that the Cambodia National Mekong Committee (CNMC) plays a major role. This is because of the relationship that CNMC has with other signatory states to the 1995 Mekong Agreement in which Vietnam is one of the members. The

analysis at this arena was therefore cross-cutting at the international arena where responses were done through the Mekong River Commission (MRC) Secretariat, whose role was to play as an intermediary to bring the Cambodia party to negotiate with Vietnam party. The finding of this study suggested that the MRC Secretariat has no power to impose measures or compensation on Vietnam and its responses can only be done if the two governments requested. This shows that the power of the MRC Secretariat is weak and therefore characterized by the influence of national interest of the member countries (see also Hirsch et al., 2006). As the MRC Secretariat has no power to act on its own stand, the negotiation between Cambodia and Vietnam took place bilaterally not under the influence of the MRC framework in which independent international mediator should be enrolled (see also Wyatt and Baird, 2007).

In this study I claim that the involvement of the MRC Secretariat in Se San issue gained a short momentum after the February 2000 flood event, for instant conducting a field fact-finding mission to Ratanakiri province, establishing water level monitoring stations on Cambodia's stretch of Se San River, and helping to establish the Cambodia-Vietnam Joint Committee for the Management of Se San River, all of which were done in 2000 and 2001. The momentum of the engagement of the MRC Secretariat became weaker and weaker shifting from a facilitator role in the first, second and third meetings of the Cambodia-Vietnam Joint Committee in 2001, 2002 and 2003 respectively to an observer in the fourth committee's meetings in 2008. This shows that conflict resolution mechanism for river basin management within the MRC framework is poorly structured.

Although I claim that the MRC Secretariat was institutionally weak in response to the Yali-Falls dam, it is not necessary that the interaction between individuals working at the MRC Secretariat and the CNMC was also weak. As the case showed, the MRC Secretariat was supportive to CNMC during the negotiation for hydrodynamic modeling and impact studied in the second meeting of the Cambodia-Vietnam Joint Committee in 2002. This shows that the CNMC gained some powers from the MRC Secretariat to negotiate with Vietnam. The funding for EIA study committed by the MRC Secretariat during the second meeting is also another supportive example to the CNMC. Although much has been assisted by the MRC Secretariat, the Electricity of Vietnam (EVN) considered some of these assistances with caution. If the EIA were to be financed by the MRC Secretariat the EVN would not fully be able to control over the result of the study, the reason why the EVN decided to fund from its own source.

Among the other things which were identified to mitigate downstream impact from Yali reservoir operation was the establishment of warning system from the dam site down to the local

communities in Cambodia. However, the implementation of this measure was not successful as the information did not reach the affected communities smoothly. In this regard, I argue that the warning system which was established by the Cambodia government agencies and the EVN of Vietnam is just a game in which EVN of Vietnam painted a picture to show something is being done to mitigate the impact.

The third case which I examined is the international and global arenas where the issue on dam development was put into discussion in international and global agenda. In this study the role of distant actors was identified as important in supporting local communities to fight against dam building and to help advocate dam building supporters to press EVN of Vietnam to stop building dam and compensate losses resulting from hydropower dam operation. In this study I presented the interaction between Probe International/International Rivers and the World Bank. The debate between the two entities continued to hold different view in regard to the involvement of the Bank in supporting EVN to build transmission line connecting the Yali-Falls dam site to Ho Chi Minh City. This study found that although the Bank did not support dam building directly but the Bank played an indirect role behind the scene and thereby favoring EVN to build more dams rather than blocking to favor local communities in Cambodia.

To move forward dam building as fast as possible EVN has shifted the issue which was raised at international and global levels to a bilateral level which is more favorable to take control over negotiation between Cambodia and Vietnam. This may be in part due the closeness of the current Cambodian regime to Vietnam and hence reluctance of the government to offend its stronger neighbor. Not only dam issue remains unsolved but the Cambodia government has asked Vietnam to build more dams on the Cambodia's stretch of Se San River. This shows that hydropower dam development has become a strong interest of Cambodia government while the issue raised by local communities has been largely ignored.

Overall, planning process in Se San river basin highly served the interest of dam builders as well as national development priority of individual country and failed to take into account the interest of local communities whose livelihoods depend on river system for living. To meet their interests and goals, powerful actors zigzagged their strategies to avoid claims made by affected communities and NGO sector. Therefore, future interventions should consider a clear role of river basin organization in possessing the mandate to enforce rule and regulation to support local communities to have a say in conflict resolution for river basin management.

REFERENCES

1. INTERVIEWS

CAMBODIA

- Bun Narith, Deputy Director General, Ministry of Industry, Mines and Energy. Interview on 22 November 2007. Phnom Penh, Cambodia.
- Cheang Hong, Senior Program Officer, Cambodia National Mekong Committee. Interview on 10 May 2007. Phnom Penh, Cambodia.
- H.E. Bun Hean, Chairman of Standing Committee on the Coordination on Dams and Canals along the border of Cambodia-Vietnam-Laos and Thailand, and General Director of Technical Affairs, Ministry of Water Resources Management and Meteorology. Interview on 24 May 2007. Phnom Penh, Cambodia.
- H.E. Hou Taing Eng, Secretary General, Cambodia National Mekong Committee. Interview on 16 May 2007. Phnom Penh, Cambodia.
- H.E. Kol Vathana, Deputy Secretary General, Cambodia National Mekong Committee. Interview on 17 May 2007. Phnom Penh, Cambodia.
- H.E. Pich Dun, Deputy Secretary General, Cambodia National Mekong Committee. Interview on 18 May 2007. Phnom Penh, Cambodia.
- H.E. Sin Niny, Vice-chairman, Cambodia National Mekong Committee. Interview on 21 May 2007. Phnom Penh, Cambodia.
- Long Saravuth, Acting Director, Department of Meteorology, Ministry of Water Resources Management and Meteorology. Interview on 25 May 2007. Phnom Penh, Cambodia.
- Mao Hak, Director, Department of Hydrology and River Works, Ministry of Water Resources Management and Meteorology. Interview on 5 July 2007. Phnom Penh, Cambodia.
- Ngy San, Deputy Executive Director, NGO Forum on Cambodia. Interview on 7 February 2008. Phnom Penh, Cambodia.
- Nhim Sophea, Water quality monitoring Expert, Department of Hydrology and River Works, Ministry of Water Resources Management and Meteorology. Interview on 28 May 2007. Phnom Penh, Cambodia.

- Nong Sareth, Deputy Director, Department of Hydropower, Ministry of Industry, Mines and Energy. Interview on 27 November 2007. Phnom Penh, Cambodia.
- Sok Saing Im, Senior hydrology expert, Freelance consultant. Interview on 27 November 2007. Phnom Penh, Cambodia.
- Tep Bunnarith, Executive Director, Culture and Environment Preservation Association. Interview on 22 May 2007. Phnom Penh, Cambodia.
- Victor Jona, Deputy Director General, Ministry of Industry, Mines and Energy. Interview on 19 November 2007. Phnom Penh, Cambodia.
- Watt Botkosal, Director, Planning Department, Cambodia National Mekong Committee. Interview on 11 May 2007. Phnom Penh, Cambodia.
- Xiaozi Liu, Regional Program Officer, Mekong River Basin Management, East Asia Regional Office, Oxfam America. Interview on 23 May 2007. Phnom Penh, Cambodia.

Mekong River Commission Secretariat

- Do Manh Hong, Director of Operation Division. Interview on 20 December 2007. Vientiane, Laos.
- Keu Moua, Senior Program Officer, Environment Division. Interview on 10 December 2007. Vientiane, Laos.
- Tatsuo Kunieda, Senior Advisor on River Management, Basin Development Plan, Planning Division. Interview on 12 December 2007. Vientiane, Laos.
- Ton Lennaerts, Chief Technical Advisor, Basin Development Plan, Planning Division. Interview on 13 December 2007. Vientiane, Laos.
- Worawan Sukraroek, Program Officer, Environment Division. Interview on 18 December 2007. Vientiane, Laos.

VIETNAM

- Doan Ke Ruan, Senior hydrologist, Power Engineering Consulting Company 1, Electricity of Vietnam. Interview on 10 January 2008. Hanoi, Vietnam.
- Hoang Dieu Hang, Program Officer, Development Cooperation, Embassy of Sweden, Hanoi. Interview on 7 January 2008. Hanoi, Vietnam.

- Kirsti Digerud, First Secretary, Development Cooperation, Royal Norwegian Embassy, Hanoi. Interview on 18 January 2008. Hanoi, Vietnam.
- Le Duc Trung, Deputy Secretary General, Vietnam National Mekong Committee. Interview on 17 January 2008. Hanoi, Vietnam.
- Le Hung Nam, Chief of Water Environment Planning Division and Water Environmental Laboratory. Institute of Water Resources Planning. Ministry of Agriculture and Rural Development. Interview on 11 January 2008. Hanoi, Vietnam.
- Le Thi Ngoc Quynh, Deputy Director, Department of Science, Technology and Environment, Electricity of Vietnam. Interview on 15 January 2008. Hanoi, Vietnam.
- Nguyen Hong Toan, Secretary General, Vietnam National Mekong Committee. Interview on 3 January 2008. Hanoi, Vietnam.
- Nguyen Nhan Quang, Deputy Secretary General, Vietnam National Mekong Committee. Interview on 14 January 2008. Hanoi, Vietnam.
- Nguyen Thi Ky Nam, Senior Program Officer, Vietnam National Mekong Committee. Interview on 4 January 2008. Hanoi, Vietnam.
- Tran Duc Cuong, Deputy Secretary General, Vietnam National Mekong Committee. Interview on 9 January 2008.
- Tran Trong Chinh, Advisor, Development Cooperation, Royal Norwegian Embassy, Hanoi. Interview on 18 January 2008. Hanoi, Vietnam.
- Vu Minh Tien, Program Officer for Hydropower, Vietnam National Mekong Committee. Interview on 4 January 2008. Hanoi, Vietnam.
- Vu Thi Tam Dan, Deputy Manager of Personnel and Administration, and Manager for National Hydropower Master Plan. Electricity of Vietnam. Interview on 16 January 2008. Hanoi, Vietnam.
- Vu Van Tuan, Deputy director, Vietnam Institute of Meteorology, Hydrology and Environment, Ministry of Natural Resources and Environment. Interview on 8 January 2008. Hanoi, Vietnam.

Ratanakiri Province (Province, district, commune and village)

- Ab Deu, Acting Governor of Taveng district. Interview on 3 September 2007. Ratanakiri, Cambodia.

- Amy Trandem, Information Advisor, 3S Rivers Protection Network (3SPN). Interview on 20 June 2007. Ratanakiri, Cambodia.
- Chan Sopheak, Administrative and Finance Officer, 3S Rivers Protection Network (3SPN). Interview on 14 June 2007. Ratanakiri, Cambodia.
- Che Kai, Fisherman in Lameuy village, Veun Sai district on 17 October 2007. Ratanakiri, Cambodia.
- Chea Hor, Project Manager Assistant, Welt Hunger Hilfe (German Agro Action – GAA). Interview on 23 October 2007. Ratanakiri, Cambodia.
- Cheang Lon, Vice-chief of Taveng Krom Commune, Taveng district. Interview 13 September 2007. Ratanakiri, Cambodia.
- Chenda Ravuth, Project Manager, Centre d’Etude et de Développement Agricole Cambodgien (CEDAC). Interview on 24 October 2007. Ratanakiri, Cambodia.
- Chi Krodan, Vice-chief of Taveng Krom Commune, Tanveng district. Interview on 13 September 2007. Ratanakiri, Cambodia.
- Chim Cheat, fisherman in Talim village, Veun Sai district. Interview on 16 October 2007. Ratanakiri, Cambodia.
- Den In, Fisherman in Kachon Krom village, Veun Sai district on 12 October 2007. Ratanakiri, Cambodia.
- Ev Phal, GIS Advisor, Ratanakiri Department of Land Use and Urban Planning. Interview on 25 June 2007. Ratanakiri, Cambodia.
- Heng Saveun, Deputy Governor of Veun Sain district. Interview on 8 October 2007. Ratanakiri, Cambodia.
- Keo Paov, Vice-chief, Provincial Rural Development Committee, Ratanakiri. Interview on 4 June 2007. Ratanakiri, Cambodia.
- Kham Phun Kok, Chief of Tiem Leu village, Veun Sai district on 15 October 2007. Ratanakiri, Cambodia.
- Khen Ling, Chief of Pakalan commune, Veun Sai district. Interview on 9 October 2007. Ratanakiri, Cambodia.

- Khim Sokhon, Chief of Meteorology Office, Ratanakiri Department of Water Resources and Meteorology. Interview on 12 June 2007. Ratanakiri, Cambodia.
- Khlan Liam, Focal Person for Andong Meas district Se San Community Network. Interview on 30 July 2007. Ratanakiri, Cambodia.
- Kim Sangha, Coordinator, 3S Rivers Protection Network (3SPN). First interview on 11 June 2007, Ratanakiri, Cambodia. Second interview by phone on 30 September 2008. Ratanakiri, Cambodia.
- Klan Thy, villager in Lom Leng village, Andong Meas district. Interview on 9 August 2007. Ratanakiri, Cambodia.
- Lim Kham Moun, villager in Pankit village, Taveng district. Interview on 7 September 2007. Ratanakiri. Cambodia.
- Lou Ven Khim, Chief of Kachon commune, Veun Sai district. Interview on 12 October 2007. Ratanakiri, Cambodia.
- Markus Freund, Manager of VOR ORT, and member of Ratanakiri NGO Network. Interview on 16 August 2007. Ratanakiri, Cambodia.
- Meach Mean, Acting Coordinator, 3S Rivers Protection Network (3SPN). First interview on 21 June 2007, Ratanakiri, Cambodia. Second interview by phone on 03 October 2008, Bonn, Germany.
- Meung Soun, Chief of Taveng Krom Commune, Taveng district. Interview 13 September 2007. Ratanakiri, Cambodia.
- Mon Se, Chief of Phayang Leu village. Taveng district. Interview on 17 September 2007. Ratanakiri, Cambodia
- Nab Bun Heng, Chief, Ratanakiri Provincial Cabinet Office. Interview on 4 June 2007. Ratanakiri, Cambodia.
- Neang Sam Ath, Local Administration Advisor, Project to Support Democratic Development through Decentralization and Deconcentration (PSDD), UNDP. Interview on 18 June 2007. Ratanakiri, Cambodia.
- Ngoun Mom, Focal Person for Veun Sai district Se San Community Network. Interview on 27 September 2007. Ratanakiri, Cambodia.

- Nou Teng, Chief of Kalan village, Veun Sai district. Interview on 11 October 2007. Ratanakiri, Cambodia.
- Pau Bun Soum, Focal Person for Taveng district Se San Community Network. Interview on 30 August 2007. Ratanakiri, Cambodia.
- Pheu Tia, Chief of Ki Koung Krom village, Taveng district. Interview on 18 September 2007. Ratanakiri, Cambodia.
- Romam Ponh, District governor, Andong Meas district. Interview on 8 August 2007. Ratanakiri, Cambodia.
- Romam Vet, Village chief of Inn village, Andong Meas district. Interview on 23 August 2007. Ratanakiri, Cambodia.
- Romas Veun, Vice-chief of Se San Commune, Oyadao district. Interview on 17 July 2007. Ratanakiri, Cambodia.
- Sai Bun Ma, Vice chief of Pakalan commune, Veun Sai district. Interview on 9 October 2007. Ratanakiri, Cambodia.
- Sai Bunlam, Network Support Officer, 3S River Protection Network (3SPN). First interview on 27 June 2007. Ratanakiri, Cambodia. Second interview by phone on 16 February 2008.
- Sat Ratana, Acting chief of Administration Office, Ratanakiri Department of Agriculture, Forestry and Fisheries. Interview on 5 June 2007. Ratanakiri, Cambodia.
- Seng Kronh, Vice-chief, Agro-industry office, Ratanakiri Department of Agriculture, Forestry and Fisheries. Interview on 5 June 2007. Ratanakiri, Cambodia.
- Sopha Sobin, Chief of Talao Commune, Andong Meas district. Interview on 21 August 2007. Ratanakiri, Cambodia.
- Tha Bun Lot, Vice-chief of Talao Commune, Andong Meas district. Interview on 21 July 2007. Ratanakiri, Cambodia.
- Thoung Sam Ath, Deputy Director, Ratanakiri Department of Planning. Interview on 7 June 2007. Ratanakiri, Cambodia.
- Um Sovanna, Chief of Hydrology Office, Ratanakiri Department of Water Resources and Meteorology. Interview on 12 June 2007. Ratanakiri, Cambodia.

- Uy Nen, Fisherman in Pang village, Veun Sai district on 18 October 2007. Ratanakiri, Cambodia.
- Veng Phany, Focal Person for Taveng district Se San Community Network. Interview on 30 August 2007. Ratanakiri, Cambodia.
- Yorn Chetana, Director, Ratanakiri Department of Water Resources and Meteorology. Interview on 13 June 2007. Ratanakiri, Cambodia.

2. FOCUS GROUP DISCUSSION BY DISTRICT

Oyadao District

- Focus group discussion with villagers in Phi village on 17 July 2007.
- Focus group discussion with villagers in Katang village on 19 July 2007.
- Focus group discussion with villagers in Padal village on 24 July 2007.

Andong Meas District

- Focus group discussion with villagers in Tangse village on 7 August 2007.
- Focus group discussion with villagers in Dal village on 8 August 2007.
- Focus group discussion with villagers in Kachout village on 9 August 2007.
- Focus group discussion with villagers in Tanong village on 13 August 2007.
- Focus group discussion with villagers in Kak village on 14 August 2007.
- Focus group discussion with villagers in Kanat village on 21 August 2007.
- Focus group discussion with villagers in Talao village on 22 August 2007.
- Focus group discussion with villagers in Inn village on 23 August 2007.
- Focus group discussion with villagers in Lom Leng village on 24 August 2007.

Taveng District

- Focus group discussion with villagers in Chan village on 4 September 2007.
- Focus group discussion with villagers in Chouy village on 5 September 2007.
- Focus group discussion with villagers of Ta Bok village on 6 September 2007.
- Focus group discussion with villagers in Pangkit village on 7 September 2007.

- Focus Group discussion with villagers in Rieng Vinh village on 11 September 2007.
- Focus group discussion with villagers in Kikoung Leu on 12 September 2007.
- Focus group discussion with villagers in Sonh village on 12 September 2007.
- Focus group discussion with villagers in Taveng village on 13 September 2007.
- Focus group discussion with villagers in Phleu Thom village on 13 September 2007.
- Focus group discussion with villagers in Ta Ngach village on 14 September 2007.
- Focus group discussion with villagers in Phayang Leu village on 17 September 2007.
- Focus group discussion with villagers in Kikoung Krom on 18 September 2007.
- Focus group discussion with villagers in Sieng Sai village on 18 September 2007
- Focus group discussion with villagers in Koh Pang village on 19 September 2007.
- Focus group discussion with villagers in Tom Poun Reung Thom on 19 September
- Focus group discussion with villagers in Tom Poun Reung Toch village on 20 September 2007.
- Focus group discussion with villagers in Phao village on 20 September 2007.
- Focus group discussion with villagers in Vientiane village on 21 September 2007.

Veun Sai District

- Focus group discussion with villagers in Lumpoat village on 2 October 2007.
- Focus group discussion with villagers in Veun Hoi village on 3 October 2007.
- Focus group discussion with villagers in Hat Pok village on 4 October 2007.
- Focus group discussion with villagers in Tiem Krom village on 5 October 2007.
- Focus group discussion with villagers in Kampong Cham village on 9 October 2007.
- Focus group discussion with villagers in Pakalan village on 9 October 2007.
- Focus group discussion with villagers in Phnom Kok Lao village on 10 October 2007.
- Focus group discussion with villagers in Kalan village on 11 October 2007
- Focus group discussion with villagers in Kachon Krom village on 12 October 2007
- Focus group discussion with villagers in Kachon Leu village on 12 October 2007.

- Focus group discussion with villagers in Tiem Leu village on 15 October 2007.
- Focus group discussion with villagers in Talim village on 16 October 2007.
- Focus group discussion with villagers in Lameuy village on 17 October 2007.
- Focus group discussion with villagers in Pang village on 18 October 2007.
- Focus group discussion with villagers in Veun Sai village on 19 October 2007.

3. BIBLIOGRAPHY

- 3S Working Group, 2003. Minutes of meeting: Visit from World Bank Country Director Nisha Agrawal. 25-29 August 2003. Ratanakiri, Cambodia.
- 3S Working Group, 2005a. Minutes of meeting with Standing Committee on the Coordination of Dam-Canal along the border of Cambodia-Vietnam-Laos and Thailand. 20 May 2005. Phnom Penh, Cambodia.
- 3S Working Group, 2005b. Minutes and the result of the meeting with the third Commission of the National Assembly. 16 August 2005. Phnom Penh, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2006a. EIA Training Workshop. 3SPN Local News Update, October 2006. Ratanakiri, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2006b. 3SPN and NGO Forum on Cambodia host this year's 3 S Rivers Celebration. 3SPN Local News Update, June 2006. Ratanakiri, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2006c. Re-regulating dam planned for the Se San River. Ratanakiri, Cambodia. 3SPN Local News Update, October 2006. Ratanakiri, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2006d. Cambodia and Vietnam meet to discuss water quality in the Se San River. 3SPN Local News Update, June 2006. Ratanakiri, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2007a. Abandoned Villages along the Se San River in Ratanakiri Province, Northeastern Cambodia. 3S River Protection Network, Banlung, Ratanakiri Province, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2007b. Se San EIA Meeting Held despite Local Complaints. 3 S Rivers Protection Network Local News Update, August 2007. Ratanakiri, Cambodia.
- 3SPN (3 S Rivers Protection Network), 2009. Se San Communities Caught Off-guard by Vietnam Dam Releases. Press Release – Ratanakiri, Cambodia.
- ADB (Asian Development Bank), 2000. Cambodia Enhancing Governance for Sustainable Development. Manila, the Philippines.
- ADB (Asian Development Bank), 2002. Indigenous Peoples, Ethnic Minorities and Poverty Reduction. Cambodia Country Report. Environment and Social Safeguard Division. Manila, the Philippines.

- ADB (Asian Development Bank), 2005. Country strategy and program 2005-2009: Kingdom of Cambodia. Asian Development Bank, Manila, the Philippines.
- ADB (Asian Development Bank), 2006. The Se San, Sre Pok and Se Kong River Basins Development Study in Cambodia, Lao PDR and Vietnam (draft), Manila, Philippines.
- ADB (Asian Development Bank), 2007. Country Paper: Cambodia. Asian Water Development Outlook 2007. Manila, the Philippines.
- AMRC (Australian Mekong Resource Center), 2002. Map of Se San River Basin. http://www.mekong.es.usyd.edu.au/case_studies/sesan/sesanwatershed/sesanbasin.htm (access on 17 March 2009).
- An, Pich Hatda and Hak Mao, 2002. Strategic planning and management of water resources development. Cambodia Country Paper presented in MRCS/U.N-ESCAP Sub-regional Workshop 16-19 July 2002. Phnom Penh, Cambodia.
- Arce, Alberto and Norman Long, 1992. The dynamics of knowledge: Interfaces between bureaucrats and peasants. In Long and Long 1992: Battlefields of Knowledge: The interlocking of theory and practice in social research and development. Routledge. London and New York.
- Backer, Ellen Bruzelius, 2007. The Mekong River Commission; Does it work, and how does the Mekong Basin's geography influence its effectiveness? *Südostasien aktuell/Journal of Current Southeast Asian Affairs*, Vol. 26, No. 4, 2007, p. 31-55.
- Baird, I., M. Baird, C.M. Cheath, K. Sangha, N. Mekradee, P. Sounith, P.B. Nyok, P. Sarim, R. Savdee, H. Rushton, and S. Phen, 2002. A Community-Based Study of the Downstream Impacts of the Yali-Falls dam along the Se San, Sre Pok and Se Kong Rivers in Stung Treng Province, Northeast Cambodia, March 2002, Ratanakiri: Report published by Se San Protection Network Project, Partners for Development, Non-Timber Forest Products Project, Se San District Agriculture, Fisheries and Forestry Office, and Se San District Office.
- Baird, Ian G. 2009. Best Practices in Compensation and Resettlement for Large Dams: The Case of the Planned Lower Se San 2 Hydropower Project in Northeastern Cambodia. River Coalition in Cambodia, Phnom Penh.
- Betlem, I. 1998. River basin planning and management. In Correia, F N (ed). Water resources management in Europe. Selected issues in water resources management in Europe. Volume II. Rotterdam: Balkema.

- Bierschenk, Thomas, 1988. "Development Project as arenas of negotiation for strategic groups – A case study from Benin", *Sociologia Ruralis*, Vol. XXVIII, pp. 146-160.
- Booth, David, 1994. *Rethinking Social Development: Theory, Research and Practice*. Longman Scientific & Technical.
- Brown, M. 1966. Urban form, *Journal of the Town Planning Institute*, Vol. 52, pp. 3-10.
- Buller, H. 1996. Towards sustainable water management: Catchment planning in France and Britain. *Land Use Policy* 13(4):289-302.
- Cambodia-Vietnam Joint Commission for Economic, Cultural, Scientific and Technological Cooperation, 2007. Agreement Minutes of the Ninth Meeting of the Cambodia-Vietnam Joint Commission for Economic, Cultural, Scientific and Technological Cooperation. 21 August 2007. Phnom Penh, Cambodia.
- Cambodia-Vietnam Joint Committee, 2001. Minutes of the first Cambodia-Vietnam Joint Committee meeting for the Management of the Se San River. 26 July 2001. Nha Trang, Vietnam.
- Cambodia-Vietnam Joint Committee, 2002. Minutes of the second Cambodia-Vietnam Joint Committee meeting for the Management of the Se San River. 9 April 2002. Phnom Penh, Cambodia.
- Cambodia-Vietnam Joint Committee, 2003. Minutes of the third Cambodia-Vietnam Joint Committee meeting for the Management of the Se San River. 4-7 November 2003. Pleiku, Vietnam.
- Cambodia-Vietnam Joint Committee, 2008. Minutes of the fourth Cambodia-Vietnam Joint Committee meeting for the Management of the Se San and Sre Pok Rivers. 4-5 March 2008. Pleiku, Vietnam.
- Canby Publications Co., Ltd., 1997. Map of Ratanakiri Province, Cambodia. <http://www.canbypublications.com/maps/provrattan.htm> (access on 23 August 2008).
- Cech, Thomas V., 2003: *Principles of water resources: history, development, management and policy*. John Wiley & Sons, Inc.
- Cernea, Michael M., 2004. Social Impacts and Social Risks in Hydropower Programs: Preemptive Planning and Counter-risk Measures. Keynote address: Session on Social Aspects

of Hydropower Development at the United National Symposium on Hydropower and Sustainable Development held in Beijing, China from 27-29 October, 2004.

- Checkoway, Barry, 1986: Political strategy for social planning. In Barry: Strategic perspectives on planning practice, Lexington, Massachusetts, USA, pp.195-214.
- CNMC (Cambodia National Mekong Committee), 2002. Report of meeting between Cambodia National Mekong Committee and Se San Protection Network on upstream Vietnamese hydropower impacts on local livelihoods in northeast Cambodia. 25 November 2002. Phnom Penh, Cambodia.
- Covich, A.P. 1993. "Water and Ecosystems," in P.H. Gleick (ed.), *Water in Crisis: A Guide to the World's Fresh Water Resources*. Oxford University Press, New York, p. 40-55.
- Dahlbom, Sanne, 2007. *Local Responses to Development and Conservation Projects – from an Actor Perspective: A case study in Rio San Juan, Nicaragua*. Master thesis in International Development Studies & Technological and Socio-Economic Planning, Roskilde University, Denmark.
- Dale, Reidar, 2004. *Development planning: concepts and tools for planner and managers and facilitator*. ZED Books.
- Davidoff, P. and T.A. Reiner, 1962. A choice theory of planning, *Journal of the American Institute of Planners*, Vol. 28, May (reprinted in Faludi, 1973. *A reader in planning theory*, Oxford, Pergamon Press, op.cit., pp. 11-39).
- De Vaus, David A., 2001. *Research Design in Social Research*. Sage Publications.
- Dore, John, 2003. The governance of increasing Mekong regionalism, in: *Social Challenges for the Mekong Region*, edited by J. Dore and M. Kaosa-ard, Bangkok: White Lotus.
- ECAFE (United Nations Economic Commission for Asia and Far East), 1957. *Development of Water Resources in the Lower Mekong Basin*. Bangkok.
- ECAFE (United Nations Economic Commission for Asia and the Far East), 1968. *Upper Se San Development Project (Vietnam)*. Bangkok.
- Ede, B., 2003. Letter from ADB, NGO Liaison Office, to Russell Paterson, NGO Forum of Cambodia dated 1 August (Manila).
- Electrowatt Ltd., 1993. *Environmental and Financing Studies on the Yali-Falls Hydropower Project (Basin Wide)*. Volume 1. Executive Summary. Mekong Secretariat. Bangkok.

- Ellen, Roy, 2007. *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island Southeast Asia*. Berghahn Books, New York. Oxford.
- Ellen, Roy, 2007. *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island Southeast Asia*. Berghahn Books, New York. Oxford.
- England, Sarah B. and Daniel M. Kammen, 1993. *Energy resources and development in Vietnam*. Annual Review Inc.
- Escobar, Arturo. 1998. *Planning*. In Wolfgang, Sachs (ed). 1998. *The development dictionary: A guide to knowledge as power*.
- Faludi, Andreas, 1973. *Planning Theory*. Pergamon Press.
- Fisheries Office, 2000. *A Study of the Downstream Impacts of the Yali-Falls Dam in the Se San River Basin in Ratanakiri Province, Northeast Cambodia*. The Fisheries Office, Ratanakiri Province in Cooperation with the Non-Timber Forest Products (NTFP) Project. 29 May 2000. Ratanakiri Province, Cambodia.
- Foucault, M., 1980. in Gordon (ed.), 1980. *Power/Knowledge: Selected Interviews and Other Writings 1972-1977* by Michel Foucault, New York: Pantheon Harvester Press.
- Friedmann, J. 1966. *The institutional context, Action under Planning* (edited by Gross, B. M.), McGraw Hill, New York.
- Fude, I, undated. *Water Resources Planning*. Asian Institute of Technology. China.
- Giddens, A., 1984. *The constitution of society: an outline of the theory of structuration*, Cambridge: Polity Press.
- Gleick, Peter H., 1993. *Water in Crisis: A guide to the world's fresh water resources*. Oxford University Press.
- Gleick, Peter H., 1998: *The World's Water 1998-1999: The Biennial Report on Fresh Water Resources*. Island Press, Washington, D.C. Covelo, California.
- Goldsmith, E. and N. Hildyard, 1984. *The Social and Environmental Effects of Large Dams. Volume 1: Overview*. Published by Wadebridge Ecological Center, U.K.
- Gordon, C., 1980. *Power/Knowledge: Selected Interviews and Other Writings 1972-1977* by Michel Foucault, New York: Pantheon Harvester Press.

- Gore, Charles, 1984. *Regions in question: space, development theory and regional policy*. Methuen & Co.Ltd, London.
- Goulet, D., 1971. *The Cruel Choice: A New Concept on the Theory of Development*, Atheneum, New York.
- Greacen, Chris and Apsara Palettu, 2007. *Electricity sector planning and hydropower in the Mekong Region*. In Lebel, L.; J. Dore; R. Daniel and Y. S. Koma, 2007. *Democratizing Water Governance in the Mekong Region*. Mekong Press.
- Green, Andrew, 1999. *An Introduction to Health Planning in Developing Countries*. Second edition. Oxford University Press.
- GWP (Global Water Partnership), 2003. *Effective water governance, TEC background papers No. 7*, Sweden.
- Himel, J and Sovanna Nhem, 1997. *Balancing Change. Paddy Rice and Water Control in Ratanakiri Province*. Hydrology Assessment of Ratanakiri Province. Main Report. International Development Research Center and UNDP UNOPS CARERE, Ratanakiri, Cambodia.
- Hindess, B., 1986. 'Actors and Social Relations', in M.I. Wadell and S.P. Turner (eds) *Sociological Theory in Transition*, Boston: Allen and Unwin.
- Hirsch, Philip and Andrew Wyatt, 2004. *Negotiating local livelihoods: Scales of conflict in the Se San River Basin*. Asia Pacific Viewpoint, Vol. 45, No.1, April 2004. ISSN: 1360-7456, pp51-68.
- Hirsch, Philip, Kurt Mørck Jensen, Ben Boer, Naomi Carrard, Stephen FitzGerald and Rosemary Lyster, 2006. *National Interests and Transboundary Water Governance in the Mekong*. Australian Mekong Resource Center, Danish International Development Assistance and the University of Sydney.
- IMC (Interim Mekong Committee), 1988. *Perspectives for Mekong Development: Revised Indicative Plan (1987) for the Development of Land, Water and Related Resources of the Lower Mekong Basin*. Bangkok, Thailand.
- International Law Association, 1966. *Helsinki Rules on the Uses of the Waters of International Rivers*, adopted by the International Law Association at the 52nd conference, Helsinki, 20 August 1966, International Law Association, London.

- International Rivers and RCC (Rivers Coalition of Cambodia), 2008. Cambodia's Hydropower Development and China's Involvement. International Rivers and the NGO Forum on Cambodia.
- IWMI (International Water Management Institute), 2007. Water for Food Water for Life: A Comprehensive Assessment of Water Management in Agriculture. Earthscan.
- Jacobs, Jeffrey W., 2002. The Mekong River Commission: Transboundary Water Resources Planning and Regional Security. *The Geographical Journal*, Vol. 168, No. 4, pp. 354-364.
- Jacobs, Jeffrey, 1992. International River Basin Development and Climatic Change: The Lower Mekong of Southeast Asia. A PhD. Dissertation. Dept. of Geography, University of California.
- Jain, S.K., and V.P. Singh, 2003. Water Resources Systems Planning and Management. *Developments in Water Science*. Elsevier.
- Jenkins, Rob, 2002: The emergence of the Governance Agenda: Sovereignty, Neo-Liberal Bias and the Politics of International Development. In: Vandana Desai and Robert Potter (eds), *The Companion to Development Studies* New York: Oxford University Press, pp. 485-488.
- Jenssen, Bernd, 1992: Planning as a Dialogue: District Development Planning and Management in Developing Countries. SPRING Research Series, SPRING-Center, Faculty of Spatial Planning, University of Dortmund, Germany.
- Kawai, Takashi, 1984. Aspects of Mekong Basin Planning. *The Japanese Society of Irrigation, Drainage and Reclamation Engineering*. *Irrigation Engineering and Rural Planning*, No. 5, 1984.
- Kothari, Uma, 2001: 'Power, Knowledge and Social Control in Participatory Development', in Bill Cooke and Uma Kothari (eds), *Participation: the New Tyranny?:* Zed Books, UK., pp.139-152.
- Kristensen, Joern, 2000. Letter from Mekong River Commission to Preben Nielsen, Asian Development Bank. Medium and Long Terms Environmental Mitigation Strategy for Yali Hydropower Project. 30 May 2000. Phnom Penh, Cambodia.
- Lang, C. 2000. The National Hydropower Plan Study: Planning and Damming in Vietnam. *Watershed*, Vol.5, No.3, 48-51.

- Latour, B., 1986. 'The Powers of Association', in J. Law (ed.), *Power, Action and Belief: A New Sociology of Knowledge?* London, Boston and Henley: Routledge and Kegan Paul.
- Lebel, L., J. Dore, R. Daniel and Y.S Koma, 2007. *Democratizing Water Governance in the Mekong Region*, Mekong Press.
- Lebel, Louis, Po Garden and Masao Imamura, 2005. 'The Politics of Scale, Position, and Place in the Governance of Water resources in the Mekong Region', in: *Ecology and Society* 10 (2), Article 18.
- Lee, Donna J. and Ariel Dinar, 1995. *Review of Integrated Approaches to River Basin Planning, Development and Management*. The World Bank. Policy Research Working Paper.
- Long, N.E., 1959. *Planning and Politics in Urban Development*, *Journal of the American Institute of Planners*, Vol. 25, no. 6, pp. 167-9.
- Long, Norman and Ann Long, 1992. *Battlefields of Knowledge: The Interlocking of Theory and Practice in Social Research and Development*. Editors. Routledge.
- Long, Norman and J.D. van der Ploeg, 1989. *Demythologizing Planned Intervention: An Actor Perspective*. *Sociologia Ruralis* 29 (3/4): pp. 226-249.
- Long, Norman and J.D. van der Ploeg, 1994. 'Heterogeneity, Actor and Structure: Towards a Reconstitution of the Concept of Structure', in David Booth, 2000. *Rethinking Social Development: Theory, Research and Practice*. Longman Scientific & Technical.
- Long, Norman and Magdalena Villarreal, 1993. 'Exploring Development Interfaces: From Transfer of Knowledge to the Transformation of Meaning', in Frans J. (ed.). *Beyond the Impasse: New Directions in Development Theory*. ZED Books.
- Long, Norman, 1977. *An Introduction to the Sociology of Rural Development*. Tavistock Publication.
- Long, Norman, 1989. *Encounters at the Interface: A Perspective on Social Discontinuities in Rural Development*. Editor. Agricultural University, Wageningen, the Netherlands.
- Long, Norman, 2001. *Development Sociology: Actor Perspectives*. Routledge.
- Long, Norman, 2002. *An Actor-oriented Approach to Development Intervention*. Background paper prepared for APO Meeting. Tokyo 22-26 April 2002.
- Loucks, Daniel P., Jerry R. Stedinger and Douglas A. Haith, 1981. *Water Resource Systems Planning and Analysis*, Prentice-Hall, Inc., Englewood Cliffs, NJ.

- Lundqvist, J., U. Lohm and M. Falkenmark (eds.), 1985. *Strategies for River Basin Management; Environmental Integration of Land and Water in a River Basin*. D. Reidel Publishing Company, Dordrecht/Boston/Lancaster.
- Luy, Ha Tien, 2008. *Final Report: Status and Issues in Hydropower Development in Vietnam*. Prepared for ADB TA.4903.VIE
http://www.vnwatersectorreview.com/files/Hydropower_development_EN.pdf (Accessed on 14 October 2008)
- Mabogunje, Akin L., 1980. *The Development Process: A Spatial Perspective*. Billings and Sons Ltd. London and Worcester.
- MC (Mekong Committee), 1968. *Upper Se San Development Project (Vietnam)*. Bangkok, Thailand.
- MC (Mekong Committee), 1970: *Report on Indicative Basin Plan: A Proposed Framework for the Development of Water and Related Resources of the Lower Mekong Basin*. Bangkok, Thailand.
- McCully, Patrick, 1996. *Silenced Rivers: The Ecology and Politics of Large Dams*. ZED Books.
- McLoughlin, J. Brian, 1969. *Urban and Regional Planning: A Systems Approach*. Faber, London.
- Meijerink, Sander V., 1999. *Conflict and Cooperation on the Scheldt River Basin*, A PhD. Thesis, Delft University of Technology, The Netherlands.
- Mekong Secretariat, 1989. *The Mekong Committee: A Historical Account (1957-89)*. Bangkok, Thailand.
- Mekong Secretariat, undated. *Mekong Development Review. Vol. 1: Interim Mekong Committee Activities 1977-1980*. MKG/R.339/CONS. Bangkok, Thailand
- Middleton, Carl, Jelson Garcia and Tira Foran, 2009. 'Old and New Hydropower Players in the Mekong Region: Agendas and Strategies', in François Molle, Tira Foran and Mira Käkönen (eds.). *Contested Waterscapes in the Mekong Region: Hydropower, Livelihoods and Governance*. Earthscan. UK and USA.
- MIME (Ministry of Industry, Mines and Energy), 2006. *Cambodia Energy Sector Strategy (Draft)*. Phnom Penh, Cambodia.

- Mollinga, Peter and Alex Bolding (eds.), 2004: *The Politics of Irrigation Reform. Contested Policy Formulation and Implementation in Asia, Africa and Latin America*. Global Environmental Governance series. Ashgate.
- Mollinga, Peter, 2008. *Water, Politics and Development: Framing a Political Sociology of Water Resources Management*. *Water Alternatives* 1(1): 7-23.
- Mosse, David, John Farrington and Alan Rew, 2002. *Development as Process: Concepts and Methods for Working with Complexity*. Routledge.
- Mostert, E., E. van Beek, N.W.M. Bouman, E. Hey, H.H.G. Savenije and W.A.H. Thissen, 1999: *River Basin Management and Planning*. In: *River Basin Management, Proceedings of the International Workshop, The Hague, 27-29 October 1999*. UNESCO, Paris.
- Mostert, Erik (ed.), 1999. *River Basin Management and Planning: Institutional Structures, Approaches and Results in Five European Countries and Six International Basins*. Research report no. 10. Delft University of Technology, the Netherlands.
- MOWRAM (Ministry of Water Resources and Meteorology), 2000. *Report on Fact-Finding Mission for Flood Investigation in the Se San River, Ratanakiri Province from 5-8 March 2000*. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 1995. *Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin*, 5 April 1995. Chiang Rai, Thailand.
- MRC (Mekong River Commission), 2000. *Terms of Reference: Fact-Finding Mission to Ratanakiri on downstream effect of Yali Reservoir Operation*. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2000a. *Terms of Reference: Fact-Finding Mission to Ratanakiri Province on Downstream Effects of Yali Reservoir Operation*. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2000b. *Back-To-Office Report: Fact-Finding Mission to Ratanakiri Province on Downstream Effects of Yali Reservoir Operation*. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2000c. *Report on Visit to Yali Hydropower Project (20-22 April 2000)*. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2000d. *Note for File: Released Water of the Yali Hydropower Reservoir*. Phnom Penh, Cambodia.

- MRC (Mekong River Commission), 2001. Report Regarding Terms of Reference for Studies on Se San River Water Management. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2002a. Fish Migrations of the Lower Mekong River Basin: Implications for Development, Planning and Environmental Management. MRC Technical Paper No. 8. Phnom Penh, Cambodia
- MRC (Mekong River Commission), 2002b. Statement from the Mekong River Commission on Issues Relating to Yali Falls Dam and Se San 3 Hydropower Plant Project. 26 November 2002. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2003. State of the Basin Report. Phnom Penh, Cambodia.
- MRC (Mekong River Commission), 2005. Overview of the Hydrology of the Mekong Basin. Vientiane, Lao P.D.R.
- MRC (Mekong River Commission), 2006a. Water quality assessment of the Se San River. Vientiane, Laos.
- MRC (Mekong River Commission), 2006b. Report of Meeting on Water Quality Assessment of the Se San River. Vientiane, Laos.
- MRC (Mekong River Commission), 2006c. Strategic Plan 2006-2010. Vientiane, Laos.
- MRC (Mekong River Commission), 2008. DSF Applications for VNMC Case Study 1: Study on Se San Sub-basin Hydropower Operation. Vientiane, Laos.
- Muukkonen, Satu, 2007. Water Management in Cambodia – Resources and Relations. A Master Thesis. University of Helsinki, Finland.
- NGO Forum, 2005. Down River: The Consequences of Vietnam's Se San River Dams on Life of Cambodia and their Meaning in International Law. Phnom Penh, Cambodia.
- Nielsen, P. (2000b). Email communication of ADB to Aviva Imhoff of International Rivers Network on 16 March 2000.
- Nielsen, Preben, 2000. Letter from Asian Development Bank to Joern Kristensen, Mekong River Commission Secretariat. Medium and Long Terms Environmental Mitigation Strategy for Yali Hydropower Project. 16 May 2000. Manila, the Philippines.
- Öjendal, Joakim, 2000. Sharing the Good: Modes of Managing Water Resources in the Lower Mekong Basin. A PhD thesis. Göteborg University, Sweden.

- Öjendal, Joakim, 2000. Sharing the Good: Modes of Managing Water Resources in the Lower Mekong River Basin. A PhD. thesis. Göteborg University, Sweden.
- Öjendal, Joakim, Vikrom Mathur and Sothirith Mak, 2002. Environmental Governance in the Mekong: Hydropower Site Selection Processes in the Se San and Sre Pok basins. Stockholm Environmental Institute. SEI/REPSI Report Series No. 4.
- Olivier de Sardan, Jean-Pierre, 2005. Anthropology and Development: Understanding Contemporary Social Change. ZED Books
- Ostrom, Elinor, 1999. Institutional Rational Choice: An Assessment of the Institutional Analysis and Development Framework. In Paul A. Sabatier (ed.). Theories of the Policy Process: Theoretical Lenses on Public Policy. Westview Press.
- Ostrom, Elinor, 2005. Understanding Institutional Diversity. Princeton University Press, Princeton and Oxford.
- Oxfam America, 2001. Economic Valuation of Livelihood Income Losses and other Tangible Downstream Impacts from the Yali Falls dam to the Se San River Basin in Ratanakiri Province, Cambodia. Phnom Penh, Cambodia.
- Oxford Dictionary, 1995. Oxford Advanced Learner's Dictionary of Current English. Oxford University Press.
- Pang, Peng and Sambo Khoun, 2000. National Working Paper on Water Resources Planning Process. National Expert Report submitted to Mekong River Commission Secretariat through Cambodia National Mekong Committee. Phnom Penh, Cambodia.
- PECC 1 (Vietnam Power Engineering Consulting Company 1), 2006. Comprehensive Development Study of Hydropower in Se San River Basin in Cambodia. Volume 2. Main Report, Hanoi, Vietnam.
- Pech, Sokhem, 1999. Evaluation of the Institutional Framework for Effective Mekong Cooperation: Cambodia National Mekong Committee. Phnom Penh, Cambodia.
- Phnom Penh Post, 2000a. Viets Say Sorry for Se San Flow. Issue 9/9, 28 April-11 May 2000. Phnom Penh, Cambodia.
- Phnom Penh Post, 2000b. Viet dam full of lethal surprises. Issue 9/6, 17-30 March 2000. Phnom Penh, Cambodia.

- Phnom Penh Post, July 19, 2002c. MRC on Yali Falls Dam: a letter from Joern Kristensen, Chief Executive Officer of MRC to Phnom Penh Post's editor. 19 July 2002. Phnom Penh, Cambodia.
- Postel, Sandra and Brian Richter, 2003. River for Live: Managing Water for People and Nature. ISLAND PRESS. Washington, Covelo, London.
- Preston, P.W, 1996. Development theory: An introduction. Blackwell Publishers.
- Probe International and International Rivers Network, 2002. Letter to the World Bank on 10 October 2002. Re: World Bank-Financed Electric Utility in Vietnam Victimizes Thousands of Cambodians http://www.internationalrivers.org/files/021019.yalifalls_0.pdf (access on 10 September 2009).
- Probe International and International Rivers Network, 2003. Letter to World Bank on 28 April 2003. Re: The World Bank and Electricity of Vietnam Corporation's Failure to Compensate for Damages Caused by Se San River Hydro Development <http://www.internationalrivers.org/en/node/1975> (access on 10 September 2009).
- Probe International and International Rivers Network, 2004. Letter to World Bank on 12 March 2004. Ref: The World Bank and Electricity of Vietnam Corporation's Se San Hydro Development.
- Probe International, 2007. Toxic Algae in Vietnam's second largest hydro reservoir linked to illnesses in downstream Cambodia. Press Advisory, July 5, 2007.
- Raksmeay Kampuchea Newspaper, 2000. Flood in Ratanakiri discovered to cause by hydropower operation in Vietnam. 25 March 2000. Phnom Penh, Cambodia.
- Ratanakiri Se San Committee, 2002. Joint Statement from ethnic minority groups living along the Se San River in Ratanakiri. Se San Protection Network. Ratanakiri, Cambodia.
- RCC (Rivers Coalition in Cambodia), 2007a. Review and feedback on "Environmental Impact Assessment (EIA) on the Cambodia part of the Se San River due to hydropower development in Vietnam prepared by SWECO. Phnom Penh, Cambodia.
- RCC (Rivers Coalition in Cambodia), 2007b. Statement. 6 July 2007. Phnom Penh, Cambodia.
- RCC (Rivers Coalition in Cambodia), undated. Terms of Reference of Rivers Coalition in Cambodia. Phnom Penh, Cambodia.

- RGC (Royal Government of Cambodia), 1999. Sub-decree on organizational structure and functioning of the Cambodia National Mekong Committee (CNMC). Phnom Penh, Cambodia.
- RGC (Royal government of Cambodia), 2006. National Strategic Development Plan 2006-2010. Phnom Penh, Cambodia.
- RGC (Royal Government of Cambodia), 2007. Law on Water Resources Management of the Kingdom of Cambodia. Phnom Penh, Cambodia.
- Ringler, Claudia, 2001. Optimal Water Allocation in the Mekong River Basin. Discussion Papers on Development Policy. Center for Development Research (ZEF), Bonn, Germany.
- Ryder, Grainne, 2008. Reclaiming the Se San River: Restoring natural flows by modifying hydropower dam operations: International experience and hope for the Se San River? Watershed Vol. 12 No.3, November 2008 (page 74-83).
- Ryder, Grainne, 2009. Powering 21st Century Cambodia with Decentralized Generation: A Primer for Rethinking Cambodia's Electricity Future. The NGO Forum on Cambodia (Cambodia) and Probe International. Canada.
- Sabatier, Paul A., 1999. Theories of the Policy Process: Theoretical Lenses on Public Policy. Westview Press.
- Schuurman, Frans J., 1993. Beyond the Impasse: New directions in development theory. ZED Books.
- Scott, J.C. 1998. Seeing like a state: How certain schemes to improve the human condition have failed. New Haven, London: Yale University Press.
- Scott, James C., 1990. Domination and the Arts of Resistance: Hidden Transcripts. Yale University Press, New Haven and London.
- Seers, Dudley, 1969: The Meaning of Development. A Paper Delivered at the 11th World Conference of the Society for International Development held in New Deli, 14 to 17 November 1969.
- Sen, Amartya, 1999. Development as Freedom. Oxford University Press.
- SPN (Se San Protection Network), 2002a. Press Release at the First National Se San River Protection Network Workshop at Mi Casa Hotel, Phnom Penh, Cambodia on Wednesday 27 November 2002. Banlung, Ratanakiri, Cambodia.

- SPN (Se San Protection Network), 2002b. Minutes of the First National Se San River Protection Network Workshop at Mi Casa Hotel, Phnom Penh, Cambodia on Wednesday 27 November 2002. Banlung, Ratanakiri, Cambodia
- SPN (Se San Protection Network), 2002c. Minutes of meeting with Cambodia National Mekong Committee. 25 November 2002. Phnom Penh, Cambodia.
- SPN (Se San Protection Network), 2003. Learning from Transboundary Environmental Conflict. Mekong Update and Dialogue 6(4):5-6. Australian Mekong Resource Center, Sydney.
- SPN (Se San Protection Network), 2005a. Evaluation Report of the Se San Protection Network Project from December 2001 – July 2005. Banlung, Ratanakiri, Cambodia.
- SPN (Se San Protection Network), 2005. Covering dam affected communities on the Se San, Sre Pok and Se Kong Rivers in Northeastern Cambodia. 3S Newsletter, August 2005. Published by SPN with support from Oxfam America. Ratanakiri, Cambodia.
- Staveren, J.M. and D.B.W.M van Dusseldorp, 1980. Framework for Regional Planning in Developing Countries: Methodology for an Interdisciplinary Approach to the Planned Development of Predominantly Rural Areas. International Institute for Land Reclamation and Improvement, Wageningen, the Netherlands.
- Stoner, James, Freeman R. and Daniel Gilbert, 2000. Management. Prentice Hall. Chicago.
- SWECO, 2007: Final Report: Rapid Environmental Impact Assessment on the Cambodian part of the Se San River due to Hydropower Development in Vietnam. SWECO Grøner in association with Norwegian Institute for Water Research, ENVIRO-DEV, and ENS Consult. Electricity of Vietnam. Hanoi, Vietnam.
- SWECO, Statkraft Grøner and Norplan, 2008: National Hydropower Plan Study, Vietnam. Volume IX: Se San River Basin. Hanoi, Vietnam.
- SwedPower, 1986. Appraisal of the Yali Falls hydropower project (main report). Mekong Secretariat. Bangkok, Thailand.
- Taylor, Nigel, 1996. Urban Planning Theory since 1945. Sage.
- TERRA (Towards Ecological Recovery and Regional Alliance), 2000. Letter to Chief Executive Officer of Mekong River Commission Secretariat. 8 March 2000. Bangkok, Thailand.

- Than Nien News, 2008. Banks finance \$51 millions for hydropower plant. 16 January 2008. <http://www.thanhniennews.com/business/?catid=2&newsid=35069> (access on 09 March 2008)
- Thirlwall, A.P., 1986: Growth and Development. Third Edition, Macmillan, Education Ltd., London.
- Trandem, Ame, 2008. A Vietnamese/Cambodian Transboundary Dialogue: Impacts of dams on the Se San River. *Development*, 2008, 51, (108-113). Society for International Development 1011-6370/08.
- United Nations Special Fund, 1962. Upper Se San Project: First Phase Report. Bangkok. Bangkok, Thailand.
- United Nations, 1950. Flood damage and flood control activities for Asia and the Far East Flood Control Series no. 1. United Nations Economic Commission for Asia and the Far East. Bangkok, Thailand.
- United Nations, 2004. Kingdom of Cambodia: Public Administration Country Profile. <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan023231.pdf> (access on 25 March 2009).
- Van den Hoek, Annet I., 1992. Planning as a Learning Process: A Strategy for Planning Land Use Programmes at Local Level with Special Reference to the Uplands of Java. A PhD. Thesis. Wageningen, the Netherlands.
- Vietnam Ministry of Foreign Affairs, 2008: Joint Communiqué: The Fourth Meeting on Cooperation and Development Among Border Provinces of Vietnam-Cambodia. 28 February 2008. Sihanouk Ville, Cambodia. <http://www.mofa.gov.vn/en/nr040807104143/nr040807105001/ns080228163028> (access on 07 May 2008).
- Vietnam News, 2007. Electricity of Vietnam (EVN) to build two Cambodian Plants. 15 September 2007. Hanoi, Vietnam.
- VNMC (Vietnam National Mekong Committee), 2000. Operation of Yali Reservoir in Central Highlands. Facsimile from VNMC to MRC Secretariat. 15 March 2000. Hanoi, Vietnam.
- VNMC (Vietnam National Mekong Committee), 2003: Report, Analysis of Sub-area 7V. Hanoi, Vietnam.

- Warwick, D., 1982. Bitter Pills: Population Policies and their Implementation in Developing Countries. Cambridge University Press.
- WATCO, 1984. Lower Mekong Water Resources Inventory – a Component of the Lower Mekong Basin Information System. Interim Mekong Committee. Bangkok, Thailand.
- Waterpower Magazine, 2002. Tim Sharp reports on Vietnam’s plans to develop the US2B Se San cascade with financial aid from Russia.
<http://www.waterpowermagazine.com/story.asp?storyCode=2017160> (access on 16 May 2008)
- Watershed, 1999. Se San 3 to start a cascade on the Se San River. Vol. 5 No. 2. November 1999-February 2000. Bangkok, Thailand.
- Watershed, 2000a. The problems have stopped and the river is flowing smoothly. Vol. 6. No. 1. July-October 2000. Bangkok, Thailand.
- Watershed, 2000b. Vietnam Rejects ADB money for Se San 3 dam. Vol. 6. No.2. November 2000- February 2001. Bangkok, Thailand.
- WCD (World Commission on Dams), 2000. Dams and Development: A New Framework for Decision-making. The Report of the World Commission on Dams.
- Wester, Philippus, and Jeroen Warner, 2002: ‘River basin management reconsidered’, in Anthony Turton and Roland Henwood (eds.). Hydropolitics in the Developing World: A Southern African Perspective, African Water Issues Research Unit (AWTRU), South Africa.
- White, G. F et al., 1962. Economic and social aspects of lower Mekong development Committee for Co-ordination of investigations of the Lower Mekong Basin. Bangkok, Thailand.
- White, Wayne C., 2000. A review of the Se San 3 hydropower project feasibility study. Prepared for Probe International. October 16, 2000. Canada.
- World Bank, 1993: Water resource management, A World Bank policy paper. Washington D.C.
- World Bank, 2001. Vietnam country assistance evaluation. The World Bank. Washington D.C.

- World Bank, 2003a. Letter to Probe International and International Rivers Network. Vietnam: Yali-Falls dam. 24 February 2003. Washington D.C. <http://www.internationalrivers.org/en/node/1973> (access on 10 September 2009)
- World Bank, 2003b. Villagers in Ratanakiri share concerns with World Bank. The World Bank Newsletter, Vol. 1, No. 4, September 2003. Phnom Penh, Cambodia.
- World Bank, 2004. Letter to Probe International and International Rivers Network. Hydropower developments on the Se San River. 4 June 2004. Washington D.C.
- World Bank, 2007. Country partnership strategy with the Socialist Republic of Vietnam for the period 2007 – 2011. Washington D.C.
- Worley Ltd., 2000a. Se San 3 Hydropower Project: Yali/Se San 3 Environmental and Social Impact Analysis Study, Volume 1 of 2 (Report prepared for ADB). Manila, the Philippines.
- Worley Ltd., 2000b. Se San 3 Hydropower Project: Yali/Se San 3 Environmental and Social Impact Analysis Study, Volume 2 of 2 (Report prepared for ADB). Manila, the Philippines.
- Wyatt, Andrew B. and Ian G. Baird, 2007. Transboundary Impact Assessment in the Se San River Basin: The Case of the Yali Falls Dam. *International Journal of Water Resources Development*, 23:3, 427 – 442.
- Wyatt, Andrew, 2002. Power sector restructuring in Vietnam: the construction and transfer of risk. A paper presented in Asia Power Sector Reforms Workshop 2002 at Chulalongkorn University, Bangkok, Thailand.